

relevant results and theoretical developments
of science and research

10

2020
issue 2

AD ALTA

Journal of Interdisciplinary Research

AD ALTA: Journal of Interdisciplinary Research

Double-Blind Peer-Reviewed

Volume 10, Issue 2, 2020

Number of issues per year: 2

MAGNANIMITAS Assn.

AD ALTA: JOURNAL OF INTERDISCIPLINARY RESEARCH

© 2020 MAGNANIMITAS, ATTN. AND/OR ITS LICENSORS AND AFFILIATES (COLLECTIVELY, "MAGNANIMITAS"). ALL RIGHTS RESERVED.

JOURNAL NO.: 10/02 (VOLUME 10, ISSUE 2)

ADDRESS: CESKOSLOVENSKE ARMADY 300, 500 03, HRADEC KRALOVE, THE CZECH REPUBLIC, TEL.: 498 651 292, EMAIL: INFO@MAGNANIMITAS.CZ

ISSN 1804-7890, ISSN 2464-6733 (ONLINE)

AD ALTA IS A PEER-REVIEWED JOURNAL OF INTERNATIONAL SCOPE.

2 ISSUES PER VOLUME.

AD ALTA: JOURNAL OF INTERDISCIPLINARY RESEARCH USES THE RIV BRANCH GROUPS AND BRANCHES, BUT THE JOURNAL IS NOT A PART OF RIV. THE RIV IS ONE OF PARTS OF THE R&D INFORMATION SYSTEM. THE RIV HAS COLLECTED AN INFORMATION ABOUT RESULTS OF R&D LONG-TERM INTENTIONS AND R&D PROJECTS SUPPORTED BY DIFFERENT STATE AND OTHER PUBLIC BUDGETS, ACCORDING TO THE R&D ACT [CODE NUMBER 130/2002], THE CZECH REPUBLIC.

A	SOCIAL SCIENCES
B	PHYSICS AND MATHEMATICS
C	CHEMISTRY
D	EARTH SCIENCE
E	BIOLOGICAL SCIENCES
F	MEDICAL SCIENCES
G	AGRICULTURE
I	INFORMATICS
J	INDUSTRY
K	MILITARISM

ALL INFORMATION CONTAINED HEREIN IS PROTECTED BY LAW, INCLUDING BUT NOT LIMITED TO, COPYRIGHT LAW, AND NONE OF SUCH INFORMATION MAY BE COPIED OR OTHERWISE REPRODUCED, REPACKAGED, FURTHER TRANSMITTED, TRANSFERRED, DISSEMINATED, REDISTRIBUTED OR RESOLD, OR STORED FOR SUBSEQUENT USE FOR ANY SUCH PURPOSE, IN WHOLE OR IN PART, IN ANY FORM OR MANNER OR BY ANY MEANS WHATSOEVER, BY ANY PERSON WITHOUT MAGNANIMITAS'S PRIOR WRITTEN CONSENT. ALL INFORMATION CONTAINED HEREIN IS OBTAINED BY MAGNANIMITAS FROM SOURCES BELIEVED BY IT TO BE ACCURATE AND RELIABLE. BECAUSE OF THE POSSIBILITY OF HUMAN OR MECHANICAL ERROR AS WELL AS OTHER FACTORS, HOWEVER, ALL INFORMATION CONTAINED HEREIN IS PROVIDED "AS IS" WITHOUT WARRANTY OF ANY KIND. UNDER NO CIRCUMSTANCES SHALL MAGNANIMITAS HAVE ANY LIABILITY TO ANY PERSON OR ENTITY FOR (A) ANY LOSS OR DAMAGE IN WHOLE OR IN PART CAUSED BY, RESULTING FROM, OR RELATING TO, ANY ERROR (NEGLIGENT OR OTHERWISE) OR OTHER CIRCUMSTANCE OR CONTINGENCY WITHIN OR OUTSIDE THE CONTROL OF MAGNANIMITAS OR ANY OF ITS DIRECTORS, OFFICERS, EMPLOYEES OR AGENTS IN CONNECTION WITH THE PROCUREMENT, COLLECTION, COMPILATION, ANALYSIS, INTERPRETATION, COMMUNICATION, PUBLICATION OR DELIVERY OF ANY SUCH INFORMATION, OR (B) ANY DIRECT, INDIRECT, SPECIAL, CONSEQUENTIAL, COMPENSATORY OR INCIDENTAL DAMAGES WHATSOEVER (INCLUDING WITHOUT LIMITATION, LOST PROFITS), EVEN IF MAGNANIMITAS IS ADVISED IN ADVANCE OF THE POSSIBILITY OF SUCH DAMAGES, RESULTING FROM THE USE OF OR INABILITY TO USE, ANY SUCH INFORMATION.

PAPERS PUBLISHED IN THE JOURNAL EXPRESS THE VIEWPOINTS OF INDEPENDENT AUTHORS.

TABLE OF CONTENTS (BY BRANCH GROUPS)

A SOCIAL SCIENCES

TAX GAP AS A TOOL FOR MEASURING VAT EVASION IN THE EU COUNTRIES ALENA ANDREJOVSKÁ, VERONIKA KONEČNÁ, JANA HAKALOVÁ	8
THE PECULIARITIES OF THE FORMATION OF THE MUSICAL-PERFORMING EXPERIENCE OF THE FUTURE TEACHER OF THE MUSICAL ART IN THE EDUCATIONAL INSTITUTIONS OF UKRAINE MARYNA BILETSKA, TATIANA PIDVARKO, JAROSLAVA SOPINA, LINA KOTOVA	14
PREPARATION OF SOLDIERS FOR A SECOND CAREER: EVALUATION OF APPROACH OF THE CZECH REPUBLIC KRISTÝNA BINKOVÁ, KATEŘINA POCHOBRADSKÁ, DALIA PRAKAPIENĚ, ŽIVILĚ TUNČIKIENĚ	19
INCREASING PUPILS' INTEREST IN NATURE PROTECTION AND SUSTAINABLE DEVELOPMENT THROUGH A PHILOSOPHICAL LITERARY STORY SIMONA BORISOVÁ	27
TWO ASPECTS OF MEMORY FORMATION IN HISPANIC AMERICAN LITERATURE MONIKA BREZOVÁKOVÁ, MAGDA KUČERKOVÁ, NATÁLIA RUSNÁKOVÁ	31
EXPLORING UNIVERSITY CAMPUSES AS URBAN DEVELOPMENT BOOSTERS AND DESIGN FLAGSHIPS IN URBAN LANDSCAPES MIROSLAV ČIBIK, ROBERTA ŠTĚPÁNKOVÁ	37
THE TRANSFER EFFECT OF MUSICAL ACTIVITIES IN TERMS OF ABILITIES AND PERSONALITY DEVELOPMENT - ABOUT THE RESULTS OF A MUSIC-PEDAGOGICAL STUDY AGÁTA CSEHI	46
THE ANALYSIS OF DROP-OUT IN THE POTENTIAL DIAGNOSTIC SYSTEMS FOR SELF-HARM IN THE ADOLESCENT POPULATION SLAVKA DEMUTHOVÁ, OGNEN SPASOVSKI	51
PRECONCEPTIONS ABOUT THE SELECTED PHENOMENON OF "SUCCESS" AS A POTENTIAL IDENTIFICATION TOOL FOR GIFTEDNESS IN CHILDREN OF PRE-PRIMARY EDUCATION JANA DUCHOVIČOVÁ, REBEKA ŠTEFÁNIA KOLEŇÁKOVÁ	56
COOPERATION OF SCHOOL AND FAMILY IN PREVENTION OF AND DEALING WITH PROBLEM BEHAVIOUR OF PUPILS IN THE SLOVAK REPUBLIC INGRID EMMEROVÁ, TOMÁŠ JABLONSKÝ	64
FOREIGN DIRECT INVESTMENTS AND THEIR IMPACT ON DEVELOPMENT OF ECONOMIC INDICATORS: EVIDENCE FROM SLOVAK REPUBLIC MICHAL FABUS	69
RELATIONSHIP OF CORPORATE SOCIAL RESPONSIBILITY AND INNOVATION IN SMES: CASE STUDY IN SELECTED CEE COUNTRIES GÁBOROVÁ, IVANA	73
PRACTICES FOR ENSURING RELIGIOUS SECURITY: PSYCHOLOGICAL AND LEGAL ASPECTS YULIA VIKTOROVNA GAVRILOVA, ALEXEY P. ALBOV, ZHANNA ROBERTOVNA GARDANOVA, MARINA ANATOLEVNA ZHIRONKINA	80
EFFECTS OF QUANTITATIVE EASING ANNOUNCEMENTS ON EQUITIES: EU EVIDENCE LEOS SAFAR, JOZEF GLOVA, ALENA ANDREJOVSKA JAKUB SOPKO	83
UTILISATION OF TECHNOLOGIES AND INNOVATIONS IN LOGISTICS OF AUTOMOTIVE ENTERPRISES KLAUDIA GUBOVÁ	91
CRIMINAL OFFENCES RELATED TO CORRUPTION IN THE SLOVAK REPUBLIC AND THE UNITED STATES OF AMERICA – COMPARISON STUDY JOZEF ČENTĚŠ, NATÁLIA HANGÁČOVÁ	96
APPLICATION OF ONLINE TEACHING TOOLS AND AIDS DURING CORONA PANDEMICS 2020 ALENA HAŠKOVÁ, CSILLA ŠAFRANKO, MARTINA PAVLÍKOVÁ, LUCIA PETRIKOVIČOVÁ	106
ASSESSMENT OF RELATION BETWEEN LEGISLATIVE RISK AND EXPECTED PROFITABILITY OF A SUBSIDIZED PROJECT SIMONA HAŠKOVÁ, PAVEL ROUSEK, JAKUB HORÁK	113
ELECTRONIC EDUCATION AND ONLINE TEACHING AT SLOVAK UNIVERSITIES DURING THE COVID-19 PANDEMIC VLADIMÍRA HLADÍKOVÁ	117

PARTIAL COGNITIVE FUNCTIONS AND READING COMPETENCE OF STUDENTS WITH MILD INTELLECTUAL DISABILITIES BIBIÁNA HLEBOVÁ, JANA KOŽÁROVÁ	122
GENDER DIFFERENCES IN SUBJECTIVE WELL-BEING OF HIGH SCHOOL STUDENTS WITH HEALTH DISORDERS PREFERRING SEDENTARY LEISURE ACTIVITIES HANA HOLIČKOVÁ, DAGMAR NEMČEK	135
EXAMINATION OF TEACHER STUDENTS' INDUCTIVE THINKING ABILITY PÉTER TÓTH, KINGA HORVÁTH, GYÖRGY JUHÁSZ	138
FORUM THEATER AND MOVEMENT ZUZANA HUBINSKÁ	146
ENVIRONMENTAL EDUCATION IN THE FOREST ENVIRONMENT AND ITS KEY FACTORS IN PRE-ELEMENTARY EDUCATION DANA CHLPOSOVÁ, JOZEF VYBOSTOK, DANA KOLLAROVÁ, DARINA VYBOHOVA	151
THE PROCESS OF FINANCIAL PERFORMANCE EVALUATING OF THE COMPANY ANNA JACKOVÁ	161
USE OF AGRICULTURAL LAND CATEGORIES IN EU COUNTRIES KRISTINA KABOURKOVÁ, MAREK VOCHOZKA, JAROSLAV STUHLÝ	165
EXPERIENCE EDUCATION TO ALLEVIATE FEARS OF EDUCATOR CANDIDATES IN THEIR UNIVERSITY STUDIES AGÁTA CSEHI, KATALIN KANCSNÉ NAGY, ANITA TÓTH-BAKOS	170
WELFARE STATE VS. WARFARE STATE MILAN KATUNINEC	176
ACTIVATIONAL TEACHING METHODS AS A TOOL FOR DEVELOPMENT OF CRITICAL THINKING REBEKA ŠTEFÁNIA KOLEŇÁKOVÁ, SIMONA BORISOVÁ, LENKA ŠUTOVCOVÁ	181
TEACHERS' PERCEPTION OF THE BOOKS OF SUBJECTS OF ELEMENTARY REALIA WITH AN EMPHASIS ON FOREST ENVIRONMENT TOPICS DANA KOLLAROVÁ, ALEXANDRA NAGYOVA	188
LEISURE ACTIVITIES AND EDUCATION OF SENIORS IN RESIDENTIAL FACILITIES MIROSLAVA DEBNÁRIKOVÁ, MICHAL KORICINA	195
THE INTEGRATION OF CRITICAL AND MORAL THINKING: THE ATTITUDES OF THE TEACHER STUDENTS TO THE DEVELOPMENT OF THEIR CRITICAL AND MORAL THINKING MARTINA KOSTURKOVÁ	201
EXISTENCE OF LATENT AGGRESSION AT STANDARD AND SPECIAL CLASSES IN SLOVAK SCHOOLS – EDUCATORS' FINDINGS BARBORA KOVÁČOVÁ, STANISLAV BENČIČ, ANNA HUDECOVÁ, HELENA ORIEŠČÍKOVÁ, ALEXANDRA ALEKSANDRA SIEDLACZEK-SZWED	204
GRAPHIC VISUALIZATION OF LEARNERS' MENTAL REPRESENTATION NINA KOŽÁROVÁ, JANA DUCHOVIČOVÁ	208
DETERMINING CARRYING AMOUNT OF INTANGIBLE ASSETS USING MODIFIED INCOME-BASED AND ASSETS-BASED VALUATION METHOD DIFFERENCE TOMÁŠ KRULICKÝ, VERONIKA MACHOVÁ, ZUZANA ROWLAND	212
DEVELOPMENT OF ECONOMIC VALUE ADDED (EVA) OF LEASING COMPANIES ACTIVE IN THE CZECH REPUBLIC IN THE YEARS 2005-2019 JIRÍ KUČERA, PETR ŠULEŘ	218
IS LARP THE ANSWER TO THE GAMIFICATION OF EVENTS AND EDUCATION? A CASE STUDY OF THE ONGOING IMPLEMENTATION OF QUESTS AND COINS TO THE CORE OF THE FESTIVAL ALEXANDRA KUKUMBERGOVÁ, MICHAL KABÁT	224
INNOVATIVE INFORMATION AND COMMUNICATION TECHNOLOGIES FOR ERGOTHERAPISTS APPLIED DURING ENGLISH LEARNING IN UKRAINE ALLA KULICHENKO, YURIY POLYEZHAYEV	228
EXPERIENCES AND EXPECTATIONS OF STUDENTS AND TEACHERS IN THE FIELD OF USING E-LEARNING IN MUSIC EDUCATION LIBOR FRIDMAN, ŠTEFAN PETRÍK, PAVEL MARTINKA MICHAL BRODNIANSKY	234
SLEEP DEPRIVATION AS KEY FACTOR OF INFLUENCING COGNITIVE ABILITIES IN CONTEXT OF SECURITY ENVIRONMENT DAVID ULLRICH, EVA AMBROZOVÁ, PAVEL SLÁDEK, EVA KOZÁKOVÁ, FRANTIŠEK MILICHOVSKÝ	244

CURRENT TAXATION MECHANISM OF CREDIT INSTITUTIONS IN THE RUSSIAN FEDERATION: ASSESSMENT OF THE STATE AND WAYS OF IMPROVEMENT AT THE CURRENT STAGE KHAIBAT MAGOMEDTAGIROVNA MUSAIEVA, FARIDA ISLAMUDINOVNA MIRZABALAEVA, ZAGIDAT IBRAGIMBEKOVNA SHAKHBANOVA, GALIMAT ALIEVNA BAMMAEVA	249
LEGAL ISSUES AND PRACTICAL PROBLEMS IN THE MANAGEMENT OF THE SECURITIES PORTFOLIO IN SLOVAKIA TOMAS PERACEK	255
TEACHERS' OPINIONS AND EXPERIENCES WITH AN INCLUSIVE SCHOOL ENVIRONMENT VLASTA BELKOVÁ, ŠTEFAN PETRIK, PATRÍCIA ZOLYOMIOVÁ	261
THEORETICAL AND PRACTICAL VIEW ON DETERMINANTS OF EDUCATION AS A PRODUCTIVE ELEMENT OF INDIVIDUAL AND HOUSEHOLD CONSUMPTION IN THE CONTEXT OF FUTURE CHALLENGES OF THE SLOVAK REPUBLIC MARIANNA PSÁRSKA, JAKUB HORÁK	269
THE INFLUENCE OF THE TRANSACTION TAX ON THE SELECTED ECONOMIC INDICATORS MARTINA REGÁSKOVÁ, ANNA BÁNOCIOVÁ	275
DEGREE OF EXTROVERSION OF UNIVERSITY STUDENTS OF MARKETING COMMUNICATION PAVEL ROSENLACHER	281
SLOVAK ADOLESCENTS' VIEW OF THE PERSONS SERVING AN ALTERNATIVE SENTENCE BEÁTA BALOGOVÁ, MIRIAMA ŠARIŠSKÁ, MARTIN HAMADEJ	285
SELF-REGULATION OF LEARNING IN THE NATURAL SCIENCE OF FUTURE TEACHERS EVA SEVERINI, MÁRIA KOŽUCHOVÁ, MARTIN KURUC, DUŠAN KOSTRUB	289
SELF-REGULATORY TEACHING IN INTERPRETATIONS OF SLOVAK TEACHERS EVA SEVERINI, BLANKA KOŽÍK LEHOTAYOVÁ, MARTIN KURUC	294
QUALITY ASSESSMENT OF SELECTED RESTAURANT SERVICES USING THE MYSTERY SHOPPING METHOD: CASE STUDY OF PORTUGAL IVICA LINDEROVÁ, PETR SCHOLZ, NUNO MIGUEL CASTANHEIRA ALMEIDA	298
VALUE ANALYSIS OF COMMUNICATION IN THE MYTHOLOGICAL SPACE OF A MULTIPOLAR WORLD VIKTOR SIDOROV, IGOR BLOKHIN, SERGEY KURUSHKIN, SVETLANA SMETANINA	305
NATIONAL INTERRELATIONSHIPS FROM THE VIEWPOINT OF BIOLOGIST ALEXANDER V. SIROTKIN	312
HOW TO LEAD THE TEAM THROUGH THE CRISIS – COMPARATIVE STUDY BETWEEN BUSINESSES, SELF GOVERNANCE AND HEALTHCARE FACILITIES ZUZANA SKORKOVÁ, NADEŽDA JANKELOVÁ, ZUZANA JONIAKOVÁ, JANA BLŠTÁKOVÁ, KATARÍNA PROCHÁZKOVÁ	315
VALUE ORIENTATION OF CONVICTED WOMEN IN SLOVAKIA IN RELATION TO THEIR AGE AND EDUCATION DOMINIKA TEMIAKOVÁ	321
SEXTING AND FAMILY ENVIRONMENT OF CHILDREN AND ADOLESCENTS TOMÁŠ TURZÁK, VIERA KURINCOVÁ, KATARÍNA HOLLÁ, HANA ZELENÁ	326
RELATIONSHIP BETWEEN RISK BEHAVIOR OF PUBESCENTS AND CHARACTERISTICS OF THEIR FAMILY ENVIRONMENT MARCELA VEREŠOVÁ, KRISTÍNA MUJKOŠOVÁ	331
WEB 2.0 TOOLS SERVING NEEDS OF GENERATION Z KATERINA GAJDÁČOVÁ VESELÁ, JANA PUSCHENREITEROVÁ	336
A VIEW ON THE LEVEL OF READING STRATEGIES OF THE SELECTED GROUP OF FIFTEEN YEARS OLD UKRAINIAN PUPILS DANA VICHERKOVÁ	343
STUDY OF THE IMPACT OF THE PRINCIPLES FORMED IN INTERNATIONAL HUMAN RIGHTS STANDARDS ON THE DEVELOPMENT OF THE PENITENTIARY SYSTEM IN UKRAINE MYKHAILO YATSYSHYN, PETRO HLAMAZDA, ALLA HOROT, SVITLANA BULAVINA, ZINAIDA SAMCHUKKOLODIAZHNA, OKSANA STARCHUK	348
MASSIVE OPEN ONLINE COURSES (MOOCS): THE PROMISE OF NON-FORMAL EDUCATION IN ENGLISH LANGUAGE LEARNING DIANA ŽIDOVÁ	352

I INFORMATICS

- A BUSINESS INTELLIGENCE SOLUTION FOR BUSINESS CONTINUITY AND SAFETY MANAGEMENT IN PUBLIC UNIVERSITIES** 357
ATHANASIOS PODARAS, TOMÁŠ ŽÍŽKA, DANA NEJEDLOVÁ, DAVID KUBÁT

J INDUSTRY

- CALCULATION OF PROCESS' IDEALITY DEGREE THROUGH IDEALITY EQUATION OF TRIZ** 367
VLADIMÍR SOJKA, ANABELA C. ALVES, PETR LEPŠÍK
- CONSTRUCTION-TECHNICAL SPECIFICS OF A PREFABRICATED WOOD CONSTRUCTION SYSTEM** 373
JOZEF ŠVAJLENKA, MÁRIA KOZLOVSKÁ

A SOCIAL SCIENCES

AA	PHILOSOPHY AND RELIGION
AB	HISTORY
AC	ARCHAEOLOGY, ANTHROPOLOGY, ETHNOLOGY
AD	POLITICAL SCIENCES
AE	MANAGEMENT, ADMINISTRATION AND CLERICAL WORK
AF	DOCUMENTATION, LIBRARIANSHIP, WORK WITH INFORMATION
AG	LEGAL SCIENCES
AH	ECONOMICS
AI	LINGUISTICS
AJ	LITERATURE, MASS MEDIA, AUDIO-VISUAL ACTIVITIES
AK	SPORT AND LEISURE TIME ACTIVITIES
AL	ART, ARCHITECTURE, CULTURAL HERITAGE
AM	PEDAGOGY AND EDUCATION
AN	PSYCHOLOGY
AO	SOCIOLOGY, DEMOGRAPHY
AP	MUNICIPAL, REGIONAL AND TRANSPORTATION PLANNING
AQ	SAFETY AND HEALTH PROTECTION, SAFETY IN OPERATING MACHINERY

TAX GAP AS A TOOL FOR MEASURING VAT EVASION IN THE EU COUNTRIES

^aALENA ANDREJOVSKÁ, ^bVERONIKA KONEČNÁ, ^cJANA HAKALOVÁ

^{a,b}Faculty of Economics, Department of Finance, Technical University of Košice, Slovak Republic

^cFaculty of economics, Department of Accounting and Taxes, VSB – Technical University of Ostrava, Czech Republic
email: ^aalena.andreovska@tuke.sk, ^bveronika.konecna@tuke.sk, ^cjana.hakalova@vsb.cz

Acknowledgement: This research was supported by VEGA project No. 1/0430/19 Investment decision-making of investors in the context of effective corporate taxation.

Abstract: VAT is one of the most decisive tax revenues sources in the EU Member States. Due to financial frauds and insufficient tax system, there is a billion loss of EUR every year in the European budget. The article deals with the impact of the tax evasion on economies of the EU Member States. By applying the top-down approach, we observed tax gaps as a quantifier of tax evasion from 2004 to 2017. The period around the economic crisis in 2009 was examined in more detail, as there was a sharp change in the evolution of tax gaps. We constructed a regression model, which examined the relationship of the tax gap and VAT tax revenues to selected determinants of tax evasion. The results showed that tax gaps in the Member States have been growing every year. We also found that there is an increase in tax revenues, but tax liabilities increase to greater extent.

Keywords: tax evasion, tax gap, tax transparency, tax collection efficiency.

1 Introduction

As each tax, value-added tax (VAT) is sensitive for tax evasion and frauds. VAT mechanism allows to economic entities and companies many unique ways for tax abuse. At the EU level, there is a quite common discussed tax evasion and frauds in recent times. The estimates of tax gaps represent gross indicators of tax revenues loss. In recent decades, the national tax reports, and international institutions, such as FISCALIS 2020 Project, developed several methods for estimation of tax revenue loss. FISCALIS 2020 is coordinated by the European Commission and contains a group of projects for tax gaps analysis. The aim is to gather knowledge and exchange experience with existing tax gap estimates. To find a solution, it is crucial to increase transparency and knowledge about these tax issues within the wider public. Generally, tax frauds, especially VAT frauds, cause a shock in all the economic sectors in a country. They cause widespread damage to economic and social life, mainly serious losses of state budgetary revenues. Due to the consequence of tax frauds, there is insufficient funding of the areas needed to ensure a standard level of service to citizens. Tax frauds distorts healthy competition in the business sector and leads to illegal activities in other forms of criminal activity.

2 Literature review

VAT belongs to indirect tax and represents the core of the entire tax system. According to the Council Directive No. 2006/112/EC of November 28th, 2006 on the common system of value-added tax, VAT shall be applied to all transactions carried out in counter value by the taxable person. VAT system has also some advocates and opponents. In general, there is a widely accepted opinion that VAT makes it easier to increase revenue for the state budgets, and thereby helps to improve the efficiency of the tax system. However, this argument is true only for a short-term view. VAT is no longer a privilege for rich countries only. Keen & Lockwood (2010) points out the fact that the more open countries, the less prone to VAT. The necessary and sufficient condition for acceptance or the change in VAT is to reduce the marginal cost of public spending. Measuring tax evasion is a complex process that cannot be measured with complete accuracy. However, different methods will give us different estimates. Hutton (2017) states that the VAT evasion is often quantified through tax gap. To measure VAT effectiveness, it is used c-efficiency ratio VAT performance and VAT compliance gap. Rubin (2011) characterized the VAT gap as a difference between theoretical tax liability set by legislative and real tax liability of gained revenues. Gemmel (2012) found out

that the tax gap shall be measured from the macro- and microeconomic point of view. From the macroeconomic view, tax gap methodology are top-down or indirect methods and usually use economic aggregates in the whole economy. The microeconomic methodology is the bottom-up (direct) approach and uses more specific and individual data. The top-down approach provides a complex assessment of all tax losses through tax gap measurement. Louvot-Runavot (2011) claims that the top-down approach is focused on providing one estimate based on data independent from the tax authority. The top-down method may potentially be beneficial mainly when operating information of tax administration is inadequate or not sufficient, and even possibly contaminated by governance issues. However, if national accounts data is estimated or adjusted through taxes (for example through using risk-based audit data to estimate tax evasion and fraud), then it will worsen formal independence. This method is usually less time-consuming and requires relatively little resources, while the results can be considered as complex and time-comparable, allowing to follow the trend over time. On the other hand, it is limited by the fact that through this approach can be estimated only sectors in macroeconomic statistics, and the estimation quality is dependent on the completeness of adjustments for the shadow economy in the national accounts. Besides that, the foreign tax evasion aspects (such as offshore procedure, bank deposits, or foreign assets) cannot be classified based on national accounts data. Rodrigues (2015) claims that the top-down approach is based on the presumption that the data source to estimate the tax gap covers the entire tax base. Therefore, data for tax gap estimation is usually derived from macroeconomic models or national accounts. National accounts describe a structure and development of the economy within the country or geographic area (for example the EU) and describe all production activities. There is the European System of National and Regional Accounts (ESA 2010) in the EU countries. As European Commission (2013) states, ESA 2010 is the newest internationally compatible EU accounting framework for a systematic and detailed description of an economy. From September 2014, the data transmission from the Member States to Eurostat is following ESA 2010 rules. ESA 2010 encourages the Member States to ensure accuracy, reliability, consistency, and comparability of the accounts by planning and implementing data revisions in line with the revision policies.

Toder (2007) states that the tax gap is the difference between the amount of theoretical VAT liability and the number of actual VAT revenues in the concerned country and year. The VAT gap is not only a tool for measuring tax frauds. Since it can also include VAT paid due to tax strategies or due to insolvency of the taxpayer, quantifying the VAT gap helps realize its size and trend as an indicator of potential VAT evasion. Also, there could be evidence of a higher VAT gap if the tax authorities are not working effectively enough. For this reason, the VAT gap is sometimes used as a measure of the efficiency of tax collection by tax authorities that are not affected by economic or VAT rate changes. Increasing the size of the VAT gap may indicate either tax evasion or low efficiency of tax collection, or both. Therefore, politicians and tax administration should pay adequate attention to these problems.

3 Material and research methods

This contribution aims to quantify VAT evasion, which is based on the tax gap methodology. By applying the top-down approach, we have quantified the tax gaps in all EU Member States from 2004 to 2017. We have examined in more detail the period of the economic crisis as there has been a significant change in the tax gap development at that time. To analyze VAT gap, we used regression analysis, and the data was structured as panel data, retrieved from the Eurostat database (2018) for the EU-28 Member States.

4 The calculation of the tax gap

To calculate the tax gap, it was first necessary to calculate the total tax liabilities. In this calculation, we used theoretical VAT liabilities according to Barbone (2013), included five VAT sub-aggregates, i.e. the final household consumption, government expenditures, intermediate consumption, gross fixed capital formation (GFCF), and the final consumption of non-profit institutions serving households (NPISH). We considered the sectoral classification of the economy, the effective tax rate, and the percentage of exports of goods that are exempt from VAT. Barbone (2013) classified theoretical VAT liabilities as follows:

$$VTTL = \sum_{i=1}^n (rate_i \times Value_i) + \sum_{i=1}^n (rate_i \times propex_i + IC \text{ Value}_i + i = 1 n rate_i \times propex_i + GFCF \text{ Value}_i + net \text{ adjustmennts}) \quad (1)$$

where:

rate – effective tax rate

Value – the final household consumption NPISH and government consumption

IC Value – the intermediate consumption

Propex – a percentage of output exempt from VAT in the sector

GFCF Value – gross fixed capital formation

i – economic sectors.

In our calculation of tax liabilities, we used a study CASE (2018) which the European Commission considers as key research in assessing VAT evasion. We adjusted the total VAT liability and added non-sectoral economic classification, i.e. we considered final consumption of all the products regardless of the goods and services for which reduced or super-reduced tax rate is applied. In the formula, the percentage of output that is exempt from taxation represents the sum of export within the EU (intra-EU export) non-EU export and the percentage of taxes and duties excluding VAT. Total tax liabilities are calculated as follows:

$$Total \text{ tax liabilities} = (Gov + Hous + NPISH) * er + (GFCG + IC) * er * out \quad (2)$$

where:

Gov – the final government consumption, in million EUR

Hous – the final household consumption, in million EUR

NPISH – the final consumption non-profit institutions serving households, in million EUR

er – effective tax rate, in %

GFCF – gross fixed capital formation, in million EUR

IC – the intermediate consumption, in million EUR

out – a percentage of non-EU export and intra-EU export, percentage of taxes and duties excluding VAT, in %.

Since one of the input variables is the effective VAT rate, we used the following formula for its calculation:

$$Effective \text{ Tax Rate} = \frac{tax \text{ revenues}}{Hous + corporation} \quad (3)$$

where:

Hous – the final household consumption, in million EUR

corporation – output for the final consumption of non-financial corporations, in million EUR.

We included the final household consumption in the tax base as VAT is the most burdened by it, and also received output for the final consumption of non-financial corporations retrieved from Eurostat (2018) which includes all economic sectors based on NACE classification. After calculation total tax liabilities, we measured the tax gap using the following formula:

$$Tax \text{ Gap} = total \text{ tax liabilities} - total \text{ tax revenues} \quad (4)$$

5 The regression analysis

The regression analysis examined the relationship between individual variables and the evolution of tax gaps. The explained variable represents the tax gap with VAT tax revenue. The general panel model for our regression analysis is defined as follows:

$$y_{it} = \alpha + \beta_{it}^T x_{it} + u_{it} \quad (5)$$

where:

y_{it} - dependent (response) variable (i.e. tax evasion as a proportion of tax gap to tax revenues);

x_{it} - independent (explanatory) variables (GDP per capita, import ratio, standard VAT rate, consumption-to-GDP ratio, intermediate consumption, unemployment rate, corruption index, value added-to-GDP ratio, shadow economics, gross public debt, and the amount of population (Tab.1).

The selection of variables for both analyses was determined by the theoretical basis of the following studies: Aizenmann & Jinjarek (2008), Ebrill et al. (2001), Agha & Haughton (1996), Bird et al. (2004), Barbone et al. (2013), CASE (2018), and Reckon (2009). In these studies, authors followed many variables which have either a direct, or an indirect impact on the volume of tax evasion. The degree of impact of the above factors varied depending on the intensity of the relationship between the variables. The determinants themselves were specific and dynamic, constantly evolving and influencing each other.

Table 1 Independent explanatory variables X_{ij}

Variable	Abb.	Unit	Reason for inclusion in the model	Relation to the tax gap (hypothesis)	Author	Source
GDP per capita	GDPpc	mil. €	wealth level of development	decrease	Reckon (2009)	Eurostat
unemployment	unemp	% of active population	economic cycle tax revenues inequality	increase	Barbone (2013)	Eurostat
import to GDP	IMP	%	economy openness carousel fraud risk	increase (if there is VAT carousel)	Aizenmann & Jinjarek (2008), Ebrill (2001)	Eurostat
VAT	VAT	%	tax burden	increase	Reckon (2009), Ebrill (2001), Agha (1996)	European Commission
Corruption Perceptions Index	CPI	index	level of corruption population trust in the public sector	decrease (the higher CPI the lower corruption)	Bird et al. (2004), Reckon (2009)	Transparency International
population	pop	mil. €	country size	increase	Barbone (2013)	Eurostat
public debt	debt	%	worse financial condition	increase	Barbone (2013)	Eurostat
shadow economy	shadow	%	significance of the shadow economy	increase	Bird et al. (2004)	IMF
added value to GDP	AV	%	the relative size of economic sectors	decrease	Reckon (2009)	Eurostat
intermediate consumption to GDP	iC	%	incorporating the corporate sector	increase	the variable we choose	Eurostat
consumption to GDP	C	%	size of potential tax base	decrease	Reckon (2009)	Eurostat

Source: own calculation based on Zidková (2014)

In the regression analysis, there were used the Pooling model (PM), Fixed effects model (FEM), and Random effects model (REM), as well as the first difference model and the difference between model. Based on our testing, we found out that statistically insignificant are difference between model and first difference model, the other models were statistically significant while the significance was determined by Hausmann test. The statistical test determined as the most appropriate model for testing the Pooling model (PM). The results of the original Pooling model in which were included all variables pointed out that the shadow economy, unemployment, and public debt were statistically insignificant. Therefore, we removed these variables from the model correction. Another variable that has also been removed from the model was the value-added-to-GDP ratio, as its presence in the model is irrelevant in terms of the presence of intermediate consumption and total GDP consumption. Finally, we also removed the GDP per capita variable as it became statistically insignificant after several adjustments to the model. The modified model is shown in Tab. 3 and it is statistically significant. Further testing of the adjusted Pooling model revealed the following model features: (1) according to Lagrange Multiplicate test, an individual effect in the model is significant, while the time effect is insignificant; (2) according to the Chow pool ability test, it is necessary to take into account the panel data structure; (3) according to Woldridge test, it is rejected the presence of autocorrelation; (4) testing the model for absolute correlation confirmed that correlation is insignificant for the whole model; (5) Maddala-Wu unit root test confirms the existence of time series stationarity; (6) according to White test, there is not confirmed heteroscedasticity in the model; (7) normal distribution was tested according to Jarque-Bera test, Shapiro-Wilk test and Kolmogorov-Smirnov test.

6 Results and discussion

Tax gaps in the EU Member States from 2004 to 2017 are shown in Tab.2. Based on our calculation, the lowest tax gap was reported in 2004 at the level of 614,000 mils. EUR. On the other hand, the highest tax gap was quantified in 2017 at the level of 946,000 mils. EUR. If we look at tax gaps in the individual countries, we can conclude that in Germany and France were tax gaps for the whole observed period higher than 100,000 mils. EUR every year (in Germany higher than 200,000 mils. EUR, from 2006 to 2015 even higher than 300,000 mils. EUR). On the other hand, the smallest tax gaps were quantified in Malta (540 mils. EUR on average for period) and Cyprus (980 mils. EUR on average). To sum up, tax gaps in the EU countries grew continually from 2004 to 2017, except from 2009 when tax gaps decreased. In the next part of the contribution, we will analyze the period of the financial crisis and its consequences on tax gaps. The highest VAT gaps were measured in Germany, France, the United Kingdom, and in Italy. The smallest VAT gaps we quantified in Malta, Cyprus, and Latvia.

In the last observed year 2017, the Czech Republic moved to the first cluster with higher tax gaps countries. Greece, on the other hand, moved to the cluster with smaller tax gaps. In France, Italy, and the United Kingdom, the total tax liabilities were risen by 28% on average, in Germany even by 79% and in the Netherlands by 61%. German tax revenues were increased only by 34%. Generally, we can say that even though tax revenues in all EU countries rose, but tax liabilities rose at a greater extent. Therefore, there was an increase in tax gaps each year.

Table 2 Tax gap in EU in period 2004-2017 (in mil. EUR)

Country/Year	2004	2005	2006	2007	2008	2009	2010
AT	9,955	10,809	11,024	11,860	12,831	12,923	13,283
BE	18,003	19,399	20,663	22,155	22,318	21,491	23,302
BG	853	991	1,257	1,319	1,733	1,328	1,310
CY	391	465	537	586	637	592	588
CZ	4,071	4,687	5,104	5,901	6,992	6,584	7,259
DE	176,709	181,286	200,171	242,316	252,871	240,435	254,188
DK	12,812	14,094	14,951	16,087	16,004	15,924	16,061
EE	340	385	489	593	580	649	651
ES	32,146	37,682	41,623	42,625	36,069	27,145	37,033
FI	7,973	8,594	9,215	9,582	9,688	9,375	9,546
FR	114,868	119,315	121,616	123,911	124,420	117,383	121,628
GR	5,046	5,366	6,338	7,140	6,994	6,604	6,801
HR	1,758	1,949	2,223	2,455	2,623	2,423	2,422
HU	4,457	4,807	4,559	5,167	5,424	5,200	5,727
IR	8,028	9,106	10,285	10,396	8,957	7,616	6,833
IT	66,523	70,252	78,031	81,291	78,748	68,412	76,738
LT	418	527	660	775	902	709	821
LU	1,257	1,568	1,669	2,015	2,110	2,123	2,379
LV	319	407	519	697	698	478	487
MT	157	182	202	215	255	237	255
NL	32,843	35,671	40,990	44,973	48,039	47,714	49,505
PL	6,500	8,804	10,900	13,452	15,492	11,612	14,686
PT	5,494	6,267	6,487	6,473	6,354	5,448	5,987
RO	1,388	2,269	2,715	3,114	3,681	2,816	3,502
SE	19,143	20,355	22,240	23,619	24,166	21,137	25,244
SI	1,012	1,111	1,250	1,353	1,495	1,359	1,398
SK	1,101	1,323	1,467	1,678	1,943	1,887	1,942
UK	80,607	83,606	90,531	90,475	77,030	61,513	77,723
Total	614,174	651,278	707,716	772,224	769,051	701,117	767,299
Country/Year	2011	2012	2013	2014	2015	2016	2017
AT	13,445	14,098	14,166	14,390	14,873	15,406	16,045
BE	24,761	25,468	25,462	25,711	25,080	25,811	26,905
BG	1,354	1,458	1,675	1,628	1,729	1,823	1,919
CY	559	551	481	472	469	501	562
CZ	8,080	8,080	8,291	8,117	8,772	9,225	10,382
DE	278,428	276,591	278,765	296,217	309,689	321,820	335,230
DK	16,087	16,569	16,230	16,763	16,911	17,162	17,647
EE	715	778	805	901	997	1,073	1,164

ES	35,599	34,586	37,705	39,570	42,938	43,724	45,687
FI	10,757	11,434	11,954	11,878	11,664	12,090	12,369
FR	125,872	128,760	127,932	131,572	134,028	135,178	142,451
GR	6,357	5,819	5,158	5,139	5,254	5,817	5,964
HR	2,323	2,448	2,505	2,564	2,706	2,857	3,057
HU	5,706	5,869	5,895	6,568	7,205	7,188	8,037
IR	6,265	6,095	6,029	6,666	7,067	8,344	8,359
IT	76,409	73,754	70,792	73,359	73,143	74,741	78,336
LT	891	873	867	901	962	981	1,065
LU	2,596	2,935	3,187	3,641	3,327	3,377	3,504
LV	571	655	691	736	793	855	908
MT	284	302	316	364	389	407	461
NL	50,144	50,892	50,980	51,286	53,300	56,472	60,584
PL	15,629	14,300	14,589	15,724	16,443	16,911	19,821
PT	6,093	5,630	5,685	5,949	6,161	6,295	6,816
RO	4,154	4,243	4,265	4,298	4,743	4,045	4,207
SE	27,374	28,585	28,518	28,174	29,934	31,874	32,828
SI	1,433	1,359	1,425	1,437	1,493	1,545	1,625
SK	2,168	1,960	2,179	2,458	2,802	2,795	3,097
UK	89,779	95,000	96,955	102,411	119,236	101,237	97,401
Total	813,834	819,094	823,500	858,896	902,108	909,553	946,432

Source: own calculation based on Eurostat (2004-2018)

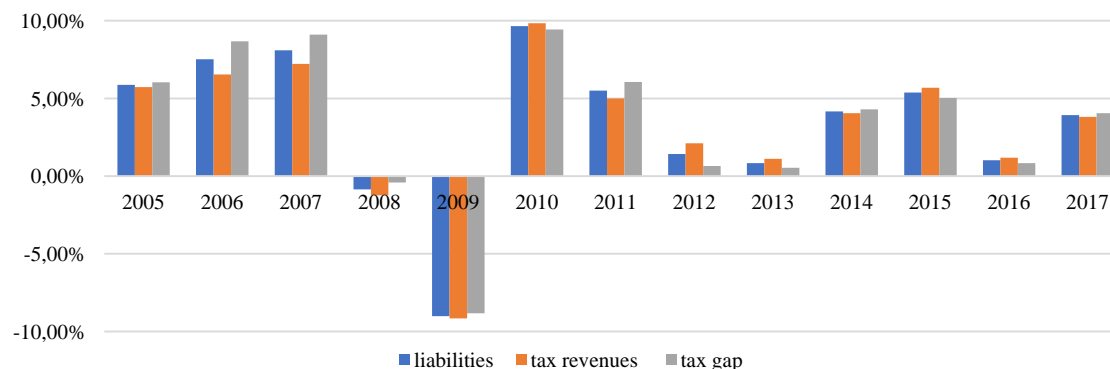
6.1 The tax gap analysis

The fact that tax gaps grew continually can be explained by an increase in the final consumption of individual component of tax liabilities. In 2009, there was reported a steep drop in tax gaps in all the Member States caused by a decrease in total tax liabilities (the most significant decrease was in intermediate consumption by 1,499,000 mils. EUR in the EU). The gross fixed capital formation has fallen by 404,000 mils. EUR in comparison to 2008. Since in the calculation the components of tax liabilities were expressed as a percentage of output exempt from VAT, then from this point of view the most significant drop was in final household consumption by 333,000 mils. EUR.

6.2 Tax revenues

In 2009, tax revenues in the EU fell by 18% in comparison to the previous year. It can be explained by the fact that state budgetary revenues significantly decreased in the financial crisis due to the impact of many indicators, such as tax revenues, corporate profits, the final consumption, or commodity prices. In this context, in all EU countries, there was an increase in the budgetary deficit, and it occurred the problem of the impossibility of financing public expenditure. The highest decrease in VAT revenues was reported in Romania by 29%, Latvia by 28%, and in Spain by 25%. However, in Luxembourg, Germany, and Austria in 2009 tax revenues did not fall.

Figure 1 Percentage of year-to-year change in tax liabilities, tax revenues and tax gap in the EU



Source: own calculation based on Eurostat (2019)

6.3 The global financial crisis in 2009

The crisis year 2009 meant for the Member States difficult period. Gross domestic product in the EU fell by 2.5% quarterly. The negative economic environment was the most affected by the Slovak economy, which fell by 11.2%. This steep economic drop caused a decrease in foreign demand. Also, the gas crisis and the production limitation played its role in this recession in Slovakia. As a result of the crisis, most countries have set a government budgetary deficit above 3% of GDP. The government consumption slightly rose, NPISH increased negligibly, however, output for final consumption of non-financial corporations dropped by 13,000 mils. EUR together with VAT effective rate. Within the Baltic States, the financial

crisis hit the worst Latvia, which had the slowest economic growth, high state's deficit at the level of 12% and enormous government expenditures. Despite the Latvian government measure which rose the standard VAT rate from 18% to 21%, tax revenues decreased rapidly. Also, there was a drop in intermediate consumption, household consumption, and GDP. Due to the crisis problems, Latvia asked the International Monetary Fund (IMF) and the EU for emergency rescue loan in the amount of 7.5 bill. EUR. To provide this financial mechanism, there was a request by the IMF to decrease deficit under 4.9% of GDP. Macroeconomic indicators in Romania are for many years under the European average level. The financial crisis, moreover, caused an increase in the VAT rate from 19% to 24% in 2010. This government measure was important for the Romanian budget, as well as tax revenues and consumption because consumption has fallen since 2009 rapidly. We have to

state that since economic growth in 2008 was at the level of 2.9%, the final consumption fell in real terms by 2.8%, and the final household consumption fell by 4.7% due to reduction in the volume of sales of retail goods and services. The actual VAT revenues in 2008 were by 30.8% in nominal terms higher than in the previous year. In real terms, the final household consumption increased by 9.2%, total consumption increased by 8%, and GDP by 7.1%. However, in 2009, there was a significant decrease in VAT revenues compared to 2008, when they dropped by 16% because of the actual drop in the final household consumption by 10.8% a drop of the total final consumption by 8.2% and GDP by 7.1%. The increase in the VAT rate in Romania had a significant impact on tax revenue, as the share of VAT revenue in GDP was constantly increasing in 2010, influenced by the purchasing power of consumers. In Spain, tax revenues began to fall sooner in 2008 when the "Great Spanish Recession" appeared and lasted until the end of 2014. The decline in tax revenues was the most affected by a decline in household consumption and intermediate consumption, while government consumption increased, as well as a decline in oil prices and deflation. From long-term view was this situation unsustainable, and so the Spanish government introduced several fiscal measurements. The main aim of this fiscal consolidation was to reduce government expenditures by 1% of GDP until 2010, and simultaneously increase government revenues at the same time. As a result of the economic crisis, the Spanish government raised the standard VAT rate from 16% to 18% in 2010, intended to increase VAT revenue by 0.2% in 2010, and subsequently by 0.3% in 2011. Public sector wages were cut by 5% on average and government investment was suspended. These measures resulted in an overall decline in government expenditures of 7.9% in 2011. However, the situation was so difficult to control that in 2012 it resulted in a sovereign debt crisis and Spain had to borrow 100 trillion. EUR from the EU funds. To conclude, in 2009 total tax liabilities decreased by 9%. During the financial crisis, the evolution of potential tax expenditure was significantly affected, causing the biggest changes in the tax gap. As tax revenues declined more strongly than tax liabilities, the tax gap in the EU countries grew throughout the period what can be explained by the constant increase in the individual components of consumption, and by the increase in the standard VAT rate in all the Member States.

6.4 Regression analysis of the tax evasion determinants

The differences in VAT evasion can increase in the economic cycle as a response to the tax rate increase. Beside it, these differences can vary within the Member States because of the national and institutional environment. This point of view considers the potential benefits of measures to reduce VAT non-compliance as a tool for increasing government revenue to improve the productivity loss resulting from behaviour mismatches. To further investigation of these assumptions, we conducted an econometric analysis where the main objective was to create a model that would reflect the significant explanatory variables X_{ij} and their impact on the dependent (response) variable, which is quantified VAT evasion.

6.5 Interpretation of the influence of tax evasion determinants

The final adjusted model which we have tested is in Tab.3, can be expressed as follows:

$$\frac{\text{tax gap}}{\text{tax revenues}} = 5.37 + 4.55 \text{ IMP} + 1.46 \text{ VAT} - 8.82 \text{ C} + 1.77 \text{ iC} - 1.44 \text{ pop} + 1.94 \text{ CPI} \quad (6)$$

From the model stated above, an increase in an import-to-GDP ratio by 1% will rise a proportion of tax gap to VAT revenues by 4.55%. If we increase the standard VAT rate by 1%, then the output will rise by 1.46%. However, if total consumption-to-GDP ratio increases by 1%, the tax gap to VAT revenues proportion will drop by 8.82%. The relation between intermediate consumption (iC) and GDP is the following: an increase in iC by 1% will raise output by 1.77%. The population

harms the tax gap because an increase in 1% will fall output by 1.14 units. With an increase in the corruption index of 1 unit, there will be an increase in the proportion of the tax gap to VAT revenues of 1.94 units. Based on our regression model, we can conclude that most variables have a positive impact on the growth of the tax gap to VAT revenues. As the results showed, throughout the EU countries, VAT evasion is the most affected by import, corruption index, intermediate consumption, and the level of VAT standard rate.

Table 3 Adjusted Pooling model

Coeff.	Est.	St. error	t-value	Sign.
Intercept	5.3723e-01	1.1960e-01	4.4919	***
X1	4.5467e-02	2.1402e-03	21.2447	***
X2	1.4621e-02	2.0628e-03	7.0879	***
X3	-8.8181e-03	9.2323e-04	-9.5514	***
X4	1.7652e-01	2.4706e-02	7.1450	***
X5	-1.1400e-09	4.4131e-10	2.5832	*
X6	1.9410e-02	3.7764e-03	5.1398	***
Adjusted R ² : 0,85651				

Note: Coeff. – Coefficient; Est. – Estimate; St. error – Standard error; Sing. – Significance. X1 – Import-to-GDP; X2 – VAT rate; X3 – Consumption-to-GDP; X4 – Intermediate consumption-to-GDP; X5 – Population; X6 – Corruption index.

Source: own calculation

7 Discussion

The previous studies pointed to the ambivalent impact of the VAT rates on the VAT gap. Based on the econometric analysis, Reckon (2009) conducted tax gap analysis in the cross-sectional estimation, which correlates the level of estimated VAT gap in each country at the level of the corresponding explanatory variables. His statistical results assume unobservable factors affecting the VAT gap and explanatory variables of interest. It is unlikely that this approach reveals the real causal determinants of VAT compliance due to omitted variables. Differences between countries may be correlated with some observed explanatory variables, such as tax rates and institutional arrangements. He also examined the links between the estimated differences in VAT compliance and the economic and social characteristics of the EU Member States. Reckon (2009), Aizenmann & Jinjarek (2008), Ebrill et al (2001) and Barbone et al. (2013), Mura (2019) found out that VAT gaps are significantly higher among countries with weaker legal institutions and a higher degree of corruption index. Institutional differences between countries also affect tax enforcement and taxpayer compliance. In our analysis, we described GDP per capita as statistically insignificant, but Reckon (2009) claimed that an increase in GDP per capita would reduce the tax gap. Also, the effect of VAT on GDP should reduce the tax gap, but in our analysis, we have excluded this variable because of the presence of variables, such as consumption-to-GDP and intermediate consumption-to-GDP. Our analysis confirmed the assumption from the abovementioned studies that total consumption-to-GDP ratio reduces the tax gap. On the contrary, with the growing corruption index, the tax gap increases. However, according to Reckon (2009), with a higher corruption index (i.e. with a lower perception of corruption in the country), the tax gap is falling. Agha & Haughton (1996) found out the negative impact of the standard VAT rate on tax gap what is consistent with the hypothesis that the higher VAT rate, the lower VAT compliance. In general, VAT non-compliance is higher in countries with higher standard VAT rates. If the VAT rate increase by 1%, the tax gap will increase by 2.7%. In our sample, however, the VAT rate increase leads to an increase of 1.46% of the tax gap. Aizenman & Jinjarak (2008) examined a VAT impact on international trade and found out that VAT is associated with a lower openness of the economy, particularly, it is true for countries with low incomes. A higher import ratio increases the tax gap, which was also confirmed by our regression analysis, even this variable is statistically significant. According to Barbone et. al. (2013), Kubasciková et.al.(2019), Papcunova & Novakova (2019) and CASE (2018), Glova et.al. (2020) with increasing unemployment, population size, and

public debt, the tax gap also rises. On the contrary, among our variables, we considered only the population, which harmed the tax gap. Thus, with an increasing population, the tax gap is falling. The up-to-datedness and investigation of VAT have recently been intensively discussed topic, both at the level of individual governments and at the level of the European institutions. The EU and the Member States lose a significant proportion of VAT revenue annually. In the context of public finance deficits, it is not an effective solution to increase revenues through an increase in VAT rates. Therefore, the European countries are trying to put in place effective measures that, without raising taxes, would ensure better tax collection.

8 Conclusion

Based on the analysis, we can conclude that the highest tax evasion during the whole observed period was in Germany, France, United Kingdom, and Italy. On the other hand, the lowest tax evasion in the EU was quantified in Malta, Cyprus, and Latvia. From time point of view, VAT evasion grew every year, except 2009 when tax evasion decreased by 18% in comparison to previous year. This drop was influenced by many indicators, such as tax revenues, corporate profits, total final consumption, or commodity prices. However, there were some EU countries (Luxembourg, Germany, and Austria) where tax revenues did not decrease in 2019. The decline in tax evasion can be explained by a decrease in the individual components of tax liabilities, where the most significant drop was recorded in intermediate consumption and gross fixed capital formation in comparison to 2008. Since these tax liabilities components were considered in our calculation as a percentage of output that was exempt from VAT, the most significant was the decrease in final household consumption by 333,000 mils. EUR caused by the financial crisis. The regression analysis confirmed that most variables have a positive impact on the growth of the VAT tax gap. Throughout the EU countries, VAT evasion is most affected by the import-to-GDP ratio, corruption index, intermediate consumption and, of course, the standard VAT rate, and so increasing value of these indicators will increase VAT tax evasion. Among the observed variables, it was confirmed the positive correlation in total consumption and population size. Thus, increasing these variables will reduce VAT evasion. Detecting and taking action to reduce tax evasion, as well as collecting tax itself is a complex process. Tax evasion cannot be prevented completely, but at least government can reduce it by applying some recommendations, limits, or ways how to prevent tax evasion.

Literature:

- Agha, A., Haughton, J.: *Designing VAT systems: Some efficiency considerations*. Review of Economics & Statistics, Vol. 78, No. 2. 1996. p. 303-308. ISSN: 0034-6535.
- Aizenman, J., Jinjark, Y.: *The collection efficiency of the Value Added Tax: Theory and international evidence*. Journal of International Trade and Economic Development, Vol. 17 No. 3. 2008. p. 391-410. ISSN: 0963-8199.
- Barbone, L., Belkinds, M., Bettendorf, L., Bird, R.M., Bonch Osmolovkiy, M., Smart, M.: *Study to quantify and analyse the VAT Gap in the EU-27 Member States*. CASE Network Reports. 2013. p. 116.
- Bird, R.M., Martinez-Vazquez, J., Torgler, B.: *Societal institutions and tax effort in developing countries*. The Challenges of Tax Reform in a Global Economy. 2006. p. 283. ISBN 978-0-387-29912-9.
- CASE: *Study to quantify and analyse the VAT gap in the EU-28 member states*. Warsaw : Center for Social and Economic Research. TAXUD/2015/CC/131. 2018.
- Claus, I.: *Is the value added tax a useful macroeconomic stabilization instrument?* Economic Modelling, Vol. 30. 2013. p. 366-374. ISSN: 0264-9993.
- Dovilé, K.V.: *Value added tax system and dynamic of rate in the period of European union crisis*. Social Transformations in Contemporary Society, Vol. 2013 No.1. 2013. ISSN 2345-0126.
- Ebrill, L.P., Keen, M., Bodin, J. P., Summers, V.P.: *The modern VAT*. International Monetary Fund. November 6, 2001. p. 242. ISBN: 978-1589060265.
- Eurostat Data Database. Available at: <<https://ec.europa.eu/eurostat/data/database>>. 2019.
- European Commission.: *Council Directive 2006/112 / EC of 28 November 2006 on the common system of VAT*. 2006.
- European Commission.: *European system of accounts - ESA 2010, Handbook*. Luxembourg. 2013. ISBN 978-92-79-31242-7.
- European Commission.: *VAT Rates Applied in the Member States of the European Union*. Situation at 1st January 2016.
- Gemmel, H.: *The Tax Gap: A Methodological Review*. Victoria University of Wellington, New Zealand, Working Paper 09/2012. 2012
- Glova, J., Werner B., Tulai, O.: *Determinant Effects of Political and Economic Factors on Country Risk: An Evidence from the EU Countries*. Montenegrin Journal of Economics Vol. 16. No. 1. 2020. p. 37-53. ISSN: 1800-5845
- Halkidi, M., Batistakis, Y.A., Vazirgiannis, M.: *On Clustering Validation Techniques*. Vol. 17 No. 2-3. Journal of Intelligent Information Systems. 2001. p. 107-145. ISSN: 0925-9902.
- Hospodárske noviny: *Krízou postihla všetkých členov EÚ. Niektorých viac, iných menej*. Available at: <<http://dennik.hn.sk/ekonomika-a-firmy/225236-kriza-postihla-vsetkych-clenov-eu-niektorich-viac-inych-menej>>. 2009.
- Hutton, M.E.: *The Revenue Administration-Gap Analysis Program: Model and Methodology for Value-Added Tax Gap Estimation*. Fiscal Affairs Department, International Monetary Fund. March 2017. ISBN: 978-147-5583-618
- Keen, M., Lockwood, B.: *The value added tax: Its causes and consequences*. Vol. 92 No. 2, Journal of Development Economics, 2010. p. 138-151. ISSN: 0304-3878.
- Kubascikova, Z., Tumpach, M., Juhaszova, Z., Turebekova, B., Saparbayeva, S.: *Contextual Non-financial Information Analysis of Annual Reports*. 16th Annual International Scientific Conference on European Financial Systems. 2019. p. 334-344. ISBN: 978-80-210-9338-6
- Louvot-Runavot, C.: *L'évaluation de l'activité dissimulée des entreprises sur la base des contrôles fiscaux et son insertion dans les comptes nationaux*. Institut National de la Statistique et des Études Économiques. Document de travail G2011/9. 2011.
- Mura, I. (2019). Entrepreneurship internationalization-case of Slovak family businesses. Ad Alta: Journal of Interdisciplinary Research, 9(1), 222-226.
- Papcunová, V., Novaková, B.: *Real Estate Tax as Part of Municipal Tax Incomes (Case Study)*. 13th International Scientific Conference on Public Economics and Administration. 2019. p. 321-330. ISBN: 978-80-248-4356-8
- Ramona, M.E., Ionut, C., Cristian, M.: *Value Added Tax in The Economic Crisis Context*. European integration-new challenges. Vol. 1 No. 1, 2011. p. 389-395.
- Reckon, LLP: *Study to quantify and analyse the VAT gap in the EU-25 Member States*. Taxation Studies 0029, Directorate General Taxation and Customs Union, European Commission. 2009.
- Rodrigues, C.: *VAT revenue estimation on an accrual basis (based on IMF methodology)*. Autoridade Tributaria e Aduaneira, Centro de Estudos Fiscais e Aduaneiros, CTF Article pgs 7-21/2015, Februaury. 2015.
- Rubin, M.: *The practicality of the top-down approach to estimating the direct tax gap*. Paper presented at New Perspectives on Tax Administration: An IRS-TPC Research Conference, Washington. Her Majesty's Revenue and Customs. 2011. p. 109-127.
- Toder, E.: *What is the tax gap*. Tax Notes. Vol. 117 No 4. 2007. p. 367-378.
- Zidková, H.: *Determinants of VAT gap in EU*. Prague Economic Papers. Vol 23 No 4. 2014. p. 514-530. ISSN 1210-0455
- Valentinyi, A.: *The Hungarian crisis*. VoxEU, Centre for Economic Policy Research, London. Retrieved Jun 10, 2019, from <http://voxeu.org/article/hungarian-crisis>. 2012.

Primary Paper Section: A

Secondary Paper Section: AH

THE PECULIARITIES OF THE FORMATION OF THE MUSICAL-PERFORMING EXPERIENCE OF THE FUTURE TEACHER OF THE MUSICAL ART IN THE EDUCATIONAL INSTITUTIONS OF UKRAINE

^aMARYNA BILETSKA, ^bTATIANA PIDVARKO,
^cJAROSLAVA SOPINA, ^dLINA KOTOVA

*Bogdan Khmelnytsky Melitopol State Pedagogical University, 20
Hetmanska Str, Melitopol, Zaporizhzhia region, Ukraine 72312
email:^aviolinchik@ukr.net, ^brifusya_@ukr.net, ^csopina_jaroslava
@ukr.net, ^dkotova.lina70@ukr.net*

Abstract: The main conditions, the forms and the means of the formation of the musical-performing experience of the future teacher of the musical art are analyzed and highlighted in the article; the psychological factors from which depend the effectiveness of the formation of the musical-performing experience of the students, the possibility to influence and to control their own emotional sphere, the self-regulation of the stage condition during the performance, the providing of the implementation of the musical work at a high artistic and the technical level are determined and are analyzed.

Keywords: teacher of musical art, creative independence, concert-performing practice, concert performance, musical conversation, interpretation of the musical work.

1 Introduction

The peculiarities of the musical-performing activity of the teacher of the musical art consist in its pedagogical orientation, which foreseen the orientation on the children's audiences, the desire to capture children with the music on the base of their own making music, the involvement of the pupils to the common in the performing activity, the awakening their creativity, the imagination, the associative thinking, etc (Abdullin, 2004). Therefore, the important component of the educational-professional program of the preparation for the students with a Bachelor's degree and the educational-scientific program with a Master's degree in the institutions of the higher education in the specialty of "Musical art" is the practical performing preparation of the students.

During all period of the study, the students acquire the special and the general-aesthetic knowledge, while they form the professional abilities and the skills, the creative methodical thinking is developed, the artistic and the musical-performing experience are acquired. One of the main conditions of the increase of the quality of the preparation of the future professionals is the purposeful formation of the musical-performing experience of the students in the educational process. That is why the problem of the musical-performing preparation and the acquirement of the musical-performing experience of the students in the institutions of the higher education is still actual. Also, the musical-performing experience has the great meaning in the professional preparation of the students also because it is a necessary factor of the becoming of the personality of the future teacher of the musical art. Thus, the formation of the musical-performing experience evidences about the readiness of the specialist to the musical-pedagogical work and it reflects the process of the psychological readiness of the student to the performing activities, own performing interpretation, the analytical activities, the cognition of the content of the musical work (Labintseva, 2016).

2 Literature Review

The musical performing activity is presented in the scientific literature in the context of the problems of the interpretation of the musical works and the methodical providing of this process (Barenboim, 1969; Medushevskiy, 1976; Oleksuk, 2009); in the different aspects of the improving of the performing level of the future teacher of the musical art (Zgurs'ka, 2001; Krytskyi, 2009; Shcholokova, 1996); the question of the formation of the experience are considered in the psychological-pedagogical works (Gabai, 1995; Graf, I. Iliasova & Liaudis, 1981; Talyzina & Gabai 1977; El'konin 2001). The psychological peculiarities of the musical-performing activity are considered by L. Bochkaryov (2008), E. Yorkina (1996), L. Kotova (2016),

Y. Tsagarelli (2008); the problems of the musical-performing experience are presented in the works of L. Ginzburg (1998), J. . Milshteyn (1983), O. Khlebnikova (2001) and others.

3 Results and Discussion

Determining the main conditions, the forms and the means of the formation of the musical-performing experience of the students, the essence of the concepts "experience", the "performing experience", the "musical-performing experience" should be considered. The systematization and the analysis of the scientific literature give the opportunity to note that the category of the "experience" plays the important role at the present stage of the development of the musical-pedagogical education. The retrospective approaches show that the category of the "experience" has changed depending on the becoming and the achievements of the philosophical thought. In the ancient Greece, the "experience" has associated with the intellect (Aristotle, Plato, etc.), the ancient Roman thinkers - with the cognition (Lucretius, Seneca), the ancient Chinese philosophers have believed that the experience is the meaning of the human existence and has an axiological basis (Lao Tzu, Han Fei, Yang Zhu and others). The philosophical views of the Middle Ages are characterized with the recognition of the leading role of the experience in the cognition, and also the consideration of the active activity of the human as the basis of the formation of the experience (Augustine, F. Aquinas, etc.). The scientific inventions of the Western European thinkers of the New Age have made the interpretation of the experience as the mental, the logical phenomenon (Shevchenko, 2019).

The "Performing experience" is a totality of the knowledge and the skills what directly affect the productivity of the process of the professional activity. The knowledge is a special form of the spiritual mastering of the results of the cognition of the process of the reflection of the reality of the performer, by means of the deep awareness of the author's concept, and the skills are the actions which components in the process of the formation of the performing interpretation become the automatic on the base of the application of the knowledge about the appropriate way of the actions due to the purposeful exercises (Bilous, 2005).

According to M. Anisimov, the "musical-performing experience" is a totality of the performing abilities, the skills and the techniques received in the process of the playing practice, it is a form of the cognitive, the practical, the spiritual-sensual and the emotional activity of the musician-performer "(Anisimov, 2014). Thus, the formation of the personal experience is connected with the development of his individual qualities, the acquisition of the knowledge and the improvement of the abilities and the skills which can be acquired by a person only in the process of the activity and the mastering of him the social experience.

The essence of the musical-performing activity of the students is to creatively "read" the musical work, to reveal in his performance the emotional-semantic content, which was laid in it by the author. The nature of the music, its emotional content must be reproduced as accurately and convincingly as possible, it is necessary to create the emotionally vivid musical image which will be remembered by the listener. At the same time, the performance becomes creative only if it brings its own, little, but the individual, the "self-found" experience of the understanding and the experiencing of the music, which gives the interpretation the special uniqueness and the persuasiveness (Nadyrova, 2014). Thus, the process of the formation of the performing experience cannot be divided from the formation and the development of the complex of the professional-personal qualities which underlie the stage behavior.

We have been analyzed and identified the main conditions, the forms and the means of the formation of the musical-performing experience of the future teacher of the musical art. Thus, according to the famous German educator K. Martinsen, the creative independence is the basis of the musician's performing experience (Martinsen, 1977). The starting point of the definition of the essence of the "creative independence" is the principle of the integral development of the personality. The psychologists perceive in it the generalized quality of the personality, which is manifested in the initiative, the criticality, the self-appraisal, the feeling of the personal responsibility for their activities and they have associated it with the active work of the intellect, the feeling and the will.

The creative independence, as the leading condition of the formation of the musical-performing experience of the future teacher of the musical art combines the following abilities and the personal qualities:

- the ability to find the problem, to concretize the purpose of the activity, the pedagogical tasks, to find non-traditional means of their solution;
- the ability to plan and to design the creative pedagogical activity;
- the ability to flexibly use existing knowledge in the new and the non-standard situations;
- the ability to think independently, critically, to generate the new ideas;
- the ability to reflect on own musical-performing activity;
- the desire and the ability to the self-development, the performing of the self-perfection, the enrichment of own performing experience (Shylkunova, 2015).

O. Khliebnikova on the basis of the activity approach has defined and has scientifically grounded the structure of the experience of the musical-performing activity, which has included such components as:

- the level of the music-theoretical and the performing analysis of the musical work;
- the level of the mastering of the technology of the performing of the musical work;
- the psychological readiness for the performing of the musical work;
- the level of the mastering of the ability to analyze, to control and to adjust the performance of the musical work;
- the quality of the reproduction of the performing interpretation of the musical work (Khliebnikova, 2001).

The interpretation of the musical work develops maximally the creative independence of the students, it accumulates the past aesthetic experience, it establishes the necessary associative connections. Therefore, the interpretation is the activity that seems to put the student in the conditions that demand from him the development of the independence on their own. Working on the creation their own performing interpretation, the student must cover a wide range of the questions which are connected with the solution of the following tasks:

- the cognitive, which are aimed at the search, the selection and the accumulation of the necessary musical information;
- the artistic, in which the creative search is provided with the aim of the creation of their own performing interpretation;
- the verbal, which are connected with the formation of the abilities of the expressiveness of the language, the accurate verbal transmission of their performing project.

Also, the formation of the musical-performing experience of the students is carried out due to the acquaintance with the best examples of the musical-performing interpretation, and also due to the orientation passing of the works by the students which are belonged to the different styles and the genres, and due to the "installation" of the mandatory achievement of the high level of the musical-performing preparation by the students.

The musical-performing experience is accumulated in the process of the artistic-instrumental (vocal) interpretation. The important means in the preparation of the students and the formation of the musical-performing experience is the concert-performing practice, the main purposes are:

- the creative self-realization of the student-musician, the development of his creative activity;
- the formation of the variety endurance, the artistry, the acquisition by the students of the skills of the performances in the concerts before the audience of the different level of the preparation;
- the formation and the foxing of the performing skills, the creation of the expressive musical interpretation of the concert repertoire;
- the accumulation of the theoretical and the practical knowledge and the skills;
- the improvement of the qualities of the self-appraisal of the performance, the education of the need for the further work on the increase of the performing skills;
- the assistance of the expansion of the repertoire, the ability to coordinate the time of the preparation of the performance with the term of the concert performance;
- the formation of the stable orientation on the participation in the concert-educational activity in the future;
- the formation of the understanding of the role of the musical art in the life of the modern society.

The performing practice of the students is carried out directly in the process of the teaching and has such traditional forms as the credit-examining and the concert, and also the performing practice is possible during the stay of the students in the pedagogical practice in the institution of the general secondary education. The intensification of the performing practice will be promoted by the use of the different forms of the musical-performing activity, namely: the concerts-lectures, the academic concerts (thematic, solo), the preparation of the musical (illustrated) conversations for the pupils, the different competitions, the festivals, the professional Olympiads. Consider some of these forms of the activity.

The music competition and the festival are the means of the expansion and the enrichment of the performing experience of the future teacher of the musical art, his professional growth. Also, the performing competitions and the festivals implement the complex program, which includes the wide range of the music-educational, the artistic, the pedagogical and the psychological problems. One of the forms of the concert-educational activity in Bogdan Khmel'nitsky Melitopol State Pedagogical University, at the Department of the instrumental performance and the musical pop art is the conduction of the International Festival of Pop Vocal Art "Honey Land". The purpose of the festival is the popularization of the best examples of the pop music culture; the manifestation and the support of the young talents, the disclosure of their creative individuality; the exchange of the experience of the professional education of the pop vocalists. Among the best performers are determined the winners who take part in the gala concert. Such festival-competition form of the creative activity of the students contributes not only to their spiritual-moral education, the integral development of their personality, but it also gives the opportunity to involve in the ethical and the aesthetic values of the national and the world music culture, it gives the opportunity to go on stage and to demonstrate their performing abilities, to disclose their originality and at the same time to acquire the necessary performing experience.

Today, such form of the participation in the competitions and the festivals as the extramural-remote has become widespread. At the request of the organizers, the video of the participant's performance is sent in such competitions. The difference between the full-time and the part-time participation is understandable, because the "live" performance on the stage allows you to play the music once, and the part-time form of the participation provides that contestants have the opportunity among a lot of variants of the record of the performance of the

musical work to choose the best and send this record. But this form (remote) of the musical activity has its positive aspects, during such attempts of the records the play of the work the student is repeatedly in the condition of the concert excitement, which in turn contributes to the formation of the student's stage endurance.

Considering the "Musical Conversation" as a form of the musical-performing (educational) activity of the student, we note that in addition to the oratory, which must be mastered by the student, he must be able to illustrate his story with the musical excerpt. Therefore, the individual problem in the preparation of the student for this form of the activity, the musical illustrations are staged, their selection and the performance. The following problems in the performance are especially singled out: the imprecise interpretation and the memorization of the text; the departure from the defined or the accepted temp; the vague, the uninitiated, the fearful performance, which does not coincide with the verbal-figurative characteristics which is given in the analysis of the music. For the bright and the masterful performance of the excerpts, it is important that the musical material of the conversation has been carefully selected and composed, because the keeping of the attention and the interest of the pupils will promote to the successful invention of the musical fragments which are the most appropriate for the emotional and the figurative content to their oral characteristics (Melyuk, 2009).

One of the criteria of the formed of the musical-performing experience of the student is the level of the general awareness of the musical works which have been performed and the history of their creation, and also the motivation of the choice of the study and the performance of these works. Therefore, among the main conditions of the formation of the musical-performing experience is the education of the positive motivation to the musical-performing activity. The address to the emotional side of the musical-performing is a way in the development of the interest to the musical art, so it is important, we emphasize this, to expand the sphere of the performing activity of the students at various measures which are organized and are held in the school and also outside it. Only due to the motivation, the obstacles of the performing work during the study of the musical works are overcome. The steady positive motivation impels the student to work out the play in certain details of the form, the virtuoso difficulties and to overcome the mental, the psychological and the physical exhaustion. The motivation plays the primary role for the overcoming of the obstacles in the creativity, because without the appropriate professional techniques and the skills, the performer cannot embody the particular artistic image at the appropriate level, to attract the attention, to arouse the interest and the admiration in the public (Klopynskaya, 2011).

To the main pedagogical conditions of the formation of the stable positive motivation of the musical-performing, we include:

- the installation on the favorable conditions for the work on the musical repertoire;
- the orientation of the educational process on the concert-performing activities;
- the creation of the individually conditioned means of the solution of the technical and the creative tasks put in front of the students;
- the installation of the personal contacts of the teacher with the student, which is based on the modeling of the positive motivations of the teaching.

It is necessary to take into account the psychological factors of the formation of the experience of the musical-performing activity in the process of the performing preparation of the students, as it will contribute to the improvement of the pedagogical process, and also the increase of the level of the performing preparation.

In the process of the rehearsal playing of the musical works, the day before the performances, it is necessary to prepare for the

long-term impact of the possible stressors and thus to avoid their negative impact on the success of the interpretation and the performance of the musical works. The acquisition of the stage endurance provides the coordination of the reproduction of the performing activity, even with a long-term negative impact of the stressors on the process of the stage activity of the musicians-performers.

The adaptations of the musicians-performers to the conditions of the stage activity are characterized with the two-vector direction. The first vector is characterized by the active influence of the interpreters on the mastering of the external environment and its modification in accordance with the personal needs, and the second is characterized with the correction of own social setting and the stereotypes of the stage behavior. The adaptation is carried out due to the self-regulation of the psychophysiological sphere, based on the positive previous performing experience taking into account the actions of all stressors which are acted as the obstacles in this situation, and on the emotions which are created with the conditions of the stage activity and consciously modeled for the musical art. The scientists L. Kotova, D. Yunyk emphasize the need of the formation in the instrumentalists during the rehearsal playing of the musical works the day before of the performances of such cognitive abilities as:

- the support of the required level of the activity of the performing apparatus, the regardless of the strength and the duration of the action of the stressors;
- the giving of the emotional-figurative content to the musical idea in the process of the reproducing of the material;
- the strengthening of the dynamism of the transfer of the information to the listeners by means of the corresponding the emotionally-expressive reaction of the organism (Yunyk and Kotova, 2016).

As big the performing experience, as more often the student will take part in the various competitions, the festivals, the concerts, as less often he will suffer from the diseases of the asthenic forms of the stage excitement. But the experience should not be confused with the habit, because the experience stimulates the inspiration, and the habit kills it. As wide the life and the creative outlook of the student, as much professional knowledge he has, as bright and deep he is able to artistically interpret the musical art, as it is easy to him to direct his excitement in the direction of the creative tasks. The successful musical-performing activity of the future teacher of the musical art is possible only if the intellectual, the emotional and the motor aspects of his personality "work" in harmony. Neither sides should suppress the others.

The confidence that the work has been studied reliably, which is saved from many negative forms of the concert excitement, but you need to have considerable experience to learn to quickly and firmly memorize some musical text. All mental processes are influenced on the stage state of the student by that occur at the time of the implementation of the musical work. The most important are the performing attention, the will, the hearing representations, the optimal for the creativity level of the emotional excitation, the flexibility of the psychological adaptation, the artistic interpretation of the work. Most psychologists consider the will and the attention as the special abilities of the personality, which are the necessary condition for the successful implementation of some activity. As other human capabilities, the attention and the will is the inclinations from the birth that can be developed and improved in the process of the teaching and the education. The performing activity has been referred to the will acts. The performing will allow the student to get rid of the impulsivity during the performance, to achieve the organic unity of the emotionality and the rationality in the creativity. And the arbitrary attention, which has arisen as the result of the willpower, and the involuntary attention, which has formed as the result of the interest, reduces the possibility of the appearance of the negative forms of the concert-performing excitement (Balanchyvadze, 1998).

We offer one of the algorithms of the formation of the musical-performing experience in the students as:

→ the conducting of the necessary psychological preparation for the public performance aimed at the overcoming of the pop excitement, the uncertainty, the saving of the sensuality and the freshness of the emotional reaction to the expressiveness of the "live sounding" before the performance, specifically turning on the "spiritual and physical condition that creates the best ground for the artistic inspiration" (K. Stanislavsky) → the performance of the musical work → self-appraisal of own public performance from the position of the personal ideals, the tasks of the aesthetic education, the detection of the disadvantage of the performance and the installation of their reason → the search of the best ways for the correction of the revealed disadvantages.

Thus, it can be affirmed that the formation of the musical-performing experience is one of the main tasks of the professional preparation of the future teacher of the musical art, because the active participation of the students in the artistic-creative activities, the concert public performances play the special role in the preparation of the future specialist of the art discipline, which are filled up with the new content of all performing process.

It is impossible to consider all the peculiarities of the formation of the musical-performing experience, and also the psychological aspects within the article, but the illumination of some aspects will promote the further improvement of the method of the formation of the musical-performing experience of the future teacher of the musical art.

4 Conclusions and prospects for further studying

On the base of the above-mentioned material, we can claim that participation in the music competitions, the festivals, the artistic-creative projects gives students the opportunity to manifest themselves and at the same time to stimulates their personal-professional development. But for the formation of the musical-performing experience, the participation of the students in such measures should be systematic, it will give the opportunity to reduce gradually the unnecessary excitement which occurs during the performance, the student will be less distracted by the unnecessary feelings, they will recede into the background. It will give the opportunity to focus on the implementation of the artistic-figurative content of the musical works.

We define the musical-performing experience of the future teacher of the musical art as the totality of the musical-theoretical knowledge and the performing skills that affect directly the productivity of the process of the professional activity; the ability to control the emotions (performing reliability) in the process of the performing of the work; the ability to analyze independently, to control and to adjust their performance.

Also we see the peculiarities of the formation of the musical-performing experience of the future teacher of the musical art in the required development of the creative independence of the students, namely the independent choice by the student of the optimum way of the reproduction of the performing interpretation. After all, the becoming of the creative independence of the students as one of the most important creative quality of the personality is the significant step towards the formation of their musical-performing experience.

The required condition is also the formation of the abilities of the artistic interpretation, because the mastering of the technology of the performance and the report of the performing interpretation to the listener is contributed to the accumulation of the musical-performing experience by the students. It is also important that the future teacher of the musical art will be sure and will be convinced and he will know and realize that the absence of the musical-performing practice, the artistic-interpretive experience in various types of the musical-performing activities will negatively affect the levels of the

mastering of the musical-performing competency, which is a key in the structure of the professional competence of the future teacher of the musical art.

So, the process of the formation of the musical-performing experience of the students foresees the use of the appropriate methods, such as:

- the method of the listening to the record of the musical work that will be performed during the concert performance which is performed by the outstanding musicians-performers, the teacher, his own performance. This method is aimed at the formation in the students the skills and the abilities of the analysis of the peculiarities of the creation of the performing interpretation. The comparative analysis of the record of the performing with the musical text of the work will allow students to deepen the study of the peculiarities of the use of the means of the artistic expression, the technology of the performance of the work, to identify the degree of the performing transformations of the copyright notion, which are performed with the performing manners of the different musicians-interpreters of the past and the present;
- method of the reflection of own performing experience. This method helps the development of all components of the performing activity of the future teacher of the musical art, especially motivational. The reflection of one's own performing experience, as the part of the professional reflection of the teacher-musician, allows you to analyze the specific stage situations which are related to either the successful moments of the stage performances or the difficulties which are arisen in the process of the performance. In such introspection, the student critically evaluates his own performing actions in comparison with his own performing experience, and also the art and the performance thesaurus as for the certain traditions of the musical-performing interpretations and the concepts which are the basis of the performing and the pedagogical culture and the worldview which are acquired in the process of the music-pedagogical training;
- method of self-regulation of the creative pop excitement. This method is aimed at the development of mainly the motivational component of the performing activity and it is in search for the ways of the achievement of the optimal concert status. It allows to choose from the list of the techniques that prevent the negative manifestation of the pop excitement which is most suitable for each student. The "negative" emotions play even more important role for the student-performer than the "positive" ones. It is no coincidence that the mechanism of the "negative" emotions functions in the child from the first days of the birth, and the "positive" is much later.

As it is known, there are four types of temperament, which are most clearly reflected in the form of the reactions and the behavior of the students in the process of the musical-performing activity:

- The emotional dominances over the rational in sanguine-performers, they work unevenly such as before the performance it is much, with enthusiasm, after the performance it is on the contrary. They adapt well to unusual conditions of the work; they worry the stage fails relatively easily.
- It is difficult for choleric-performers to achieve the unity of the emotional and the rational during the study of the works. There is a willed beginning in the performing interpretation, their performance is characterized by the high artistry, the expressiveness, and also they can accelerate the tempo, shorten the pauses during the performance, they worry hard the stage fails.
- Phlegmatic-performers have a relatively poor scale of the dynamic shades, they are not often artistic enough in the performance, sometimes they slow down the tempo, they do not show the initiative in the organization of their performances. The rely on previously acquired performing

skills, they work methodically, calmly, less than others are affected by the negative forms of the pop excitement.

- Melancholic-performers carefully work out the details of the performing interpretation, but they often lack the scale of the thinking, the artistic freedom, the creative courage. They are slowly adapting to the unusual conditions of the work, especially they are tormented from the negative forms of the stage excitement, they are tormented the stage fails very painfully.

Therefore, choosing certain methods of the psychological preparation for the concert performance, it is necessary to take into account the individual peculiarities of the student's psychics; the success is achieved only if the teacher knows and takes into account these peculiarities which form the psychological and the stage state of the future teacher of the musical art.

Literature:

1. Abdullin, E.B., & Nikolaieva Ye.V. *Theory of musical education: a textbook for students of high pedagogical institutions*. Moscow, 2004. 336 p.
2. Anisimov, M.V. *Representativeness of the performing experience of domestic musicians-confessor*, 2014. Available from: <https://cyberleninka.ru/article/n/reprezentativnost-ispolnitejskogo-opyta-otechestvennyh-muzykantov-duhovikov/viewer>.
3. Balanchyvadze, L.V.. *Individual-psychological differences in musical-performing activity*. Questions of psychology, 1998, 2. 151 p. Available from: http://voppsy.ru/journals_all/issues/1998/982/982151.htm
4. Barenboim, L.A. *Music pedagogy and performance*. Leningrad. Music, 1974. 337 p.
5. Bochkaryov, L.L. *Psychology of musical activity*. Moscow: "Classic-XXI", 2008. 352 p.
6. El'konin, D.B. *Psychology of development of human*. Moscow, Aspect Press, 2001. 460 p.
7. Gabay, T.V. *Pedagogical psychology: Textbook*. Moscow: Prosveshchenie, 1995. 375 p.
8. Graf, G.V, Il'yasov, I.I., Lyaudis, V.Ya. *Basics of self-organization of educational activities and independent work of students*. Moscow: Publishing house of Moscow university, 1981. 245 p.
9. Klopynskaya, L.M. *Formation of motivation of performing activity of pupils of children's musical school in a piano class*. Scientific journal of the National Pedagogical University named after M.P. Drahomanov. Series 14: Theory and methods of art education: Coll. of scientific works. Kiev, 2011, 11 (16). pp.244-248. Available from: <http://enpuir.npu.edu.ua/bitstream/123456789/22202/1/Klopynskaya%27ka.pdf>
10. Labintseva, L.P. *Experience of musical-performing activity of the future teacher of musical art*. Scientific journal of the National Pedagogical University named after M.P. Drahomanov. Series 14: Theory and methods of art education. Kiev, 20 (25). 2016, pp. 50-54. Available from: <http://enpuir.npu.edu.ua/bitstream/123456789/21054/1/Labintseva%20L.%20P..pdf>
11. Martinsen, K.A. *Method of individual teaching of piano playing*. Moscow: Music, 1977. 130 p.
12. Medushevskiy, V.O. *About the appropriateness and means of artistic influence of music*. Moscow: Music, 1976. 254 p.
13. Melnyk, O.P. *Formation of experience of music-educational activity of future teachers of the music as a pedagogical problem*. Scientific journal of the National Pedagogical University named after M.P. Drahomanov. Series 14. Theory and methods of art education: Coll. of scientific works. Kiev: NPU, 2009, 8 (13). pp.108-113. Available from: http://elibrary.kubg.edu.ua/id/eprint/2848/13/O_MELNIK_NCHNPUMPD_8_I_S_UKKUGB.pdf
14. Milshcheyn, Ya.I. *Questions of the theory and the history of performance*. Collected articles. Moscow: Soviet composer, 1983. 266 p.
15. Nadyrova, D.S. *Work on musical performance in the piano class: a textbook*, Kazan: IDPO, 53. 2014. Available from: http://dspace.kpfu.ru/xmlui/bitstream/handle/net/111010/Rabota_nad_proizvedeniem_Posobie__s_notnymi_fragmentami_.pdf?squence=1
16. Oleksuk, O.M. *Value-semantic interpretation as a creative self-realization of a musician-performer*. Scientific Bulletin of the National Academy of Music of Ukraine named by P.I. Chaykovskiy. 82. Performing musicology, 2009. pp. 295–302.
17. Kotova, L. *The influence of the emotiogenic conditions on the hope of the performance of the music compositions by the future teachers*. Youth and market, 2016, 5 (136). pp. 108-112.
18. Krytskyi, V. *Musical-performing interpretation: pedagogical problems of musical-performing preparation*. Monograph. Nizhyn. NSU named after M. Gogol, 2009. 258 p.
19. Khlebnikova, O.V. *Formation of experience of musical-performing activity at students of high schools of culture: extended abstract of candidate's thesis: 13.00.02*. Kyiv, 2001. 22 p. Available from: <http://enpuir.npu.edu.ua/bitstream/123456789/15500/1/Khlebnikova.pdf>
20. Shevchenko, O. *Methods of forming of vocal-performing experience of future teachers of music*. *Pedagogical sciences: theory, history, innovative technologies*. Sumy, 2019, 5 (89). pp. 206-216 doi 10.24139/2312-5993/2019.05/206-216
21. Shylkunova, Z.I. *Creative independence as a component of a teacher's professional competence*. *Collection of scientific works "Pedagogy and Psychology"*. Kharkiv, 2015, 47. 188 p.
22. Sheholokova, O.P. *Basics of professional artistic-aesthetic preparation of future teachers*. Kiev, 1996. 172 p.
23. Talyzina, N.F. & Gabay T.V. *Ways and possibilities of automation of educational process*. *New in life, science, technology. Ser. Pedagogy and psychology*, 1977, 11. pp. 18-25.
24. Tsagarelli, Yu. *Psychology of musical-performing activities*. St.Peterburg, Composer, 2008. 367 p.
25. Yynyk, T.I. Kotova, L.N. *Preparation of future musicians-performers for stage activity*. *Scientific journal of the National Pedagogical University named after M.P. Drahomanov*. Series 16: Creative personality of the teacher: problems of theory and practice: Coll. of scientific works. Kyiv, 2016, 26 (36), pp. 128-132. Available from: <http://enpuir.npu.edu.ua/bitstream/123456789/25749/1/Yynyk.pdf>
26. Yorkina, Ye. *Psychological-pedagogical conditions of the formation of individual style of performing activity of the musician-instrumentalist: extended abstract of candidate's thesis of pedagogical Science: 13.00.02 - methods of teaching of music and methods of music education*. Kyiv state Institution of Culture. Kiev, KDIK, 1996. 22 p.
27. Zgurs'ka, N.M. *Formation of musical-performing culture of the future teacher: extended abstract of candidate's thesis of pedagogical Science: 13.00.02*. National Pedagogical University named by M.P. Dragomanov, Kiev, 2001. 16 p.

Primary Paper Section: A

Secondary Paper Section: AM

PREPARATION OF SOLDIERS FOR A SECOND CAREER: EVALUATION OF APPROACH OF THE CZECH REPUBLIC

^aKRISTÝNA BINKOVÁ, ^bKATEŘINA POCHOBRADSKÁ,
^cDALIA PRAKAPIENĚ, ^dŽIVILĚ TUNČIKIENĚ

^{a,b}University of Defence, Kounicova 65, 662 10 Brno, Czech Republic, ^cThe General Jonas Žemaitis Military Academy of Lithuania, Šilo Str. 5A, Vilnius LT-10332, Lithuania, ^dVilnius Gediminas Technical University, Sauletekio av. 11, Vilnius LT-10223

email: ^akristyna.binkova@unob.cz, ^bkaterina.pochobradska@unob.cz, ^cdalia.prakapiene@lka.lt, ^dzivile.tuncikiene@vgtu.lt

Abstract: Current employee career concepts are characterized by an unstructured process and variability, not only in the case of job positions or employers but in some cases also professions in which individuals are forced by the job nature to leave careers early. A typical example is a military profession, which is not lifelong. In most cases, soldiers leaving the army do not reach the statutory retirement age and seek to integrate into the labor market by starting a second career in a new, civilian job. However, the actual situation of adaptation to civilian conditions is often difficult. Therefore, there is a need for the involvement of ministry of defence and embedding supportive procedures in the relevant legislation and strategy documents to ensure a system approach for soldiers whose contract was not prolonged. The aim of the article is to evaluate current approaches to helping soldiers of the Czech Armed Forces in their career transition. In order to meet the goal, semi-structured interviews were conducted with 20 experts from the Ministry of Defense of the Czech Republic and other institutions dealing with the help to former soldiers and qualitative questionnaire was carried out with 313 former soldiers of the Czech Armed Forces. The obtained data were further processed and analyzed using the SWOT method. The possible implementation measures based on the implementation of the strategy, obtained at the output of the SWOT analysis, were suggested.

Keywords: soldiers, second career, SWOT analysis, Ministry of Defence, Czech Republic.

1 Introduction

The individuals' careers are not predictable and straightforward, but rather periodic, consisting of so-called career cycles. The lifelong career model is now over in most developed countries. At present, it is typical that many individuals' careers consist of multiple positions and are characterized by frequent changes and high mobility. This is characterized by shifts in which individuals do not only move to higher or lower positions but change their jobs, employers or move to other professional areas in which they start their second career.

The term second career can be defined as the next stage of career or employment in a new profession as a result of the voluntary or necessary termination of a previous career. Work security becomes not only a matter of whether people are employed but above all, whether they are employable. Therefore, in addition to the efforts of each individual, the organization's support plays a key role in successful managing the transition to a second career. Career management in organizations does not apply only to current employees, but also to employees leaving the organization, needing help to find a new career path [1], [2]. Therefore, there have been changes in the area of career management in workplace over the past decades. In the context of staff reduction, these are specifically outplacement services that serve to place employees outside the organization. It is the organization that can help its outgoing employees to provide decent conditions for the transition to a new job and thus prevent unwanted phenomena associated with the loss of employment.

During provision of outplacement services, it is important to be aware of the frequent characteristics of workers who performed their profession for several years but who are no longer able to do so. These include more difficult adaptation to change, ignorance of the labor market and job opportunities, lack of self-confidence and lack of ability to present their qualities. Adapting to the conditions of a dynamic civilian labor market is even more difficult for professional soldiers who are leaving the strict and hierarchical military environment after a few years.

A professional soldier is a citizen who performs active military service as a job. The service relationship of a professional soldier

shall expire upon the period for which it was agreed, or for other reasons stipulated by law. In most cases, soldiers leaving the army do not reach the statutory retirement age. They belong to a relatively young population, most often around the age of 40, who are at the end of a military career but with the potential to work for the next 15-30 years. As soldiers still want to maintain a certain standard of living after their service ceases, they try to integrate into the labor market and achieve a second career in a new, civilian job [3]. However, experience shows that after leaving the army, they have difficulty integrating into the civilian labor market, and it can take them disproportionately long time to find a new job [4].

2 Theoretical background

The authors who focus on the consequences of complications in the transition of professional soldiers to the civilian sector point to the following negative, socio-pathological phenomena: family disruption and higher divorce rates [5], higher suicide risk [4], homelessness [7], occurrence of depression [8] and substance abuse [9].

Although soldiers usually know the date of termination of their service [10], most of them do not prepare for this period or focus on not very beneficial educational activities [11]. However, many authors attach special importance to the preparation for their second career. According to a study of E. Vigoda-Gadota, Y. Baruch and S. Grimland [12], starting training for a second career before starting the process of integrating a professional soldier into the labor market is crucial. Preparing for a second career will enable soldiers to understand the reality of a second career better, streamline their expectations from civilian employers, and overcome difficulties in adapting to new jobs. According to P. E. Spiegel and K. S. Schultz [13], effective second career planning is a key factor in successfully managing a new job and should be given particular attention. R. L. Fuller and D. L. Redfering [14] mention that planning, during active service, greatly influences the process of adapting to labor market requirements. Those who adapted well were those who planned the transition well. According to J. S. McNeil, P. J. Lecca and R. Wright [15], it is important to start planning at least a year before leaving the service. Studies show that planning and consistent preparation for the second career period is the only factor that has proven to facilitate a period of a career change. The individual responsibility and activity of soldiers are essential, but the assistance of the state and individual organizations is necessary and increasingly important nowadays [10].

Within developed democratic countries, we would find different approaches to the outplacement of professional soldiers. Somewhere this issue is not addressed at all, but it is most likely based on a different soldier's career e.g. Austria, where Non-Commissioned Officers sign a 5-10-year contract. However, if they want to remain in the armed forces, and if they are legally competent, they can become Warrant, Junior or Senior Officers, and start their military career as a lifelong career, that is, up to retirement age of 65. Most soldiers do so, and only a very small number of them leave the army sooner (less than 100 a year). For this reason, Austria does not need to develop special programs for the transition of military personnel to civilian employment after leaving the army. To a certain extent, Hungary is a similar case. Soldiers are called into service for a minimum of 3 years, which can be extended to a maximum of 20 years. However, soldiers of the rank of Staff Sergeant and higher, who are planning a long military career and who meet the qualification requirements and prerequisites, may apply for the status of a professional soldier. They can then serve for an indefinite period, but up to the age of 60, which is the upper age limit for the Hungarian Armed Forces. The average annual retirement from the military is approximately 800 professional soldiers.

Sophisticated model could be found, for example, in France. As France wants to keep the armed forces young (average age of soldiers is 32 years), and the average annual number of terminated military contracts climbs up to 20 000, it pays considerable attention to preparing its professional soldiers for a second career. Since 2009, the Defense Mobility Agency, known as *Défense Mobilité*, has been part of the Ministry of Defense's personnel policy. It supports the external mobility of military personnel and strengthens the attractiveness of the military profession in the labor market, both for public and private companies. The agency relies on a network of more than 700 members of local military and civilian retraining specialists, with excellent knowledge of the specific soldiers' needs and cooperates with more than 7 000 public and private companies. The agency monitors professional soldiers, provides them with professional assistance in the development of their personal, professional projects, helps them to find training appropriate to their needs, accompanies them, and connects with employers. More than 16 000 candidates make use of the agency's services each year. The agency has its headquarters in Paris, 6 regional centers, 57 local offices (52 in France and 5 overseas), 1 retraining center for officers, 1 military training center and 1 unemployment center. The agency provides its services on the principle of equality, regardless of rank or function in the military.

A similar approach can be followed in the United Kingdom, where the Career Transition Partnership (CTP) project is created in collaboration with the Ministry of Defense of the United Kingdom and Right Management Ltd. company. It provides services to outgoing soldiers two years before and two years after their release to find further employment opportunities and prepare them for professional growth. It has helped more than 200 000 soldiers coming from all kinds of troops. Within the United Kingdom, the company uses 9 contact centers, and 1 is in Germany. The company also actively works with employers interested in former soldiers as potential employees and connects them together. More than 14 000 soldiers are released from the armed forces every year in the United Kingdom. Assistance is provided to everyone, regardless of the rank or length of service, but the assistance level varies according to individual criteria. Initial contact takes place through registration on the project web portal.

Another good example is Germany, where around 10 000 - 15 000 soldiers terminate their military contract every year. A special educational institution, known as the *Bundeswehrfachschule*, and career agency, known as the *Berufsförderungsdienst*, play an important role in preparing a soldier for civilian work. The agency employs approximately 1 000 civilian specialists at 46 offices across all military districts. It provides planned and systematic preparation for a job change, starting from basic military training and lasting throughout and after military service [16].

Poland, where around 5 000 soldiers are released from the armed forces every year, also takes care of soldiers and their second career. The core of the integration of soldiers into the labor market is a system based on the cooperation of specialized institutions, so called Professional Activation Centers, known as *Ośrodki Aktywizacji Zawodowej*, located in eight cities: Warsaw, where the headquarter is located (14 employees), Bydgoszcz, Gdynia, Krakow, Lublin, Olsztyn, Szczecin and Wrocław (5 employees each). In 2007, the Ministry of Defence of Poland took action aimed at implementing the relevant legislative changes to implement the system approach to preparation of soldiers for a second career. This field is currently listed in at least eight normative legal acts. All soldiers with the exception of persons who have renounced Polish citizenship, have been deprived of their service due to a serious disciplinary offense or a criminal conviction to an unconditional prison sentence are eligible for labor market integration assistance.

Ministries of defense of all of the above mentioned countries usually provide individual career advice related to job search assistance, conduct seminars to acquire necessary skills to find

employment in the labor market and organize job fairs where military representatives meet with employers from civilian sector interested in hiring former soldiers. Soldiers are offered the possibility of further education with certification, applicable in the civilian sector, or preferential job placement in the public sector. Beside this, ministries and ministerial agencies designed for this purpose provide other means of care such as operation of special job portals, financial assistance or special leave in order to ensure sufficient preparation for a second career. The preparation usually starts 2 years before the termination of the military service and continues even after it.

The Czech Republic that has been building a career soldier system since the beginning of 2005, should also deal with the systematic preparation of soldiers for the transition to civilian sector. It needs to be secured, especially concerning the fact that the Czech Armed Forces releases and will continue to release soldiers of working age (about 1 000 soldiers with an average age of 36 years every year), and also in connection with the priority measures of the current conception of the construction of the army that aims at increasing the attractiveness and competitiveness of the military profession, the application of a career management system in personnel management, and creating appropriate prerequisites for the use of the skills of soldiers after the termination of their service. The study is, therefore, very topical.

3 Research objective and methodology

Twenty semi-structured interviews lasting from 30 to 120 minutes were conducted in order to find out the information concerning the preparation of soldiers of the Czech Armed Forces for a second career. The following research question was asked: What is your opinion on the current form of preparation of soldiers for a second career in the Czech Republic? The method of deliberate, quota selection was used for the selection of respondents. The criterion was a job position at the field of human resources management within the Ministry of Defense of the Czech Republic, at war veteran associations and companies involved in implementation of projects of the European Social Fund to support the employment of war veterans. During the interviews, a record sheet was used, and a non-directive style of interviewing was applied.

In order to verify the obtained expert testimonies, additional qualitative research was carried out and distributed via an electronic questionnaire to a target group of former professional soldiers of the Czech Armed Forces whose contract terminated 1 - 3 years prior to the research. The research was attended by 313 former professional soldiers of all ranks, most of them in the rank of Corporal, Sergeant, Master Sergeant and Colonel. 90% of the interviewees were men, 10% women, half of them having secondary education with a school-leaving certificate, half of them a bachelor's or master's degree. The length of military service was for 8% of respondents up to 5 years, for 14% of respondents 5 - 10 years, for 19% of respondents 10 - 15 years, for 24% of respondents 15 - 20 years and for 35% of respondents more than 20 years. To find an employment in the civilian sector took to almost a quarter of the respondents more than 6 months. 7% of respondents were not employed at the time of the research. The research question for this part of the research was the same: What is your opinion on the current form of preparation of soldiers for a second career in the Czech Republic? The specific open questions focused on the kind of assistance Ministry of Defense provided the respondents before leaving the army, their satisfaction with the offer of retraining courses, and the issues encountered during the integration into the labor market after leaving the army.

The answers of the respondents of both parts of the research were processed using an inductive coding strategy. After the reduction of the first text of the respondents' answers, the subsequent open coding and categorization of terms was used. The findings were summarized and served as an input for the SWOT analysis.

The SWOT analysis is a highly useful and simple tool for identifying the actual state, the necessary changes, potential risks, and the necessary steps to turn weaknesses into strengths and eliminate risks. It represents a comprehensive method of qualitative evaluation of all relevant pages of a defined topic. It is an orientation tool that is particularly useful at the beginning of planning, designing or making decisions. In practice, it serves as a tool for identifying the strategic position of a company organization or group of individuals. The analysis allows perceiving a given system (process, object) using four viewpoints: S (Strength), W (Weakness), O (Opportunities), and T (Threats). The SWOT analysis identifies internal resources and confronts them with conditions and changes in the external environment. The analysis always results in a strategy formulation. The principles and use of SWOT analysis are recorded in many literature e. g. [17], [18], [19], [20], [21], [22] and others. The primary meaning and contribution of SWOT analysis lie in the comprehensive and thorough identification of external and internal influences and links toward strategy formulation [17], [18]. The SWOT analysis is a versatile tool that can be used in different areas.

The methodological procedure of SWOT analysis is not standardized. Individual phases of SWOT analysis are: preparation for SWOT analysis, identification and evaluation of strengths and weaknesses of an organization, identification and evaluation of opportunities and threats from the external environment, factors evaluation, calculation of output values of analysis and display of vectors and creation of strategies alternatives: S-O (Strengths-Opportunities), W-O (Weaknesses-Opportunities), S-T (Strengths-Threats) and W-T (Weaknesses-Threats). Identification of the internal environment was performed using a form to identify strengths and weaknesses. The form also has a Why field, which tells us why the indicator is a strong or weak point. The strengths and weaknesses of the current state of preparation of soldiers for a second career implemented by the Ministry of Defence of the Czech Republic is described in Table 1 and Table 2 (see appendix A). Identification of the external environment was conducted using a form to identify opportunities and threats. The form also has a Why field, which gives us the reason for the opportunity or threat indicator. The opportunities and threats of the current state of preparation of soldiers for a second career implemented by the Ministry of Defence of the Czech Republic is described in Table 3 and Table 4 (see appendix A). The research objective is to evaluate current approaches to helping soldiers of the Czech Armed Forces in their career transition and based on the SWOT analysis output to suggest possible implementation measures.

4 Results

The findings of the interviews and questionnaires are divided into four quadrants of the SWOT matrix - strengths, weaknesses, opportunities, and threats. Each of the factor is listed in the following tables, in which it has its designation and description. Table 1 and table 2 list and describe internal factors - strengths and weaknesses. Table 3 and table 4 list and describe external factors - opportunities and threats.

The prerequisite for this analysis is that the observed S, W, O, and T values, as well as the resulting strategy, can make a significant contribution to the system change. From the above information, three necessary recalculation modules according to M. Jenčo and L. Lysá [23] were created. The base table shows the dependencies between the factors entering the internal (strengths and weaknesses) and the external environment (opportunities and threats). In the tables 5 - 8, you can see the value of each factor on a scale of 1-5 depending on its importance (V_i). The modified version of the Fuller Triangle is designed to meet the requirements and efficiency of the proposed application. Thus, it is a pairwise comparison of factors based on the following assessment. A value of 3 means that the first of the two factors are more important than others. A value of 2 means that the factors being compared are equally important. A value of 1 means that the first of the two factors is less important than the

other. Subsequently, the weighting factor W_f is calculated using the equation:

$$W_f = \frac{\sum_{f=1}^n e_f}{e_{all}} \quad (1)$$

when:

e_f - marks a factor evaluation (f - number),

n - represents the number of factors in the given field,

e_{all} - is the sum of all the assessments in the field.

Table 5 illustrates the evaluation (V_i) and weight (W_i) of each strength and all of the strengths in total. Table 6 illustrates the evaluation (V_i) and weight (W_i) of each weakness and all of the weaknesses in total. Table 7 illustrates the evaluation (V_i) and weight (W_i) of each opportunity and all of the opportunities in total. Table 8 illustrates the evaluation (V_i) and weight (W_i) of each threat and all of the threats in total (for table 5 - 8 see appendix B).

The output table (Table 9) contains the factor names, their weights (W_i), evaluations (V_i), and the weighted evaluations (P_i). The weighted evaluations provide a primary value for vector expression of strengths, weaknesses, opportunities and threats. The vector sum gives us the direction of the final vector, which reflects the strategic orientation of the analyzed system. Coordinates of the final vector are displayed in Table 10.

The resulting graph (depicted in Figure 1) imitates the shape of the evaluated vectors representing the evaluator's direction. W-O represents the "mini-maxi" strategy. The purpose of creating strategies is to find ways to exploit the current state and to improve it in the future. The aim of the W-O strategy is to improve weaknesses by taking advantage of opportunities (for table 9 and 10 and Figure 1 see appendix C).

5 Discussion

What actions can Ministry of Defence of the Czech Republic take to minimize the weaknesses of current approach to the preparation of soldiers for a second career using the external opportunities that were identified?

Mainly four Czech veteran associations help their members in job search. Most often by keeping their own databases of job seekers and associating them with potential employers and by sharing job offers on social networks. For this purpose, it would be appropriate to use existing portals operated by the Ministry of Defense of the Czech Republic, such as the www.army.cz website, where potential employers could fill in a job offer form, which would be provided to soldiers directly on the site or through internal portals, to which all soldiers have access to. If soldiers were allowed to create a user profile and fill in data grouped on the basis of a curriculum vitae, there would be the possibility of sharing information also in the opposite direction - viewing soldiers' profiles by employers with the option to make contact.

The preparation of soldiers for a second career in selected NATO countries usually starts 2 years before the termination of the military service and continues several months after it when soldiers are assisted during their adaptation to the civilian sector and even in their new job. We propose at least one year before the expiry of the military contract to decide whether a soldier will be released from service or not, thus ensuring a sufficiently long period of time for good preparation for the transition to the civilian sector. Retraining should be a key factor when considering weaknesses. The maximum duration of courses should be extended from three months to at least six months, starting 12 months before and at any time up to three months after termination of service. Furthermore, it is necessary to reconsider the current offer of retraining courses - exclude the courses that do not meet the requirements of the labor market and which lasts a disproportionately short time. On contrary, to

include and send soldiers to retraining courses in which they can use their existing knowledge and competencies and further expand them. A system of regular identification of demand for specific fields of retraining courses and identification of the satisfaction of soldiers who completed the courses should be implemented via collection and analysis of opinions in the form of oral, printed, or electronic questionnaires at internal communication portals. It is advisable to monitor the success of graduates in the labor market for one year at least.

Career transition assistance in selected NATO countries is provided to everyone, regardless of the rank or length of service, but the assistance level varies according to established criteria. Therefore, soldiers of the Czech Armed Forces injured or suffering from a health problem should be allowed to participate in a retraining course, even if the length of their service is less than five years. Furthermore, a support to soldiers whose service was terminated due to organizational changes or to soldiers whose specialization falls under a pre-established list of military specializations hardly applicable in the civilian sector should be also provided. The range of assistance would be reduced accordingly.

To implement all the proposed measures, it is necessary to increase the number of employees of the Education Department of the Personnel Agency of the Czech Armed Forces dealing with the area of retraining and to train the personnel department of military units.

In the framework of international cooperation between the ministries of defense, employees of the Ministry of Defense of the Czech Republic could be trained in the above-mentioned foreign career transition agencies or their specialists could be hired to provide series of lectures. Their proven knowledge and good practice could then be adapted to the conditions and legislation of the Czech Republic.

Not only by the range of outplacement assistance of selected NATO countries, mentioned in the theoretical background chapter, but also by the knowledge of people who assisted war veterans within the implemented projects is a great opportunity Ministry of Defence can benefit from. The European Social Fund is funding tens of thousands of projects across the Union that make a difference to the lives of millions of individuals. Between 2011 and 2015 seven projects were funded to support war veterans of the Czech Armed Forces and helped to approximately a thousand of them to integrate into civilian life. The tools of assistance were motivational seminars, focused on understanding communication elements in civilian environment, writing a curriculum vitae, preparing for job interview or providing basic information about employees' rights and obligations at civilian labor market, individual counseling with experts such as psychologists, career counselors, coaches and human resources managers, retraining and start-ups assistance, job creation and placement in subsidized jobs with wage reimbursement for a period of six months to one year.

Professional individual and group counselling services focused on helping to orientate in the civilian labor market is the basis for the successful start of a second career. They could be provided by recruiting offices of the Czech Armed Forces, located in 13 cities. They could be called rather career offices and provide assistance not only to incoming but also outgoing soldiers. The staff of recruiting offices could be increased, the existing staff (approximately 50 employees) could be trained to provide the assistance or the assistance could be outsourced from external educational and career agencies.

In terms of the elimination of weaknesses, it is necessary to assume a broad social consensus over the solution of the research problem, enforcement of legislative changes, and changes of internal regulations and their strict observance in personnel procedures. The Veteran Work Team currently working on a new concept of taking care of soldiers will play one of the most important roles in the future. It should be benefited from the cooperation among the team members of all

kinds of specializations and experts of external institutions. It is appropriate to elaborate a comprehensive concept of active employment policy for soldiers, based on several basic measures agreed both by the Ministry of Defense and the Ministry of Labor and Social Affairs of the Czech Republic. This policy should contain at least the following features:

- define professional soldiers as a group at risk of unemployment,
- establish contacts with suitable suppliers of retraining courses for soldiers,
- keep a special record of suitable vacancies for former soldiers that would be shared with personnel departments of military units,
- monitor the employment of former soldiers after the termination of military service with the help of job seeker database shared by both the ministries.

The introduction of relevant changes in the legislation will eventually enable standardization of the preparation of soldiers for a second career, thus establishing a unified systemic approach, as is the case of the rest of the developed NATO countries.

6 Conclusions

The application of the SWOT analysis has helped us to quickly and effectively map the reality and enabled us to identify a strategy of possible further progress. Based on the results of our study, it can be said that interviewed experts and questionnaire respondents agreed on several internal and external factors that influence the preparation of soldiers for a second career in the Czech Republic. The most comprehensive group of factors were weaknesses that are, in most cases, connected with the current form of retraining courses provided by the Ministry of Defence. Probably the most serious weakness that emerged in all the interviews and most of the questionnaires and summarize the insight into the issue is that there is no systemic approach to the preparation of soldiers for a career transition.

The result of the SWOT analysis was vectoring that, based on the evaluation of the current state, recommend the use of W-O strategy based on maximizing opportunities to minimize weaknesses. By taking advantage of the knowledge from implemented projects to support war veterans, experience of war veteran associations, good practice of selected NATO countries and current activities of a team working on a new concept of taking care of soldiers, the weaknesses could be eliminated. Adjusting the existing form of retraining courses and widening the range of career transition assistance as suggested will also in the final consequence positively affect the presence of aforementioned threats. It will result in better preparedness of soldiers in the civilian labor market and thus increase their applicability. Civilian employers' negative opinions about the working abilities of former soldiers would be reduced, and socio-pathological phenomena of soldiers associated with poor mental status resulting from job loss would occur less frequently. From a macroeconomic point of view, the unemployment rate of former soldiers would be reduced, which would ultimately lead to a lower burden on the state budget.

In order for the process to be continually improved, this area should be further explored. It is useful to continue with the research and focus it on its quantitative aspect, that can be statistically verified. It is also important to apply SWOT analysis more frequently and thus have a constant overview of changes in the internal and external environment and orientate the direction of the activities accordingly

Literature:

1. Stacho, Z., Stachová, K., Raišier, A. G.: Changes in approach to employee development in organizations on a regional scale. *Journal of International Studies*, 2019, 12(2), 299-308. doi:10.14254/2071-8330.2019/12-2/19.

2. Korsakienė, R., Raišienė, A. G., Bužavaitė, M.: Work Engagement of Older Employees: do Employee and Work-Related Factors Matter? *Economics and Sociology*, 2017, 10(4), 151-161. doi:10.14254/2071-789X.2017/10-4/12.
3. Levinson, D. J. *The season's of a man's life*. New York: Alfred A. Knopf. 1978.
4. Wing, C., Wolf, D. A., London, A. S., Wilmoth, J. M.: *Military service and later labor force outcomes: a life course approach*. Paper presented at the 2009 Annual Meeting of the Population Association of America. 2009.
5. Garber, D. L.: *Retired soldiers in second careers: Self-assessed change, reference group salience, and psychological well-being*. Unpublished doctoral dissertation, University of Southern California, Los Angeles. 1971.
6. Kapur, N., While, D., Blatchley, N., Bray, I., Harrison, K.: Suicide after leaving the UK Armed Forces - A cohort study. *PLoS Medicine*, 2009, 6(3), e1000026. DOI: <https://doi.org/10.1371/journal.pmed.1000026>.
7. Higate, P.: Theorizing continuity: From military to civilian life. *Armed Forces and Society*, 2001, 27, 443-460. DOI: <http://dx.doi.org/10.1177/0095327X0102700306>.
8. Zivin, K., Campbell, D. G., Lanto, A. B., Chaney, E. F., Bolkan, C., Bonner, L. M., Miller, E.M., Valenstein, M., Waltz, T.J., & Rubenstein, L. V. (2012). Relationships between mood and employment over time among depressed VA primary care patients. *General Hospital Psychiatry* 34, 468-477. DOI: <https://doi.org/10.1016/j.genhosppsych.2012.05.008>.
9. Brunger, H., Serrato, J., Ogden, J.: "No man's land": the transition to civilian life. *Journal of Aggression, Conflict and Peace Research*, 2013, 5(2), 86-100. DOI: <https://doi.org/10.1108/17596591311313681>
10. Wolpert, D. S.: Military retirement and the transition to civilian life. In J. A. Martin, L. N. Rosen, & L. R. Sparacino (Eds.). *The military family: A practice guide for human service providers* (pp. 103-119). Westport, CT: Praeger. 2000.
11. Maharajan, K., Subramani, B.: A critical study on the resettlement problems of air force ex-servicemen in India: Evolving management strategies. *International Journal of Research in Management Sciences*, 2014, 2, 13-23.
12. Vigoda-Gadot, E., Baruch, Y., Grimland, S.: Career transitions: An empirical examination of second career of military retirees. *Public Personnel Management*, 2010, 39(4), 379-404. DOI: <https://doi.org/10.1177/009102601003900405>.
13. Spiegel, P. E., Shultz, K. S.: The influence of preretirement planning and transferability of skills on naval officers' retirement satisfaction and adjustment. *Military psychology*, 2003, 15(4), 285-307. DOI: https://doi.org/10.1207/S15327876MP1504_3.
14. Fuller, R. L., Redfering, D. L.: Effects of preretirement planning on the retirement adjustment of military personnel. *Work and Occupations*, 1976, 3(4), 479-487. DOI: <https://doi.org/10.1177/009392857634005>.
15. McNeil, J. S., Lecca, P. J., Wright, R.: *Military retirement: Social, economic, and mental health dilemmas*. Totowa. New Jersey: Rowman & Allanheld. 1983.
16. Jonsson, M.: *What do you know? Easing Soldiers' transition to the civilian labour market by making knowledge understandable*. Sweden, University of Gothenburg. 2014.
17. Grasseová, M., Dubec, R., Řehák, D.: *Analýza podniku v rukou manažera [Business analysis in manager hands]*. 33 nejpoužívanějších metod strategického řízení [33 most used methods of strategic management]. Prague: CPRESS, 2010, 336 p.
18. Dudinská, E., Budaj, P., Budajová, G. *Analýzy v marketingovém plánování [Analysis in marketing planning]*. Prešov: Publishing Michala Vaška, 2009, 230 p.
19. Budaj, P., Varhoľák, P.: *Operačný manažment [Operational management]*. Prešov: Vydavateľstvo Michala Vaška, 2011, 227 p.
20. Keřkovský, M., Vykypěl, O.: *Strategické řízení: teorie pro praxi [Strategic management: theory for practice]*, Prague: C. H. Beck, 2006, 206 p.
21. Hendl, J.: *Kvalitativní výzkum: základní metody a aplikace [Qualitative research: basic methods and applications]*, Prague: Portál, 2005, 408 p.
22. Sedlačková, H., Buchta, K.: *Strategická analýza [Strategic analysis]*, Prague: C. H. Beck, 2006, 121 p.
23. Jenčo, M., Lysá, L.: "Evaluation of a work team strategy by using the SWOT analysis", *Quality - Access to Success*. 2018, 19 (165), 39-44. Accession Number: WOS:000450328700002, ISSN: 1582-2559.

Primary Paper Section: A

Secondary Paper Section: AE

Appendices

Appendix A Strengths, Weaknesses, Opportunities and Threats Identification Forms

Table 1. Strengths identification form (created by authors)

Label	Strengths	Strengths description
S1	Acquiring values during military education	Education in military schools systematically educates military students who acquire important values that are highly valued in the civilian labor market.
S2	Career order as a motivator	Through the introduction of the principles of career order, soldiers are motivated to personal development and deepening professional qualifications.
S3	Retraining courses during the military service	Ministry of Defence of the Czech Republic provides retraining courses that can be attended by soldiers before the termination of military service. It enables them to acquire needed knowledge before the integration to labor market.
S4	Early evaluation interview	Consultation on the intention to extend the military service during the evaluation interview is held 24 months before the termination.

Table 2. Weaknesses identification form (created by authors)

Label	Weaknesses	Weakness description
W1	Late notification of non-renewal of the military contract	Early evaluation interview is not legally binding and does not always take place. On contrary at the latest 4 months before the expiry of the military contract, it is necessary to decide whether it will be prolonged or terminated, as it is stated in the Professional Soldiers Act and therefore legally binding. However in terms of preparation for a second career, this is a very short period of time.
W2	Short duration of retraining courses	The maximum permissible period of attending the retraining courses is three months and it is not long enough for retraining in a new field. The courses offered by the Ministry of Defense of the Czech Republic last on average 3-4 weeks. However, it is difficult to retrain a professionally targeted expert to another expert in such a short time.
W3	Insufficient depth of retraining courses	Most retraining courses focus only on the basic knowledge and skills required to pursue the occupations in which soldiers retrain. However, this is not compatible with the labor market requirements.
W4	No support for soldiers with a contract up to five years	The criterion for eligibility for retraining is a minimum length of service of five years. Although since 2016, persons with the extent of service up to three years have represented the largest share of the total number of outgoing soldiers (approx. 25 %), they were not offered any assistance, even reasonably reduced.
W5	No feedback from retraining courses participants	The Ministry of Defense of the Czech Republic does not monitor what retraining courses soldiers are interested in, whether the courses provided were beneficial in finding a job and whether soldiers found an employment in the labor market. Because of this lack of feedback, it is, therefore, challenging to adapt supply of courses and thus monitor the effectiveness of the money spent.
W6	Insufficient staffing of the department providing retraining courses	The retraining of professional soldiers is ensured only by two employees at the Education Department of the Personnel Agency of the Czech Armed Forces. Due to a large number of departing soldiers from the army who are entitled to apply for a retraining course every year, the number of retraining staff is disproportionately low.
W7	The absence of guidance during the career transition	No counseling activity within the Ministry of Defense of the Czech Republic helps the soldiers to regulate their steps in favor of finding a job at civilian labor market.
W8	Lack of contact with former soldiers	There is no single database or organizational unit that would associate former soldiers and work with them for a long time. After the termination of service, the Ministry of Defense terminates communication with soldiers and does not monitor their further employment.
W9	The absence of systemic approach to preparing soldiers for second career	There is no systemic approach to preparing soldiers for a second career in the Czech Republic. The Ministry of Defense of the Czech Republic does not have sufficient legislative, material, or personnel resources to map and satisfy the specific work related problems of soldiers in the civilian sector. So far, they have been replaced only by partial initiatives of actors in the field of military life, but with insufficient capacity and intensity.

Table 3. Opportunities identification form (created by authors)

Label	Opportunities	Opportunities description
O1	Knowledge from implemented projects to support war veterans	The seven projects implemented under the Human Resources and Employment Operational Program of the European Social Fund are a valuable practical basis for setting up a system of preparation of soldiers for a second career. Implementers and suppliers of these projects know the specifics of the target group of war veterans; thus, they can extend their know-how in favor of helping all soldiers, not only war veterans.
O2	Experience of war veteran associations	During its existence, the network of war veteran associations has provided advice and mediation to dozens of war veterans and former soldiers. Although these are not cases based on a systemic but rather individual approach, and the number of people supported in this way is marginal in terms of the number of professional soldiers leaving the army, these activities bring valuable experience.
O3	Monitoring the good practice of selected NATO countries	Follow-up of good practice in the field of preparation of soldiers for a second career in selected NATO countries should be considered. As it can be a great inspiration and starting point for relevant activities of the Ministry of Defence of the Czech Republic.
O4	A team working on a new concept of taking care of soldiers	Creation of a Veteran Work Team, composed of both internal (from the Ministry of Defence) and external experts will play an important role in the future. Team works on a new concept of taking care of soldiers, including the area of assistance during the integration into the labor market.

Table 4. Threats identification form (created by authors)

Label	Threats	Threats description
T1	Negative prejudices of civilian employers towards former soldiers	When soldiers enter the civilian sector unprepared, the deepening of negative prejudice by civilian employers regarding the skills of former soldiers of the Czech Armed Forces can be observed.
T2	Cases of social exclusion of war veterans	The exclusion of former soldiers in the civilian sector, especially those who participated in a foreign mission, may lead also to the social exclusion. Former soldiers can become dangerous and easily manipulated by criminal groups, using mainly war veterans to commit crimes.
T3	Weakening of the national economy due to unemployment of former soldiers	The current situation with no systemic approach to preparing soldiers for a second career is very economically disadvantageous for the state. Soldiers who cannot find a job in the labor market become unemployed and thus passive recipients of a number of subsidies. State resources are drained, these persons do not contribute to tax payments to the state budget, and thus the entire national economy is weakened. Between 2008 - 2017, 18% of former soldiers of the Czech Armed Forces of productive age were unemployed for the average period of 8 months, according to processed statistics provided by the Ministry of Labor and Social Affairs of the Czech Republic. This is more than three times higher than the average general unemployment rate in the Czech Republic in this period.

Appendix B Input data for strengths, weaknesses, opportunities and threats**Table 5.** Input data – strengths (created by authors)

Strengths	Evaluation (V_i)		S1	S2	S3	S4	Σ	Weight (W_i)
S1	3	S1	×	1	1	1	3	0,13
S2	3	S2	3	×	1	1	5	0,21
S3	4	S3	3	3	×	1	7	0,29
S4	4	S4	3	3	3	×	9	0,38
Total	14						24	1,00

Table 6. Input data – weaknesses (created by authors)

Weaknesses	Evaluation (V_i)		W1	W2	W3	W4	W5	W6	W7	W8	W9	Σ	Weight (W_i)
W1	4	W1	×	1	3	3	3	3	3	3	1	20	0,14
W2	5	W2	3	×	3	3	3	3	3	3	1	22	0,15
W3	3	W3	1	1	×	3	3	3	3	3	1	18	0,13
W4	3	W4	1	1	1	×	1	1	1	1	1	8	0,06
W5	3	W5	1	1	1	3	×	1	1	3	1	12	0,08
W6	2	W6	1	1	1	3	3	×	3	3	1	16	0,11
W7	3	W7	1	1	1	3	3	1	×	3	1	14	0,10
W8	5	W8	1	1	1	3	1	1	1	×	1	10	0,07
W9	5	W9	3	3	3	3	3	3	3	3	×	24	0,17
Total	33											144	1,00

Table 7. Input data – opportunities (created by authors)

Opportunities	Evaluation (V_i)		O1	O2	O3	O4	Σ	Weight (W_i)
O1	3	O1	×	1	1	1	3	0,13
O2	3	O2	3	×	1	1	5	0,21
O3	4	O3	3	3	×	1	7	0,29
O4	5	O4	3	3	3	×	9	0,38
Total	15						24	1,00

Table 8. Input data – threats (created by authors)

Threats	Evaluation (V_i)		T1	T2	T3	Σ	Weight (W_i)
T1	4	T1	×	3	1	4	0,33
T2	3	T2	1	×	1	2	0,17
T3	3	T3	3	3	×	6	0,50
Total	10					12	1,00

Appendix C Weights and scores of each factor, final vector and strategy

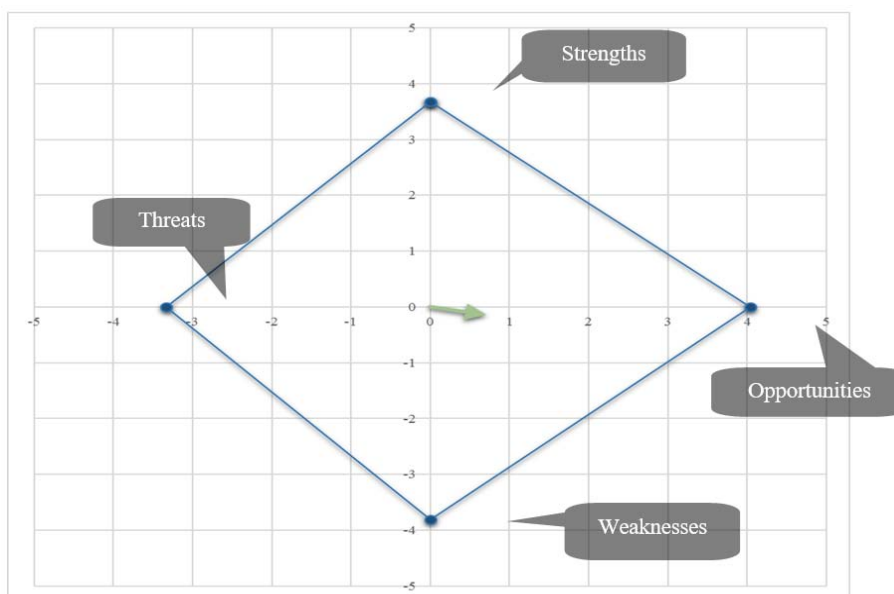
Table 9. Weights and scores of each factor (created by authors)

Strengths	W_f	V_f	P_f
S1	0,13	3	0,38
S2	0,21	3	0,63
S3	0,29	4	1,17
S4	0,38	4	1,50
Total	1,00	14	3,67
Weaknesses	W_f	V_f	P_f
W1	0,14	4	0,56
W2	0,15	5	0,76
W3	0,13	3	0,38
W4	0,06	3	0,17
W5	0,08	3	0,25
W6	0,11	2	0,22
W7	0,10	3	0,29
W8	0,07	5	0,35
W9	0,17	5	0,83
Total	1,00	33	3,81
Opportunities	W_f	V_f	P_f
O1	0,13	3	0,38
O2	0,21	3	0,63
O3	0,29	4	1,17
O4	0,38	5	1,88
Total	1,00	15	4,04
Threats	W_f	V_f	P_f
T1	0,33	4	1,33
T2	0,17	3	0,50
T3	0,50	3	1,50
Total	1,00	10	3,33

Table 10. Vectors (created by authors)

Evaluated factor (direction)	Y	X
Final vector	0,71	-0,14

Figure 1. Strategy W-O (created by authors)



INCREASING PUPILS' INTEREST IN NATURE PROTECTION AND SUSTAINABLE DEVELOPMENT THROUGH A PHILOSOPHICAL LITERARY STORY

*SIMONA BORISOVÁ

Constantine the Philosopher University in Nitra, Department of Pedagogy, Drážovská cesta 4, 949 74 Nitra, Slovakia
email: "simona.borisova@ukf.sk"

This study was supported by the Slovak Research and Development Agency under the contract No. APVV-18-0484 as a part of the research Forest Pedagogy and Education to Sustainable Development in pre-primary and primary education.

Abstract: The aim of the article is to analyse the possibilities of stimulating interest in sustainable development, climate and environment improvement through work with philosophical literary stories. In this article, we focus on a specific philosophical story called *The World According to Anna*, written by the Norwegian philosopher and writer Jostein Gaarder. The book is stated for readers of older school age. The main method of the research part is the interpretation of the above artistic text with an emphasis on the depiction of elements appearing as a motivation to think about the complex issues of the environment and its protection. Subsequently, we discuss the possibilities of working with similar books in the process of education.

Keywords: sustainable development, environmental improvement, education, philosophical literary stories

1 Introduction

There are many ways to form a positive attitude towards the environment and its sustainable development in working with students. Which methods will be used to achieve this goal depends primarily on the teacher, his relationship to nature, his commitment to this issue, the nature of the school subject and other factors. We consider the use of a philosophical literary story with the theme of nature as an alternative to the traditional methods of forming the values of nature protection. One of the authors writing philosophical stories is Jostein Gaarder. In his books (mainly philosophical literary stories) he deals with issues of human existence, the essence of things and being, as well as the search for the meaning of the origin of the world. Books of this author are intended especially for children in the older school age, but these stories can be read on several levels, so they can also attract an adult reader. The book *The World According to Anna* is popular among many readers of the world with its parallel story, deep philosophical thoughts and simple language. The main character, Anna, is a sixteen-year-old curious girl, in some ways different from her peers and in some ways she solves the same problems as current teenagers. We recommend including the story according to the maturity of the reader. The story (or its parts) can be included in several school subjects. Except for literature, it can be biology, geography, civics, history, ethics, religion, or some other subjects depending on the topic of the curriculum. The teacher is able to work with this artistic text in various ways, at least he can recommend the text to pupils as an optional reading. Parts of the text can be used as a stimulus for discussion in which values such as love, honesty, nature protection, health, wisdom or education could be solved.

2 Literary stories focused on nature protection and sustainability

Several authors describe economic development as a burdensome state for the functioning of nature (eg Špirko, 1999; Huba, 2004; Lipovetsky, 2007; Pelikán, 2011; Pechočiaková Svitačová, 2020). There are many approaches to raising awareness of the need for sustainable development. Pechočiaková Svitačová (2020) pays attention to eco-literacy as one of the components of education for sustainable development. The author presents environmental literacy as useful in transforming the economy into a sustainable one. She argues over the continuation of negative global changes, the conflict between man and nature and argues that the role of educational institutions is to contribute to ensuring sustainable development through education for sustainability. Although we do not underestimate the influence of the media, politics, the economy and other sectors in ensuring sustainable development, this paper

focus mainly on education as a necessary instrument of creating a sustainable future. The connection between philosophy and literature in relation to nature protection and sustainable development is also represented by so-called eco-narratives, for example Pintes (2020) deals with the issue of eco-narratives in more detail.

In relation to this paper, we include the attitude of the authors Kollárová, Karasová, Nagyová (2019), which clarify the specifics of teaching the subjects of elementary realia at the first stage of primary school in connection to literary texts. They focus mainly on the curriculum about the forest environment, which is associated with literary text and the subsequent implementation of activating methods. Effective work with a literary text about the forest environment is a subject to an appropriate selection of the text, as well as functionally selected tasks and questions that stimulate pupils' activity of thinking. We consider the implementation of a philosophical literary story to be one of the ways to increase interest in nature protection and sustainable development. The philosophical literary stories are part of the artistic (fiction) literature, it contains philosophical categories, but it is characterized by simplicity in the thematic, content and linguistic aspect. The philosophical problems in this specific text are not limited for adults and these stories don't have to be formulated in such a way they are too distant for primary and secondary school pupils. One of the positive areas of philosophizing is that people of almost all ages can participate in it with pleasure and enjoyment. Working with a philosophical literary story (for example asking philosophical questions, discussion, role-playing) could provide the application of specific cognitive, behavioural and socio-emotional skills enriching pupils with challenges in nature protection.

3 Materials and Methods

The introduction of this paper shows that the primary material for working with data is the literary story *The World According to Anna*, written for pupils from about twelve years of age. We consider this book as appropriate in raising awareness of sustainable development and at the same time sufficiently stimulating it to develop an interest in nature protection and sustainable development by including a number of conflicting philosophical concepts. The main method of this paper is the interpretation of an artistic text and through it we deal with concepts such as climate change, ecological disasters, plant and animal extinction, cultural diversity, climate change and so on. These elements potentially observable in a philosophical literary story are subject to the interpretation of an artistic text, through which we can reveal the deeper meanings and functions of the text when focusing on the topic of nature protection and sustainable development.

Interpretation simply represents the reduction of the original text (in this case in written form) to key statements and at the same time creating explanations of meanings. Chrz (2013) describes the interpretation as extended understanding, 'answering the unanswered'. Interpretation of a literary text is a method that depends on the perception of the interpreting researcher, so it is necessary to take care to avoid possible underinterpretation (not displaying key elements of the literary text with respect to the topic) or overinterpretation (displaying text elements that don't result from the text). In the following chapter, through the interpretation of the literary text, we will reflect several elements that may be useful in supporting the formation of a positive relationship with nature.

3.1 Interpretation of the philosophical artistic text *The World According to Anna* with a connection to the elements and values of the environment

The title of the book suggests that the core of the story is the inquiry of environmental issues. The reader encounters warnings

about the effects of climate change at the beginning of the story: *But on New Year's Eve the year Anna turned ten, no snow had fallen either on the mountain plateau or on the lowlands. Jack Frost had long held the countryside in his icy grip but, apart from the odd small drift, the mountains were untouched by snow. Even the high mountain terrain lay bare beneath the open sky, stripped of its winter cloak* (Gaarder, 2016, p. 7). In addition, the author initially outlines the topic of animal migration to human dwellings: *The absence of snow had not been the only talking point that Christmas. Over the holidays, reindeer had been spotted down by the farms, and people joked that Father Christmas might have left behind a couple on his rooftop travels. Anna had sensed that there was something scary, something alarming about this. Reindeer had never strayed down to the villages before. Anna had seen pictures in the newspaper of farmers trying to feed a poor, frightened creature: Wild Reindeer in Mountain Villages the caption had read* (Gaarder, 2016, p. 7-8). The main character – Anna – perceived the beauty of nature by the lake: *Under a thin membrane of ice she saw moss and lichen, crowberries and black bearberries with crimson leaves. It was as though she had moved into a more precious, a more refined, world* (Gaarder, 2016, p. 8). But then, there is a sharp contrast. When Anna sees dead mice on the ground, she is shocked: *Soon, though, she spotted a dead mouse ... and another. Under a dwarf birch she found a dead lemming. By now Anna understood, and she no longer felt as though she was on an adventure* (Gaarder, 2016, p. 8-9).

Despite the fact that the story is taking place in Norway, the problem of warm winters is not uncommon in other European countries. The teacher can also draw attention to this phenomenon of global warming through some parts of the text. In the following pages, the story is postponed by six years, two days before Anna's sixteenth birthday, when she received a new smartphone, but she also received an ancient ring with a ruby inherited from her aunt Sunnive. The reader finds out that the main protagonist is in the first year of high school, and about her lush imagination from an early age: *Ever since she was small, Anna had been told she had a lively imagination. If she was asked what she was thinking, she would reel off endless stories, and no one had thought this was anything other than a good thing. But that spring, Anna had begun to believe some of the stories. She had a feeling that they were being sent to her, perhaps from another time, or even another reality* (Gaarder, 2016, p. 12-13). Anna had several sessions with a psychologist, who recommended that she should be examined by a psychiatrist in Oslo, who then played a key role in the story. In a session with Anna a psychiatrist Benjamin noticed her unusual behaviour, extraordinary talent and tendency to invent stories. Anna didn't hide her curiosity and asked him a few questions: *What about the doctor? Did he ever come up with strange stories? Did he also have dreams where he was a different person? Had his dreams ever come true?* (Gaarder, 2016, p. 14-15).

Although Anna is an extraordinary girl, Benjamin considers her healthy – her curiosity and the number of curious questions about everything that surrounds her make her special. The reader may notice the young girl's courage in asking questions, conversations can lead him to think more deeply about some topics. In the form of a dialogue, Anna talks to a psychiatrist: *'I think I got that,' he said. 'You may have such an active imagination that it seems to overflow. You can't believe that you made it all up yourself. But imagination is a quality everyone possesses, to a greater or lesser extent. Everyone has their own dream world. Not everyone, however, can remember what they dreamed the night before. This is where you appear to have a rare gift* (Gaarder, 2016, p. 15). Anna replied: *'But I still get a feeling that the dreams come to me from another world. Or from another time'* (Gaarder, 2016, p. 15). This part gradually outlines the solution of the themes of time, reality or fiction. The story contains some real information about the year 2012: *To Anna's surprise, the psychiatrist didn't miss a beat. 'I think today there's about forty per cent more carbon dioxide in the atmosphere than there was before we seriously started burning oil, coal and gas, cutting down forests and farming intensively. It's more than*

600,000 years since the CO2 level was so high, and the problem is man-made' (Gaarder, 2016, p. 18).

The author raises several concerns about climate change in the dialogues: *'I mean, I'm afraid of climate change. I'm afraid that we're risking our climate and environment without a second thought for future generations'* (Gaarder, 2016, p. 17). The philosophical context is the conversation of doctor Benjamin and Anna about the basic problems of human being: *'Sometimes I ask myself whether we live in a culture that intentionally represses fundamental truths. Do you understand what I mean by that?' 'I think so. We try to forget unpleasant things'* (Gaarder, 2016, p. 18). *I agree with you, Anna. It wouldn't surprise me if less than one per cent of the population can explain what the carbon balance is'* (Gaarder, 2016, p. 20). Finally, Benjamin indirectly supported Anna for the activity: *Perhaps you and Jonas should set up a pressure group in your village. That would be the best course of action. As a psychiatrist I know it's not healthy to become consumed by your worries. So, if I may give you a piece of advice it would be: go for it. Make something happen'* (Gaarder, 2016, p. 22).

Another storyline stretches through the story, in which time moves to the date of December 12, 2082 and a character named Nova appears here. She lives in the same house as Anna, but the environment has changed. In the room where Anna used to sleep, there is an apparatus in which the currently extinct species appear. Nova is angry and furious, she is thinking: *The most significant cause of this mass extinction is global warming. It got out of hand decades ago. Only a hundred years earlier, this planet was outstandingly beautiful. In the course of this century it has lost its charm. The world will never be as it was* (Gaarder, 2016, p. 27).

Elements of sci-fi are complemented by the way *Nova looks at the camera at the Siberian tundra, bubbling and boiling* (Gaarder, 2016, p. 28) or *Nana comes into the garden carrying a big tray. She has made a casserole. Nova knows the food is synthetic. She is sick of all this synthetic food even though she is told it contains all the nutrients she needs* (Gaarder, 2016, p. 82) or *She walks to the crossroads where there was a petrol station in the olden days. Now it is a kind of staging post* (Gaarder, 2016, p. 51). The author captures the consequences of reckless human action: *Oil had run out. Almost all the fossil fuels had been used up. The rainforests had been burned down and the peat marshes had rotted. There was so much CO2 in the air and in the sea. Our planet's resources had been destroyed and people were starving* (Gaarder, 2016, p. 108). Sometimes it may seem to the reader that the predictions are exaggerated, but it is possible to assume that this is the author's intention to underline the situation: *This was sick. What right did mankind have to destroy other forms of life?* (Gaarder, 2016, p. 68). Many warnings are extreme: *Nature had been destroyed. Civilisation had almost broken down and the world's population was so much smaller than it is today* (Gaarder, 2016, p. 109), however, some scenarios may give the reader the impression of reality, for example in 2082 Nova flies in space with a friend: *Both of them have seen photos from the Apollo mission more than hundred years ago. The globe is unrecognisable now. It is much more obscured by clouds and storms. This tallies with their experience on the ground* (Gaarder, 2016, p. 154).

Nova, as representative of future generations, is dissatisfied with the state of the environment in which she lives: *Some of nature remains, but only the crumbs from the rich man's table. What she sees is wonderful, but she will not be fobbed off by it. She has the right to live in nature which is intact. Not holey, like a Swiss cheese* (Gaarder, 2016, p. 28-29). She looks at old articles written in 2012 (first published in 2013), which highlight the possible loss of natural resources, such as gas and oil, the extinction of animal species and the loss of biodiversity. She notes that there were several warnings. As she browses on the Internet, text written in the form of a letter appears on the monitor. She finds out that the letter is addressed to her, Nova, and it was written by her grandmother Anna fifty years ago. Nova wonders how her grandmother could have known she

would have a great-granddaughter. The letter takes over the behaviour of the human species, whose desire will never be fulfilled. Although we are alerted to the possible effects of our actions, we are not very interested in protecting the world: *When we use words like 'consumption' I suppose it is because we don't want to see that there is an upper limit. The cup is never full. A word which is hardly ever used now is 'enough'. Instead we overuse another word, which is shorter: 'more'... „A word we rarely use is 'save'. But words like 'eco-conscious' and 'carbon-neutral' appear more and more in newspapers* (Gaarder, 2016, p. 157-158).

The plot again focuses on the character of Anna, who had a dream about her granddaughter Nova and a devastated environment. Anna wonders if there was anything real about the dream and if it was just a fragment of her imagination. The story continues and she dreams of Nova again. In a dream, Nova criticizes her grandmother: *I want monkeys, lions and tigers, too. I want them all back. Why can't you understand? I want bears and wolves in Norway. And that funny sea parrot – what's it called? The puffin! And the curlew – don't forget about the curlew! I want bearberries and alpine speedwell and glacier buttercups and dwarf willow. Did you know that the dwarf willow was a bush even though it didn't grow more than five centimetres high? Or was it you who told me that?'; 'Do you know what I want? Shall I tell you? I want a million plants and animals to come back from extinction. No more, no less, Nana. I want to drink clean water straight from the tap. I want to go fishing in the river. And I want this clammy winter weather to end'* (Gaarder, 2016, p. 36-37). The old woman's ring, which she received on her sixteenth birthday, then plays an important role. She believes that the ruby ring has miraculous power. In part, the author also shows understanding between generations: *Anna and grandmother are friends now. Nana was sixteen once, too. Who hasn't been?* (Gaarder, 2016, p. 38). The granddaughter and her grandmother talk about how they could turn back time, make contact with their ancestors and warn them against plundering nature. In addition, Nova wants to return rock owls, otters and bluegills and their environment: *'And their habitats too? There's no use saving the animals two by two. Plants and animals must have something to live off, they have to thrive, so the rainforest must be restored, the acidification of the sea must be reversed, the mountain temperature must be brought down a few degrees, and the African savannah must be watered'* (Gaarder, 2016, p. 40). Anna considers the awakening from a dream as a miracle that gave the world and nature a new chance.

The story is made special by newspaper articles, encouraging readers of the story to think about the issues of the past and especially the future: *An important basis of all ethics has been the golden rule, or the principle of mutual respect: do to others as you would have them do to you. But the golden rule can no longer only have a horizontal dimension – in other words a 'we' and 'the others' We are beginning to realise that the principle of mutual respect also has a vertical dimension: do to the next generation as you would have had the previous one do to you. It is that simple. You should love your neighbour as yourself. Which, naturally enough, should include the next generation. It must include absolutely everyone who will live on this earth after us. All of mankind does not live at the same time. People have lived here before us, some are still living here now and some will come after us. Those who come after us are our fellow humans too. We have to treat them as we would want them to have treated us – if they had been the ones who had inhabited this planet first* (Gaarder, 2016, p. 46).

Elements of philosophical topics are also contained in the school work written by Jonas (Anna's boyfriend), for example in the sections: *But man as a species has been so successful that we are threatening our own existence. We have achieved so much that we are threatening the existence of all species* (Gaarder, 2016, p. 117) and *To restore the planet's biodiversity, we would need a Copernican shift in our thinking. Living as though everything revolves around our time is as naïve as thinking that everything in the sky orbits the earth. But our time is no more significant than any time to come. Of course our time is most significant to*

us. But we can't live as if our era is the only one that matters. (Gaarder, 2016, p. 118). The topic of the future is solved in many questions of the main characters: *'Weren't we wasting resources that coming generations could use? Weren't we letting batteries go flat when they should last much longer?* (Gaarder, 2016, p. 55).

The plot represents a reflection on the relationship between reality and fiction *'In the past Anna had been introduced to people she had never met in real life but had seen in her dreams. She had learned it was wise not to bring that up early on'* (Gaarder, 2016, p. 62) and *'But what if her dreams are real?.. What was consciousness? And what were dreams?',* even in the speech of Jonas, for example: *Wow. Even I'm beginning to believe your dream* (Gaarder, 2016, p. 112).

The story also has a value dimension in another area, e. g.: *She wasn't really following watching a TV* (Gaarder, 2016, p. 11). It can also be inspiring for the reader that the main characters like lectures, in one of them the reader can meet with philosophical thinking about time: *What is time? Time can be seen from many perspectives: firstly, the perspective of the individual, then that of the family, then that of culture and written culture, and then what we call geological time* (Gaarder, 2016, p. 75). Questions of a philosophical nature also concern animals in the story: *How would it feel to be inside the head of a deer? Would it feel different from being in the head of a camel?* (Gaarder, 2016, p. 94) or: *The animals swing nervously behind the netting and stare at her through yellow-brown eyes. She wonders how much they understand. She is sure they understand more than they can express* (Gaarder, 2016, p. 115). Other ecological problems are mentioned in the book, such as the felling of rainforests, illegal hunting, but in connection with the protection of animal species, the author uses a broader context: *To save the tiger you have to save a long list of plants and other animals. The tiger is a symbol of something much larger, and if the tiger disappears it is a very bad sign indeed... Everything in nature is interconnected. Biodiversity is as much about the tapestry of nature as the survival of individual species. Species which have lost their natural habitats and only survive in zoos are just one step away from extinction* (Gaarder, 2016, p. 124-125).

Another character, Jonas, had ideas, which he formulated through a paper in which there were some interesting ideas: *Are people really that bothered about nature? Haven't we turned the earth into a big theme park? Too many things are competing for our attention. We share a planet, but not everyone can think in terms of our planet* (Gaarder, 2016, p. 127-128). Anna deals with other philosophical issues: *'What is a human being? And who am I? If I was only myself – the body sitting here and writing – I would be a creature without hope. In the long run, that is. But I have a deeper identity than my own body and my short sojourn on Earth. I am a part of – and I take part in – something greater and mightier than me* (Gaarder, 2016, p. 152).

The dimension of the community's strength is also emphasized: *The problems are so big that people feel powerless. What can I do to save the Amazon rainforest? What responsibility do I have for the African savannah or Atlantic fish stocks? People do not think like this. It's not how our brains work. We are arrogant, selfish animals. In any attempt to save our planet we must use this as the starting point* (Gaarder, 2016, p. 123). Although the story depicts possible catastrophes and is negativist in some parts, it ends with a hope for a better future:

- *'Are you an optimist? Or are you a pessimist?'*
- *'I don't know. Perhaps a bit of both. What about you?'*
- *'I'm an optimist, Jonas. And do you know why? I think it's immoral to be a pessimist.'*
- *'Immoral?'*
- *'Pessimism is just another word for laziness. Of course I worry. But that's different. A pessimist has given up. We can't give up hope. And in practice that might mean we've got to fight. Do you want to be part of that, Jonas? Do you want to start a fight?'* (Gaarder, 2016, p. 168-169).

Anna's attempt to change the world for the better may inspire more people and that was probably Jostein Gaarder's intention.

4 Conclusion

Gaarder's book acts as a warning from the future for the current generation, and although it was first published in 2013, it can still be an inspiration to improve the environment at various levels. The motivation for writing this article were some moments of the book, which already concern the life of the present, for example when the numbers of bees decrease every year: *'In the garden her mom and dad are both on step-ladders hand-pollinating the fruit trees. Bees are a thing of the past. Their numbers started to fall a hundred years ago for a variety of reasons. Then, all of a sudden, they died out completely. Now people have to do by hand the painstaking work performed by billions of bees'* (Gaarder, 2016, p. 82).

The purpose of Anna's dream was to give the world a new chance, and that was probably the point of the book. Gaarder does not underestimate reader of this book, in addition to philosophical elements, he also inserts love and mystery into the story, he encourages to think more deeply, but at the same time it is written in an understandable and clear language. Although we focused on environmental issues in the interpretation, the book also contains a storyline about love, common school and family problems, so we think the story is suitable not only for readers who are primarily interested in nature. We cogitate the opinion of Pelikán (2011) who considers maintaining sustainable development as a serious problem in today's society. The mentioned author deals with the difficulty of finding a balance between economic development and at the same the protection of natural resources. He considers the fight for sustainable development to be one of the global trends in social changes, influencing new reflections about the character of education.

Literary stories of similar nature are not probably aiming to change the whole world, but they can change the whole world, but they can change the view and behaviour of individuals in relation to our planet, in an education environment all the more if the teacher cares about this issue. The book *The World According to Anna* provides a space for philosophical inquiry on environmental issues and also fulfils the aesthetic function of an artistic text, so the teacher may have several options for working with this specific text. One opportunity may be to spark a discussion about a defined issue. The discussion could be conducted according to the methodology of the Philosophy for Children program. In this program, participants read a philosophical literary text with philosophical topics, ask philosophical questions and then discuss according to established rules. A significant element of the story is a letter written by the main character Anna, so the teacher could include the activity 'Letter for my grandson or granddaughter' in which pupils could address the following points: 1. Write what you like on our Earth and what you want your grandchildren should see or experience. 2. Write down what you are doing for nature protection and sustainability now (even the minimum) and what could you improve.

Zapf (2016) in connection with sustainable development expresses the idea that literature and art can comprehensively support the concept of sustainable development. This author argues that artistic literary texts in relation to sustainability are rarely published, but represent the potential for improving the future of ecological thinking. We hope that similar contributions to raising awareness of sustainable development will attract the attention of scientists and teachers and inspire them to educate pupils to understand the problems of our planet, lead them to become critical thinkers and people who experience social, emotional and economic well-being, but also they are aware of how ecology can affect their lives and the lives of their descendants.

Literature:

1. Gaarder, J. Anna. *Príbeh o klíme a životnom prostredí*. Bratislava: Albatros. 2014. 192 p. ISBN 978800036625.
2. Gaarder, J. *The World According to Anna*. London: The Orion Publishing. 2016. 224 p. ISBN 9781780229188.
3. Huba, M. Trvalo udržateľná ekonomika II. In *SLOVO*. [online]. 2004. [cit. 2020-12-17]. Available at: <http://www.nov.eslovo.sk/node/26685>
4. Kollárová, D., Karasová, L., Nagyová, A. Literary Text and its Integration into the Educational Content of the Subjects of Elementary Realia. In *AD ALTA: Journal of Interdisciplinary Research*. 9 (2), 2019. p. 114-120. ISSN 246-6733.
5. Lipovetsky, G. *Paradoxní štěstí. Esej o hyperkonzumní společnosti*. Praha: Prostor, 2007. 448 p. ISBN 978-80-7260-184-4.
6. Pechočiaková Svitačová, E. Education Focused on Eco-literacy – The Way to Transform the Economy onto Sustainable. In *AD ALTA: Journal of Interdisciplinary Research*. 10 (1), 2020. p. 282-288. ISSN 246-6733.
7. Pelikán, J. *Hledání těžiště výchovy*. Praha: Univerzita Karlova v Praze, Nakladatelství Karolinum, 175 s. ISBN 978-80-246-1265-2.
8. Pintes, G. „Oko-mese“ és gyermekfilozófia. In *A mese interdisziplináris megközelítései 2*. Budapest: ELTE Eötvös Kiadó, 2020. p. 24-24. ISBN 978-963-489-195-6.
9. Špirko, D. *Základy environmentálnej filozofie*. Bratislava: STU, 1999. 148 s. ISBN 80-227-1232-9.
10. Zapf, H. 2016. *Literature as Cultural Ecology: Sustainable Texts*. London: Bloomsbury Academic. 2016. 301 p. 9781474274654.

Primary Paper Section: A

Secondary Paper Section: AM

TWO ASPECTS OF MEMORY FORMATION IN HISPANIC AMERICAN LITERATURE

^aMONIKA BREZOVÁKOVÁ, ^bMAGDA KUČERKOVÁ,
^cNATÁLIA RUSNÁKOVÁ

Department of Romance Languages, Faculty of Arts,
 Constantine the Philosopher University in Nitra, Hodžova 1, 949
 74 Nitra, Slovakia
 email: ^amonika.brezovakova@ukf.sk, ^bmkucerkova@ukf.sk,
^cnrusnakova@ukf.sk

This paper has been supported by research project UGA called "Chilean and Argentine literature in exile" based on the contract n. III/4/2020 and Constantine the Philosopher University in Nitra, Slovakia.

Abstract: This paper deals with the theme of collective memory and its formation in Hispanic American literature. After the introduction to the topic, it is presented by specific literary works of Hispanic American authors, mainly the Chilean writer Isabel Allende and Argentine novelist Elsa Osorio. Both of the authors deal with the theme of memory which we try to illustrate with concrete examples from their literary works.

Keywords: Memory, Hispanic-american literature, oral culture, testimonial narrative

1 Introduction

Colombian novelist Gabriel García Márquez (1927 - 2014) presented the first part of his memoirs called *Vivir para contarla* (2002; *Living to Tell the Tale*, 2003) with the following words: "Life is not what one lived, but what one remembers and how one remembers it in order to recount it."¹ (2014, 7) Since he is one of the most famous Hispanic American authors, the epoch-making story of the Buendía family from the novel *Cien años de soledad* (1967; *One Hundred Years of Solitude*, 1970) does not need to be presented. The autobiographical narrative constructs for the readers of his memoirs at the end of his life that clearly reveals the meaning and creative potential of memories: his native village of Aracataca, as we learn there, became the model of the famous Macondo, a literary micro-world that in the form of a synecdoche evokes the history of Colombia as well as the other Hispanic countries. In this forgotten Caribbean region originates the fruitful García-Márquez tension between the tragic and comic aspects of life or between real and miraculous elements, that is also the source of oral culture carried by distinctive female characters, symptomatically immersed in the author's work. These women are full of magical skills and a sense of rituals, with an extraordinary ability to communicate with invisible world, the women as storytellers and founders of oral tradition, as well as the women representing the indigenous world.

This brief outline of Gabriel García Márquez's poetics, realized at the edge of the author's biographical narrative and the fictional world of his prose, allows us to state that literature is an impressive, creative space for the renewal of memories and the memory constitution. The oral history of communities and nations clearly confirms that remembrance has always been something natural but also necessary for a human being. Therefore, it can be argued that "[memory] is [...] one of the basic characteristics of humanity and the basis of our existence continuity." (Maslowski - Šubrt, 2014, 7) That is also shown by various forms of thinking about this topic, recorded from Antiquity: Plato developed the concept of memory paradox and within it identified the ability to present things in the human soul; on the other hand, Aristotle thought about the differences between memory and imagination.

The theme of memory and imagination found its specific expression the Middle Ages, mainly in the Italian Medieval literature. The poets were inspired mostly by their physical separation from their beloved ones where the memory, and imagination helped them to make such an object present and real

(Pamulová Šavelová, 2019, 53n)². The Italian Renaissance tradition left a deep footprint in the development of literary tradition and evolution of literatures, written in Spanish language³. It has founded the concept of literature as an alternative or substitute reality respectively as a willingness intentionally aimed at memory creation. Francesco Petrarca (1304-1374) in his poetics of remembrance (*poetica delle rimembranze*) followed the medieval line of thoughts and set the basis of interiorisation poetics, lived or thought reality in the poetry, where such reality was sensually lived or mentally and spiritually conceived. His experience of individual, subjective memory expressed in autobiographical notes has gradually become a collective one.⁴ The concept of writing as creation of an alternative reality was reinforced and perfected by the Classicist poet Giacomo Leopardi (1798 – 1837), where he did not bear in mind the reality sensually perceived by a person, but the reality to which is his intelligible and emotional willingness of a human wanted to be projected even in retrospective direction.⁵ Based on the mentioned concept, the literature has been for centuries perceived as a willingly conditioned creation of an alternative memory, an individual or a collective one. A very similar approach in the thoughts on memory was manifested by Henri Bergson (1859 – 1941) when he developed "*élan vital*", the concept of the life principle⁶, as a force, immanent to all living creatures, in organising the structure and evolution of all forms of natural life, the human life and existence included. Bergson explains this principle as inherent to consciousness of every man, thus to consciousness and awareness of the inner time passing, which he conceives as an interiorized life realization.⁷ In this way, Bergson deepens the Schopenhauer's postulate on independent existence of a will-to-live and transposes it to the philosophy of the life realising principle. The psychoanalytic approach, widely applied in late 19th century in philosophy and literature, has led in the French (or Parisian) ambience to the formulation of the so called selective-memory concept: active creation of own consciousness, using of will which from the memory selects the reality of its own interest. Such attitude of consciousness is naturally

²The analysis and interpretation of the imaginative processes in the work of Medieval Italian poets, Francesco Petrarca included, as explained in the work of ŠAVELOVÁ, M.: *Dante, Boccaccio, Petrarca*. Nitra: UKF v Nitre, 2020. 124 p. ISBN 978-80-558-1598-5.

³The influence of Italian literature on the American colonial culture is documented in the work of Bellini, G.: *Presencia de la literatura italiana en la América hispana de los siglos XVI y XVII*. Alicante : Biblioteca Virtual Miguel de Cervantes, 2008. Retrieved from: <http://www.cervantesvirtual.com/nd/ark:/59851/bmnc01n1>

⁴In his poetics of interiorization he focused on the reality of love emotion, which was transposed by its spiritual form in verses, thus the literary reality had become the second face of the same love reality. Compared with the Medieval and Pre-Renaissance authors, Petrarca was able to identify the theme and its verbal expression into one unit, so the poetry itself was able to evoke the images of the beloved one, the memories or projections of future (Šavelová, 2020, 91-93). In *Canzoniere*, the collection of poetry, he was aiming to put such a memory into a perfect stylistic and composition form, making it objective by establishing the topicality and motives of his inner spiritualized emotion. His autobiographical notes were poetically transposed to love poetry with distinguished, extraordinary form that it later became a poetic style manner. The theme of the impossibility to handle or impossibility to conceive the present moment, always in fugue, possible to be expressed only through the memory, provoked the fight in poetry for a stable and fixed external form, as it was believed that only such a form is capable to preserve the memory and make it objective. Ref.: Petrarca, 2018 a Torre, A.: „Lege memoriter“. Petrarca e l'arte della memoria. Ref.: *Lettere italiane*, vol. 56, num. 1. Leo Olschki, 2004, pp. 12-49. ISBN 978882262790.

⁵Leopardi's concept of remembrance (*ricordanza / rimembranza*) was legated first of all to the poetry, but in the modern age it penetrated into some other disciplines, i.e. to psychology. Ref.: Polizzi, G.: *Leopardi e le «ragioni della verità»*. *Scienze e filosofia della natura in Giacomo Leopardi*. Roma: Carocci, 2003. pp. I-xix, 1-288. ISBN 88-430-2818-9. For Leopardi, in the time of writing *Canti*, the absence of real time, or the human incapability to live it contemporaneously with its passing, was the confirmation of human mind's incapability to conceive the infinity (*l'infinito*), which it can perceive only as an indefinity (*l'indefinito*). Infinity is for Leopardi an astral time analogy of terrestrial time passing and of the being of the single forms in it (Rusnáková, 2012).

⁶Ref. Bergson, 1908.

⁷Bergson's theory can be found also in the poetic work of Giuseppe Ungrethi, the Italian poet of the first half of the 20th century, who conceives and expresses time as an inner fact and element, perceivable only by intuition. There is no objective time, we can admit only the existence of consciousness of the individual living and being, an individual's inner, personal time. The feeling of the end of historical time and period stands in the centre of almost all modern avantgardes influenced by the phenomenological thought. The phenomenology, in an ontological way, identifies the concrete historical moment, with its perception within the human consciousness. Ref. Rusnáková, 2009.

¹ Unless it is not stated in the bibliography, texts published in the Slovak, Spanish and in the Czech language are translated into English by Monika Brezováková.

reflected in the literary narrative⁸, affected not only by selective recollection, but also by specific frames of reference (time, space, language) in which the individual moves, or how a person realizes himself. The aspect of the social conditionality of memory was pointed out by the French philosopher and sociologist Maurice Halbwachs (1877 - 1945), who was influenced by the theory of collective consciousness by Emil Durkheim (1858 - 1917): "Memory is constituted and functions and reproduces in certain social frameworks that are created by people, living in the society." (Lehmann - Maslowski - Šubrt, 2014, 17)

Both 20th and 21st centuries have brought several new and undoubtedly inspiring theoretical considerations seeking to conceptualize the memory phenomenon, and within their context the terms of cultural memory (J. Assmann, P. Nora), Cosmo lithic memory (D. Levy, N. Sznajder) or multidimensional memory (Michael Rothberg)⁹ are considered. We decided to grasp the interpretation of selected aspects depicting the topic of memory in Hispanic American literature on the background of literary and cultural-theoretical works illuminating the collective memory phenomenon going hand in hand with individual memory phenomenon. According to Halbwachs (2009, 50) he himself is the first witness to whom a person turns to during remembering, only then the process of remembering becomes a meeting of two people: one who perceives and testifies to what is seeing at a given moment, and the other who forms an opinion based on the statement.

2 Memory in the context of oral culture

The collective unconsciousness of the Hispanic American community is directly linked to the autochthonous past and experience of the mestizos within the individual regions of the Central and South American continent. In particular, the national literatures represent one, internally differentiated local picture of what is universally valid for Latin America - an immediate, fruitful connection with the tradition of oral character where narration creates the core. The mentioned resource was not exhausted by the arrival of technological achievements of the (post)-digital age but it was still activated by writing, and the original existence in contemporary literary discourse is evidenced by the work of authors during 20th century. "Activating the coexistence of oral and written expresses not only literary language drawing on communicative liveliness, tonality of oral expression, its distinctive symbolism and metaphor, but also the overall composition of the work: living plotting, the presence of rituals, archetypal characters, poetics rich in sensory stimuli. The coexistence of oralism (as an old way of talking) and audio-visual media (as a new way of talking) has also resulted in the development of a specific genre in the Latin American environment - radio broadcasts and soap operas." (Kučerková, 2011, 87).

The depth of semantic constitution of memory in Hispanic America pars pro toto is illustrated by the Paraguayan writer Augusto Roa Bastos (1917 - 2005). In the essay *Oral Culture (Una cultura oral, 1988)* he shares the experience of writing fictional stories in which he develops an imaginary substance, but that is not possible without the contact with reality, "of all possible forms of reality, even that which has not been yet, or which has already ceased to be" (Roa Bastos; Housková, 2004,

273). Writing in the region where the culture was formed on the bedrock of the mestizos, more precisely the living presence of indigenous components necessarily presupposes their creative processing at various levels, but in the terms of memory, are especially related to meanings, carried within the individual life story but also in the national community context. "I have always been convinced that in order to be able to write stories in Paraguay, the first is necessary to read, or better said to listen to an unwritten text; thus before I start writing, I will be able to perceive and listen to the sounds of oral speech, unformulated but always present in the tones of memory. [...] These living sediments of mother tongue, inherited from ancestors, allow a new semantization and the appearance of new meanings when changing them into the scriptures, it is a text in which man does not think, but which "thinks" of man, as it is the case of language or history in general." (273-274)

Returning to the introductory words on the creative reach of remembering in the authorial style of Gabriel García Márquez, the oral culture proves to be essential in shaping the narratives of personal and collective identity in the Hispanic American cultural environment, with memory being an important constitutive element. Together with Aleida Assmann, who defines memory beyond the medium nature that preserves information, our study does not think of the memory in literature only as of the space in which the memories are organized into a special poetic and narrative form, but primarily understood as *vis*, as "an immanent force associated with imagination and reason" (30, 2018; Hromová Burcinová, 2019, 139). Thus, in the process of writing it can be interpreted as a life-giving energy, that by the words of the Argentine novelist Elsa Osorio (Goldkorn, 2014), it has "the power to bring life back to the lost [*desaparecidos*]", to overcome fear, find the truth or create the future.

However, at the level of personal and individual survival, such notions of creation can also represent a common effort to understand life or simply not to forget, or as the Chilean-American writer Isabel Allende claims, to nurture the roots "that are no longer set in any geographical location" (Correas Zapata, 1998, 16).

Allende's book of essays *My Invented Country (Mi país inventado, 2003)*, published a few years later than her interview with Celia Correas Zapata, confirms the rooted (conscious and unconscious) need to revive the faded, and transform it into something vital, give the sense to unrest, uncertainty, unclassification, abnormality, unhappiness, the circumstances of life, etc. It permeates the social, political, cultural-anthropological, sociological history of Chile, as well as own, intimate story of I. Allende. It is the vision of country, created by memories, but furthermore it can be understood as a metaphor for memory. As blurry as it may seem ("Things that happened in the past have fuzzy outlines, they're pale; it's as if my life has been nothing but a series of illusions, of fleeting images, of events I don't understand, or only half understand. I have absolutely no sense of certainty."); (Allende, 2020, 132) it is a fundamental pillar of the author's literary, reflexive, reportage, or other images about Chile.

The narrative art of García Márquez, in which the daily events intersect with elements drawn from a distinctive Caribbean mentality and imagination, in a specific way "pays off an imaginary debt to all those who have shown him that storytelling presupposes continuity." (Kučerková, 2011, 51) This specific dimension of author's writing co-creates the essence of magical realism poetics, also influenced the work of Isabel Allende, and what literary critics often mentioned connected with her novel debut *La casa de los espíritus* (1982; *The House of the Spirits, 1985*). Although this poetics is not the subject of our thinking, it should be emphasized that some of its specific features can significantly help to reveal the concept of memory in verbal art. For example, "[d]isruption of the chronology of narration (retrospective) in an original way helps [...] to reconstruct both the collective memory and the individual memory. The immersion into human memories through the return to a new

⁸ Almost parallel to the literary avantgardes was the thinking of Benedetto Croce (1866 - 1952), who conceived the theory of relation between the human's inner life made of material in memory, and its literary representation. The Italian philosopher has distinguished two types of knowledge, in simple words: the knowledge in images and a knowledge in terms. Only the image is pertinent to the immediate inner life, therefore to the artistic expression, without any need of other integration or explanation discourse. Ref. Croce, B.: *Poesia e non poesia*. Bari: Laterza, 1923. The sense of literature is, according to Croce, the realisation of images, where time interferes into their interpretation by the change of the receiving and perceiving optic. Such a thought is in accordance with in that period already widely established Freud's thought, which compares the surmounting of the space between the original image and its interpretation to the suppression of the „cultural“ non-consciousness, by formatting the time-optic. Ref. Bhabha, H. K.: *Disem/Nácia: čas, rozprávania a hranice moderného národa*. In: *Medziliterárny proces VII*. Nitra: FF UKF, pp. 348-376, 2010. ISBN 978-80-8094-753-8.

⁹ Ref. Lehmann, Maslowski, Šubrt, 2014, 15.

story, which presupposes the continuity of life, is realized through the cyclicity of narration or various crossings in time schedules. The world of the living beings, under changes, is thus immediately confronted with a mythical eternity." (64-65)

Allende's poetics is characterized by a creative approach to different layers of reality, where the memory is a common thematic denominator of almost all works. The author applies the material of dreams and memories; the implementation of the indigenous element allows her to create the atmosphere of magic, miracle, mystery, but also astonishment or tension. Similarly, to the works by García Márquez, the fictional world emanates from oral culture, more precisely from folk folklore, but also from a thorough and curious observation of the surrounding world. Narration in her artistic interpretation signifies the continuity of life and the life itself: through it "shapes reality, creates and transforms the world" (Correas Zapata, 1998, 17). As she claims, the coding of a story into writing is "an organic need, like a dream or motherhood. Talk and talk ... is the only thing I want to do". In this way, she simultaneously fulfils the words of H  l  ne Cixous from the manifesto *The Laugh of the Medusa* (1975): "A woman must be written down: she must write about women and she must lead women to write[...]. A woman must incorporate herself into the text - just as she must incorporate herself - on her own initiative - into the world, into history" (1995, 12; Cvikov  , 2014, 123).

Writing about women, in Allende's works about the beings from different worlds, is an artistic reconstruction of the collective memory co-created together. The author sought for inspiration and impulses for the magical side of her story from the narrative of oral culture: her grandmother taught her to interpret dreams, her mother taught her to look at events from behind and look at people from inside, the maids in her grandfather's house initiated her into the world of myths and folk legends and they also taught her to listen to radio series (cf. Correas Zapata, 1998: 16). This memory, which extends to the collective unconscious, is realized in the novel by the character of nurse Nana, who deals with the family problems in a way that is superstitious in her mind, but also in the unusual beauty of Rosa and her almost destructive effect on men, in the extraordinary large tablecloth with motifs of unseen mythological animals, which Rosa embroiders, but also in Clara's ability to predict the future, communicate with the next world or even live after death. Clara and Rosa from *The House of the Spirits* move very naturally between materialized reality and the misty, vague world of some supernatural nature. The "miraculous" memory and smell, discovered by Eliza Sommers in the novel *Daughter of Fortune*, thanks to the indigenous cook Mom Fresia and her impulse, are a subtle part of the whole story on the search for freedom. Although at first glance Aurora del Valle, the main character of *Portrait in Sepia*, is a more real character, the ability to capture things that pass through the camera lens also transports her to another reality layer, the layer of senses, sensations, memory that reveals the most hidden desires of a human soul. The presence of oral culture in literature is also useful regarding the concept of folk memory (*memoria popular*), which reflects the encounter of the archaic with the new, the traditional with the modern. Gabriel Cocimano (2006, 24) brings closer the context of Latin American oral tradition: this ancient memory coexists with new narratives, while oral codes bring to life, reconstruct a strong sense of community (among heterogeneous folk sectors). From that point of view, orality can be therefore understood as an important part of the collective memory and as the 'primary cultural experience of majority' (24) but also as a constant phenomenon with a strong identity, which was confirmed in her relation to scripting culture and in response to the challenges of modern digitization.¹⁰

¹⁰ However, the radio novels also accompany the characters in the novel *De amor y de sombra* (1984). Rosa, a cook and babysitter with indigenous roots, through them learns how difficult and painful is the path to happiness (cf. Allende, 1992, 19); for Digna Ranquileo, from night to night they become an imaginary journey into a distant and unknown world that this rural woman understood only a little (22).

3 Memory and Testimonial Narrative

Aleida Assmann reflects on literature in the background of social and historical scope, especially pointing out the ability of literature to thematize what has been forgotten and what has not been deliberately taken into account, what attributes her the ability to seek and create new narrative processes and, through them, to reflect the traumatic experiences of the past. Italo Svevo (1861 - 1928), the Italian novelist quoted by this German theorist, associated the past with a surprising attribute. According to him, the past is always new: "as life progresses, the past changes because those parts of it that once seemed lost in oblivion come to the surface, and others disappear [because they are no longer important]" (Assmann, 20, 2018). Svevo's words confirm the one's memory being an important and current key for looking at memory.

In the history of several Hispanic American countries, and smaller communities within them, such as families and then their individual members, the experience of dictatorship resonates through this prism. Literary texts are a medium that allows the event of a dictatorship to be reflected, to make people aware of forgotten stories, to preserve the memory of those who have been relentlessly lost, to appeal to future generations so that the tragedy of the past would not be repeated. However, as Tzvetan Todorov claims, "the past as such will not teach us a lesson. [...] The act itself is not an impulse to learn any lessons. We are those who give sense to the events, when we incorporate them in a broader context, when we ask questions, when we give some value to them ... This is how we can express an opinion." (Mattis, Todorov, 2007). A person, a group of people and a nation can change the angle of view on a memory, namely based on will, need or reason, they may want to remember it as part of their history, more precisely life story, or even displace it. At that time, according to Aleida Assmann, memory affects their individual or collective identity (cf. Hromov   Burcinov  , 2019, 139).

The testimonial narrative, which was developed in Hispanic American literature in the mid-1960s of the 20th century, and which has a relatively hybrid character in terms of genre, is basically viewed by one unequivocal opinion, which as it comes from its attribute is connected to the narrative, and moreover it contains the confidence in the power of literature. According to Argentine prose writer Elsa Osorio (1952), "literature [...] can touch the truth more deeply than direct testimony." (Goldkorn, 2014). Language further "helps us to formulate concepts, imaginations about absent things, about the past and the future" and literature, for which it is a creative tool, can and should be the space for social dialogue, a signal of truth, "a means of justification and criticism, beliefs and attitudes" (Maturkani  , 2018, 77).

The testimonial narrative strengthens the memory of the community. According to Halbwachs, confidence in the accuracy of memories is bigger if except for our own memories, we can rely on the memories of other people: "As if the process of remembering is reinforced by the fact that the same experience is again experienced not by the same person, but by more people at the same time." (2009, 50- 51) Although people may experience and remember different situations in relation to the same event, the act of 'collective thinking and remembering' (51) is proved to be important.

Astrid Erll summarizes several functions of literary texts when researching the relationship between collective memory and literature: "They fulfil a multitude of mnemonic functions, such as the imaginative creation of past life-worlds, the transmission of images of history, the negotiation of competing memories, and the reflection about processes and problems of cultural memory." (2011, 144) Similarly, Brigit Neumann argues that memory and remembrance processes have always been an important, if not dominant, topic in literary work: "Numerous texts portray how individuals and groups remember their past and how they construct identities on the basis of the recollected memories." (Erll, N  nning, 2008, 333)

José Miguel Oviedo in *The History of Hispanic American Literature. From Borges to the present*, gave a suggestive title to one subchapter *Disappearances and the Dead: A Tragic List* mapping the literary events of the last four decades of the 20th century. At the very beginning, he mentions that politics in the Hispanic American environment has always tended to intertwine with intellectual life and for many, also important authors (eg García Márquez, Vargas Llosa, Fuentes) it did not remain only on the level of difficult matters, but touched them personally, as well as touched national communities in the form of exile, imprisonment, torture and death. Naturally it influenced the creative process, as these were obvious forms of silencing (2005, 434).

Isabel Allende and Elsa Osorio, in their literary works from exile, dealt with the topic of dictatorship in their countries of origin. Neither of them did not come from the lived experience, although both were inspired by real events in Chile and Argentina. Their narratives take the form of fiction in which the authors become the voice of the silenced and the “memory of the forgotten” (Oviedo, 2005, 373), or, as Allende claims, the voice “which speaks for those who in our earth suffer and are silent” (1985: 451). In that the prose writer Allende also sees the sense of literature (Correas Zapata, 1999, 17) and in her work she tries to fill it by thematising the issues of gender and other marginalization.

Allende's novel *The House of the Spirits* describes the circumstances of the fall of Salvador Allende's government, the novel *Of Love and Shadows (De amor y de sombra, 1984)* is the memory of so called “*desaparecidos*” (lost victims of the regime) during the dictatorship of General Augusto Pinochet (1973-1990). Based on the facts and in the background of the love story of two young people, the writer describes the atrocities of the Chilean dictatorship - fear for the missing people, torture, revelation of illegal cemeteries, confirming the cruelty of the military government. The novel *The House of the Spirits* made her to join the most important Chilean “resistance” novels (González-Ortega, 1999, 204), inspired by the military dictatorship: *Diary of a Chilean concentration camp (Tejas verdes, 1974)* by Hernán Valdés, *A House in the Country (Casa de Campo, 1978)* written by José Donoso and the novel *For the Fatherland (Por la patria, 1986)* by Diamela Eltit. Osorio's novel *My name is Light (A veinte años Luz, 1998)* brings the reader closer to the events of the last Argentine dictatorship, which began in 1976, when was the political power in the country taken over by the army and the country began the so-called the process of national reorganization (Proceso de Reorganización Nacional) led by General Jorge Rafael Videla.¹¹ Osorio, dealing with the theme of dictatorship, also integrated the group of the Argentine authors who developed the theme of dictatorship before her (authors as Ricardo Piglia, Juan José Saer, Angélica Gorodischer, Griselda Gambaro) and almost simultaneously with her, i. e. in the eighties and nineties of the 20th century (e.g. Alicia Kozmeh in the novel *Steps Under Water - Pasos bajo el agua, 1984*).

In the context of genre typology, as it was developed by Nelson González-Ortega (1999, 204), and based on certain specific features that emerge from the novels *The House of the Spirits* and *My name is Light*, it is more appropriate to define them as symbolic prose with elements of testimony. These are, in essence, fictional works in which the reliability of the narrator is difficult to examine, in contrast to the autobiographical narrative, where an act of legitimacy applies “to confirm whether textual references correspond to the facts” and subsequently, “in case of agreement, the truth of the story, sincerity of narration and at the same time the reliability of the narrator is recognized” (Görözdi,

2013, 31). Nevertheless, the personal commitment of the authors, their personal attachment to the topic, its internalization, and thus the place of their own story in it, leak from these works. The way in which the subject of memory is creatively grasped is undoubtedly determined by the chosen perspective of narration about what was, “at least the perspective of the present tense, [because] the narrative about the past contributes to shaping the future” and shaping personal identity” (Görözdi, 2013, 32). These narratives can be understood as a part of a larger historical narrative, composed of the testimonies of others, and represent “one form of oral history and humanitarian journalism” (Oviedo, 2005, 373).

The story of the family of Truebas from Allende's *The House of the Spirits* is an allusion to the dictatorial regime in an unnamed Hispanic country that can be easily identified through a description of political and social history (so-called haciendas controlled by the powerful hand of the oligarchy, the first agricultural reforms, the victory of Salvador Allende, a military coup supported by the opposition and foreign countries, but also thanks to references to the “poet” (Pablo Neruda) or the “president” (Salvador Allende). However, the reader perceives the story primarily as an impressive narration about the family of the landowner Esteban Trueba, into which - especially in connection with female characters - magic, symbols, and also that supernaturally and that irrationally enter in symbiosis with everyday reality. As it is typical for Allende, the female characters represent a hidden, unbridled force capable of changing history. In *The House of the Spirits*, the belief in a better future is also evoked by the semantic motivation of the choice of female names - Nivea, Clara, Blanca, Alba. They come from one synonymous series: whitishly pure, clear as the dawn of a new day that gives hope to the individual and society. The opening sentence of the novel *The House of the Spirits* is emblematic, written by Clara as a child into her notebook, a character with the ability to anticipate the future: “Barrabas [an animal of mythological proportions] came to us by sea...” (Allende, 1986, 11) This sentence is the point at which the narrative begins and to which returns by Clara's granddaughter Alba. Narrative as the flow of life thus closes cyclically.

In the novel *My name is Light*, Elsa Osorio artistically contemplates the tragic chapter of Argentine history, focusing not only on the history of the nation, but also on the personal, more precisely, individual history. The central theme of the novel against the background of socio-political events in Argentina is the trajectory of recognizing one's own identity, which the main character Luz lost as a result of the cruel practices of the dictatorship - shortly after her birth she was kidnapped and placed in a regime supporter family.

During drafting the story, the author relied on real events: the regime's violence had no regard for pregnant women and children.¹² In the story about young woman Luz, who searches for her biological mother, Osorio discusses - on a universal level - the pain-broken but at the same time powerful voice of relatives demanding information about lost family members, as well as the role of human rights organizations that helped them. Her novel includes *The Mothers of the Plaza de Mayo* (Madres de la Plaza de Mayo) as a collective protagonist, who began to gather in protest every Thursday in front of the government building, from which *The Grandmothers of the Plaza de Mayo* (Abuelas de la Plaza de Mayo) emerged - one of them separated from the women in the square and asked who would be looking for her grandson. Then twelve women joined her. Osorio emphasizes the importance of the organization's work in reconstructing the memory of individuals and re-establishing their personal identity, as its aim was to return kidnapped children to their original families. After the birth of her son, Luz

¹¹ The political violence of the 1970s reached such proportions in Argentina that it could not be compared to any other period of Argentine history. According to Daniel Nemrava, it was one of the most violent regimes in the country's history, resulting in more than 30 million lost people, so called *desaparecidos*, the forced exile of a large number of Argentine intellectuals and an economy on the verge of bankruptcy. (2013, 34)

¹² The abductions of new-borns were closely linked to another phenomenon of dictatorship - the disappearance of people. It was “a widespread phenomenon that is perhaps the only one to stand out from the dictatorships of the European style: the Argentine so called junta let uncomfortable people literally disappear (*desaparecer*).” (Charvátová - Mizau - Pokorný - Kazmar, 2017, 80) In this connection, Rey Tristán formulates the statement that the dictatorship in Argentina was characterized by the so-called triad by kidnapping - torture - disappearance (*secuestro - tortura - desaparición*). (Rey Tristán, 2007, 39)

is unable to get rid of the idea that her family has concealed her true origins and therefore she is driven by a desire to reveal them. In this process of searching Luz is receiving help by activist Delia, the real founder of *The Grandmother of the Plaza de Mayo*. With this, and the atmosphere that accompanies the search, the author enriches the narrative with a documentary element. In this sense, the dialogues between Luz and Delia have a strong expressive value, but the motif of friendship and co-ownership, which reflects the relationship between the two women, also has an equally important place in Osorio's literary composition:

"We became very good friends around then. I was a little ashamed the first time I went back to the Abuelas' office after the blood test, because they couldn't find a match in the database. But after Delia told me that they knew who my grandfather was, I felt much more comfortable. I didn't have to be afraid of being found or treated as if I were crazy." (2004, 330)

Elsa Osorio plastically captures the long, essential need-guided path of healing the scars caused by the cruel methods of dictatorship. It is difficult to predict the end of this journey, it has its specific folds, composed of moments of hope, but also of disappointment and feelings of helplessness.

"Ramiro told me that when he was fifteen, Marta took him to see an exhibition on children who were disappeared or born in captivity. There were photos of the missing parents and children, and birth certificates and letters, souvenirs of those mutilated lives. The thing that made the biggest impression on him, which he could still remember quite clearly, were the unisex child-size silhouettes in black cardboard with a question mark next to them, which stood for the babies born in captivity. I asked the Abuelas if they still had the photos from that exhibition and I spent hours looking for family resemblances to me. They were incredibly patient. I would point out a girl and they would say, "No, it can't be her, she disappeared in 78," or, "We know she had a boy." (2004, 342)

This narrative is set in the documentary framework by passages inspired by information about secret detention centres (so called *centros clandestinos de detención*) and concentration camps (*campos de concentración*), which Argentine society found out with the pass of time.¹³ The author reconstructs by the testimony of Liliana, the biological mother of Luz, the experience of repeated humiliation, for example the humiliation of human dignity, ruthless and calculating torture, but mainly the insecurity of survival in the detention centre, which was doubled in the case of mothers.

"because in the centre they kill you little by little, they degrade you, they wear you down, they make you feel dirty. They kill you over and over again. And if you're pregnant, well, if I hadn't been, I would be dead by now. Now I know why they only used the prod on my legs – they were trying to make sure the pregnancy went OK because they wanted my child to be healthy to give to Dufau's daughter. He chose me, the dirty bastard, the murderer. [...] I've gone through some horrific things and I've met a lot of Pilóns along the way. Like the one who shoved us to the ground and kicked us. "Not this one," he said to the other bloke, and picked me up, but they left Sofi black and blue and covered in burns from the electric prod. Or the other Pilón, the one who brought us some cider and then while we were drinking it knocked the glasses out of our hands and starting screaming at us and beating us. They're sadists and monsters. Miriam, you can't stoop that low." (2004, 80 – 82)

¹³ In the Argentine detention centres, kidnapped people were held in the dark, they were handcuffed, naked, with a hood on their heads and during an interrogation, in which torturers tried to obtain information about other suspects, they practised various types of violence, such as: "Suffocation, beatings, sexual violence (both men and women were allegedly raped, according to Pilar Calveiro they were raped up to twenty times in a row) and electroshocks (mainly to the genitals) were practiced." (Charvátová - Mizzau - Pokorný - Kazmar, 2017, 80)

Among the narrative mechanisms that the novel *My name is Light* and literary works about dictatorships often use in general, in addition to allusions to the repressive regime, it is necessary to mention the retrospective on the time-space axis, the interruption of the story and the change of the space in which it takes place (in the case of Osorio's novel *Madrid - Buenos Aires*). The novel consists of three parts, which reflect three important moments, more precisely stages in Luz's life: her birth (corresponds to the year of the beginning of the dictatorship) and the last days of Liliana's life; her life with her family (year 1983), family which adopted her and which in some way represents Argentine society in the micro-space of the narrative;¹⁴ the period from 1995 to 1998, when the adult Luz identified in herself the need to know her own roots. The conclusion of the novel, which the reader follows in the epilogue from 1998, is remarkable in terms of composition. The novel ends the way it begins (the initial and final situation is the same, or at least analogous; see Všeticka, 1986, 55), and thus represents a closed, unbroken circle of events, more precisely circular type of framing, which is very similar to that used by Allende in the novel *The House of the Spirits*. The story begins with the arrival of Luz, her husband Ramiro and their son Juan at Barajas Airport: they arrived in Madrid in order to find Carlos, Luz's probable biological father. The conclusion brings Luz at the same age as at the beginning of the novel, but her search is already illuminated by new findings. At the same time, it is possible to talk about the temporal framing of the story, as the events at the beginning and end of the novel take place at relatively the same time, in 1998. Those mentioned compositional frameworks in a way reflect the process of reviving memory against the background of historical, political and social contexts of the time: "forgetting is followed by awareness, awakening, remembrance and return" (Assmann, 2018, 57).

4 Conclusion

In the literary constitution of cultural memory, which undoubtedly includes the depiction of the dictatorship theme in all its breadth and depth, the connection between personal and collective memories is confirmed. The hope is hidden in the name of Luz (Light) but also in other female names marked by the dictatorship. Further it captures a desire to find oneself, the truth about own origin and stolen identity. The meaning can be also interpreted as the light of painful knowledge that guides the character on the path and despite everything it liberates her. It is a symbolic path of rebirth, during which the told stories of thousands of people meet and pass through, to whom the dictatorship came into their life and the literature gave them the voice and restored their memory.

Literature:

1. Aletta de Sylvas, G.: Género, violencia y dictadura en la narrativa de escritoras argentinas de los 70. In: *Amerika. Mémoires, identités, territoires* – Imaginaire et réalité dans les Amériques: mémoire, identité et politique sexuelle 7, 2012 [online] [cit. 2020-11-18]. Retrieved from: <https://doi.org/10.4000/amerika.3567>.
2. Allende, I.: *De amor y de sombra*. Barcelona: Plaza y Janés, 1992. 285 p. ISBN 84-01-38208-4.
3. Allende, I.: *La casa de los espíritus*. Barcelona: Random House Mondadori, 2002. 455 p. ISBN 84-8450-388-7.
4. Allende, I.: La magia de las palabras. In: *Revista Iberoamericana*, 1985, no. 132/133, pp. 448-452.
5. Allende, I.: *My invented country*. Trans. by M. S. Peden. New York: HarperVia, 2020. 224 p. ISBN 9780063049680.
6. Allende, I.: *The House of the Spirits*. Trans. by M. Bogin. London: Transworld Publishers (Black Swan), 1986. 491 p. ISBN 0-552-99588-6.

¹⁴ In this context, María Eugenia Osorio Soto assigns the stepfather of Luz Eduardo to a crowd of naive and simple citizens, the so-called unprepared citizens (from Spanish ciudadano desprevenido) who could be easily manipulated by the dictatorship. She also characterizes stepmother Mariana, a representative of the upper social class, as restrained, representing conservative values and supporting the regime (2011, 164).

7. Assmanová, A.: *Prostory vzpomínání. Podoby a proměny kulurní paměti*. Praha: Univerzita Karlova. Nakladatelství Karolinum, 2018. 469 p. ISBN 978-80-246-3433-3.
8. Bergson, H.: *L'Évolution créatrice*. Félix Alcan, 1908.
9. Cocimano, G.: La tradición oral latinoamericana. Las voces anónimas del continente caliente. In: *Araucaria. Revista Iberoamericana de Filosofía, Política y Humanidades*, vol. 8, 2006, n. 16, diciembre, pp. 23-36.
10. Correas Zapata, C.: *Isabel Allende. Vida y espíritus*. Barcelona: Plaza y Janés, 1998. 255 p. ISBN 84-01-54105-0.
11. Cviková, J.: *Ku konceptualizácii rodu v myslení o literatúre*. Bratislava: Ústav svetovej literatúry SAV, ASPEKT, 2014. 271 p. ISBN 978-80-8151-026-7.
12. Erll, A., Nünning, A.: *Cultural Memory Studies. An International and Interdisciplinary Handbook*. Berlin: Walter de Gruyter, 2008. 441 p. ISBN 978-3-11-018860-8.
13. Erll, A.: *Memory in Culture*. Transl. by: Sara B. Young. London: Palgrave Macmillan, 2011. 209 p. ISBN 978-0-230-32167-0.
14. García Márquez, G.: *Living to Tell the Tale*. Trans. by Edith Grossman. Penguin eBooks, 2014. 496 p. ISBN 9780141917368.
15. Goldkorn, W.: Elsa Osorio: La literatura ha il potere di ridare vita ai desaparecidos. In: *La Repubblica* (Arte e Cultura), 5 maggio 2014 [cit. 2020-12-19]. Retrieved from: https://www.repubblica.it/cultura/2014/05/05/news/elsa_osorio_1_a_letteratura_ha_il_potere_di_ridare_vita_ai_desaparecidos-85284214/.
16. González-Ortega, N.: La novela latinoamericana de fines del siglo XX 1967-1999: hacía una tipología de sus discursos. In: *Moderna Sprak*, vol. XCIII., 1999, n. 2, pp. 203-228.
17. Görözdí, J.: Spofahlivo rozprávať svoj príbeh (Narativy životnej dráhy v maďarskej postmodernej románovej tvorbe). In: *World Literature Studies*, vol. 5, 2013, n. 1, pp. 31-44.
18. Halbwachs, M.: *Kolektivní paměť*. Praha: Sociologické nakladatelství (SLON), 2009. 289 p. ISBN 978-80-7419-016-2.
19. Hromová Burcinová, N.: Aleida Assmannová: Prostory vzpomínání. Podoby a proměny kulturní paměti. In *World Literature Studies*, vol. 11, 2019, n. 2, pp. 138-140.
20. Charvátová, A., Mizzau, C., Pokorný, V., Kazmar, V. (eds.): *Hrdinové porážky. Podoby současné argentinské literatury*. Praha: Univerzita Karlova, Filozofická fakulta, 2017. 231 p. ISBN 978-80-87634-70-7.
21. Kučerková, M.: *Magický realizmus Isabel Allendeovej*. Bratislava: Ústav svetovej literatúry SAV, VEDA, vydavateľstvo SAV, 2011. 184 p. ISBN 978-80-224-1211-7.
22. Lehmann, Š., Maslowski, N., Šubrt, J.: Maurice Halbwachs, koncept rámců paměti a kolektivní paměti. In: MASLOWSKI, N., ŠUBRT, J. et al. *Kolektivní paměť. K teoretickým otázkám*. Praha: Karolinum, 2014, 320 p. ISBN 978-80-246-2689-5.
23. Maslowski, N., Šubrt, J. et al.: *Kolektivní paměť. K teoretickým otázkám*. Praha: Karolinum, 2014. 320 p. ISBN 978-80-246-2689-5.
24. Matiss, V., Todorov, T.: Memoria del male, tentazione del bene. An interview with Tzvetan Todorov. In: *Eurozine*, 5 november 2007 [cit. 2020-12-19]. Retrieved from: <https://www.eurozine.com/memoria-del-male-tentazione-del-bene/>.
25. Maturkanič, P. P.: *Základy etiky. Vybrané otázky z praktické filosofie*. Terezín: Vysoká škola aplikované psychologie, 2018. 155 p. ISBN 978-80-87871-05-8.
26. Nemrava, D.: *Entre el laberinto y el exilio. Nuevas propuestas sobre la narrativa argentina*. Madrid: Editorial Verbum, S.L., 2013. 166 p. ISBN 978-84-7962-937-3.
27. Neumann, B.: The Literary Representation of Memory. In: ERLI, A., NÜNNING, A.: *Cultural Memory Studies. An International and Interdisciplinary Handbook*, Berlin, Walter de Gruyter, 2008, 441 p. ISBN 978-3-11-018860-8.
28. Osorio Soto, M. E.: De la historia oficial a la historia individual: Testimonio y metatestimonio en A veinte años Luz [1998] de Elsa Osorio. In: *Co-herencia*, vol. 8, 2011, no. 14, pp. 161-181 [cit. 2020-11-21]. Retrieved from: <https://www.redalyc.org/pdf/774/77420067007.pdf>.
29. Osorio, E.: *My name is Light*. Trans. by C. Jagoe. London: Bloomsbury Publishing Plc, 2004. 368 p. ISBN 0-7475-6161-3.
30. Oviedo, J. M.: *Historia de la literatura hispanoamericana. 4. De Borges al presente*. Madrid: Alianza Editorial, 2005. 492 p. ISBN 84-206-8200-4.
31. Pamulová Šavelová, M.: *La letteratura italiana delle origini*. Nitra: UKF, 2019. 80 p. - ISBN 978-80-558-1470-4.
32. Petrarca, F.: *Canzoniere. Edizione commentata a cura di Marco Santagata*. Milano: Mondadori, 2018. ISBN 9788804644781.
33. Rey Tristán, E.: *Memorias de la violencia en Uruguay y Argentina. Golpes, dictaduras, exilios (1973 – 2006)*. Santiago de Compostela: Universidade de Santiago de Compostela, 2007. 382 p. ISBN 978-84-9750-812-4.
34. Roa Bastos, A.: Orální kultura. Trans. by A. Tkáčová. In: Housková, A. (ed.): *Druhý břeh Západu. Výbor iberoamerických esejů*. Praha: Mladá fronta, 2004. 372 p. ISBN 80-204-1139-9.
35. Rusnáková, N.: Giacomo Leopardi come fonte ideologica delle correnti moderne del pensiero filosofico e estetico. In: *Studi italo-slovacchi*, vol. 2 (11), 2012, no. 1. Nitra: FF UKF, pp. 58-69.
36. Rusnáková, N.: La "fine del tempo" in alcune poesie del Sentimento del tempo di Ungaretti. In: Koprda, P.: *Studi italo-slovacchi VIII*. Nitra : UKF, 2009, pp. 25-32.
37. Všeticka, F.: *Kompoziciána. O kompozicnej výstavbe prozaického diela*. Bratislava: Slovenský spisovateľ, 1986. 272 p.

Primary Paper Section: A**Secondary Paper Section: AJ**

EXPLORING UNIVERSITY CAMPUSES AS URBAN DEVELOPMENT BOOSTERS AND DESIGN FLAGSHIPS IN URBAN LANDSCAPES

^aMIROSLAV ČIBIK, ^bROBERTA ŠTĚPÁNKOVÁ

Slovak University of Agriculture in Nitra, Trieda Andreja Hlinku 609/2, 949 76, Nitra – Chrenová, Slovakia
 email: ^axcibik@uniag.sk, ^broberta.stepankova@uniag.sk

The paper is an outcome of national educational and scientific project of the Ministry of Education, Science, Research and Sport of the Slovak Republic - KEGA 015SPU-4/2020 (UNI:ARCH).

Abstract: University campuses significantly influence functioning and development of urban landscapes and their quality also affects the quality of surrounding environment. This paper presents not only the issues and dimensions of university campuses, analyses of various approaches to their understanding, but also the methodology of their further study – the methodology of multi-criteria evaluation of the quality of university campuses and their potential, with respect to their future development. The study also focuses on the interpretation of the results from measurements of specific university campuses across Austria as representatives of different perspectives on the overall form of university complexes. The results reveal a comparison between the chosen Austrian campuses and the selected campus within the Slovak Republic.

Keywords: green infrastructure, urban development, urban landscapes, sustainability, multi-criteria evaluation, university campus, public space, design

1 Introduction

At present, the issue of the quality of public spaces is dealt with by a wide spectrum of the architectural community, which responds to the suggestions of local governments. In an effort to improve the current situation and due to the topicality of the subject, as well as the lack of regulations, unconceptual approaches, inconsistency and unprofessionalism, various manuals and initiatives are conceived to eliminate these negative attributes but also other aspects of "invisibility" of shortcomings in the design process of both public or semi-public spaces (Lukačovič et al., 2016). Due to their hierarchization of individual buildings, university campuses create networks of spaces with a public or semi-public character, which, along with their appearance, quality and overall visual identity, significantly affect the surrounding environment. The publicly accessible area attains a much higher level of justification in the city if it complies with the structure of the city in terms of composition and urban planning and contributes to its (cultural) enrichment (Melková, 2014). As part of the European concept of university campuses, university campuses were designed as satellites of cities close to urban structures in the 1960s and 1980s, and their immediate surroundings were gradually densified by gradual urbanization. Today, they form significant, multi-layered cultivated objects (Čibik et al., 2020) in city centers and significantly influence their operation, but also spatial, social, economic, health or visual functions (Čibik and Štěpánková, 2019). The areas are open, interconnected with the surroundings and not only are they specific and complementary types of public spaces, but they offer their space at various levels, to everyone (Sidorova et al., 2017). Defining the nature of a public space should be a primary consideration for both the designer and the client. It predetermines the direction and the overall form of a specific space and thus commits all co-creators to fulfill a clearly defined goal (Melková, 2014).

The presented research evaluates, assesses, maps and analyzes the quality and appearance of the current state of selected university campuses and describes their relationship and connection to urban structures. Within the analysis stage of the research we apply several processes that are accompanied by polyvalence. One of these processes is subjective criticism based on various evaluation criteria, but other factors also enter into the evaluation process (Moravčíková, 2013). The focus of the research is the correct form, processing and conceptual setting of university campuses. Conceptual thinking is fundamental not only for development of a plan for a constructed environment, but even more so to understand future opportunities and threats. In this respect, perhaps even more than in the past, the creative process has become a process of exploration, research of new

spatial possibilities, and examination of new methodological approaches (Rosemann, 2008). The "Research by design" method, based on such conceptual thinking – thinking by the means of design, mediates various aspects, the result of which precedes the design process, i.e. by verifying the methodology in practice. The subject of previous research has been the elaboration of a suitable methodology for measuring this quality, implementing the methodology tools into practice and carrying out measurements on various types of university campuses. The methodology tries to grasp all static and relatively constant elements of quality (Gehl, 2012) of university campuses (possibility of movement, residence, accessibility, safety, facilities, human criteria and quality perceived by different senses). The methodology consists of several attributes within four areas. Each attribute is accompanied by a detailed description, the purpose of which is to eliminate various discrepancies from the results (Kilnarová et al., 2014), as the evaluation is based on the subjective perception of space (Čibik and Štěpánková, 2019). Therefore, the characteristics of individual criteria within the methodology are simply, clearly and unambiguously formulated. The paper also focuses on the interpretation of results from measurements of selected university campuses within the European cities of Austria (Vienna, Graz, Linz) and Slovakia (Nitra), through the methodology of multi-criteria evaluation of university campuses and their potential. The research took place within the framework of a bilateral program to support cooperation between Austria and Slovakia in the field of higher education, science and research – Action Austria - Slovakia Research Scholarship 2019-2020 at the Technical University of Vienna.

2 Theoretical departures

The presented article thematically focuses on the issue of university campuses, as well as the search for their interconnection with urban structures with the intention of preserving the idea of a sustainable multifunctional part of the urbanized space. Blue and green infrastructure (Tóth et al., 2015) in cities is connected to a network of green objects that fill the gaps between existing green elements and the wider landscape that surrounds the city (Benedict and McMahon, 2006). University campuses with public spaces are places where these connections appear regularly. This poses as an added value to the city, in this case regardless of whether the campus is located within the city or the suburbs (Čibik et al., 2020). For the purpose of understanding these connections, it is necessary to describe the individual attributes that form this relationship in detail. The literature review describes the issue of the terms campus and university campus as well as the dimensions of urban spaces. It focuses mainly on approaches to the creation of university campuses and their typology, classification into various concepts and also describes the historical development of university complexes in the context of urban structures.

2.1 Definition of campus and university campus

Campus – a complex consisting of a set of buildings with a common denominator, such as property ownership (an administrative block). Recently, the term campus also appears in connection with the naming of non-school (especially corporate) areas (Šaling et al., 2008). However, this term still predominantly refers to a grouping of buildings belonging to a university, where the common denominator is the university – the rectorate (main building), faculties, dormitories, lecture halls and auditoriums, libraries, laboratories and other buildings, such as administrative buildings. The university campus also consists of recreational areas, parks, water features, gardens and other academic and non-academic facilities. The area of such campus can reach several tens of hectares. It is essential that the campus consists of a network of spaces that support the student community (Johnson, 2012) and strengthen the relationships within it (Winks et al., 2020).

2.2 Concepts of university campuses by Šaling et al. (2008), later more developed by Čibik et al. (2020)

- The American concept is represented by a continuous, compact campus, located in the suburbs or outside the city, with the character of an urban satellite and a tendency to gradually expand the campus away from the city center level, often conditioning the urbanization of city structures by building facilities for students.
- The European concept is represented by a set of buildings located in an urban, pre-existing development or a park. These tend to be university-owned buildings dispersed within the city in a disorganized manner, with vaguely defined boundaries of the campus. These are various faculties, libraries, dormitories, workplaces and others.
- The combined concept is a merger of the two above-mentioned concepts, where compact areas are created in the city center or its immediate vicinity. They are often open and connected to urban structures, often characterized as public or semi-public space. Such university campus is mostly the result of gradual urbanization in the proximity of the original satellite university campus (Čibik et al., 2020). Some concepts describe the campus as an irregular or regular formation. According to Irvin (2007), a campus is irregular if its structures are closer in character to a park - an open green area and regular if, on the contrary, it possesses the character of urban development.

2.3 Role of university campuses in urban landscapes

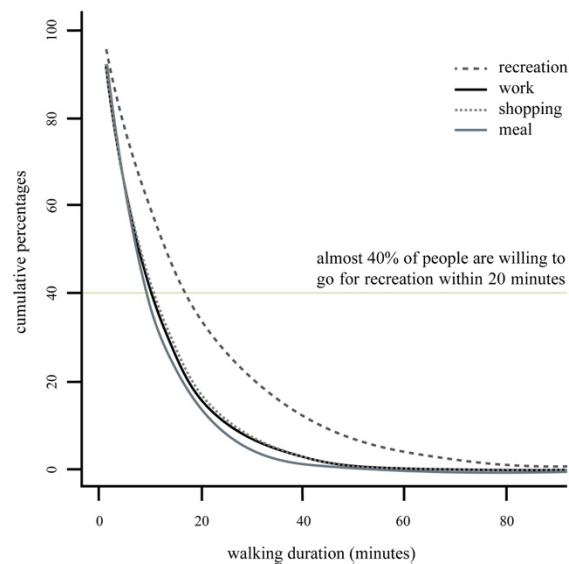
Higher education and continuously increasing job opportunities in the labor market are drawing young people to study at universities. University campuses are a consequence of the gradual expansion of universities. The influx of new students was so substantial that the spatial capacity of historic buildings in city centers simply did not suffice and the system of university buildings changed significantly, especially in the 50s and 80s of the 20th century. The term university campus is derived from the Latin term "campus" which in translation means "field" or "plain". This leads us to a deduction of how the university campuses were once conceived (in the field behind the city) and what is behind their name. Sprawling complexes became urban satellites and were the first institutions to provide education for all social classes in addition to traditional universities for the exclusive private education sector (Glare, 1982). If the individual capacities of the universities still proved insufficient, the free space around them allowed them to expand. With their own urbanization, they have often conditioned the urbanization of the city itself, and together with boarding schools and new faculties, they paved the way to creation of new housing estates for families with children, parks, schools, kindergartens and other services or institutions. University campuses have been an important part of human culture for centuries. In cities, they are often conceived on their borders, where they form a separate unit. At their borders, they create their own ecosystem and their impact on functioning, sustainability, green and blue infrastructure, and the overall appearance of the city is smaller compared to university campuses that are located in urbanized city structures, where they play their role more prominently. A university campus located in the center of urban structures and not on their edge has a greater impact, whether positive or negative, on the functioning, appearance and functions of the city than the university campus which is located on its borders. The university campus situated on the very edge of the resident area can also significantly influence the operation of the city, provided that its quality, size or importance (urban, regional, national) does not lag behind or excels over other services and premises within the city. These are predominantly university cities of usually smaller size, also known as "college cities" within North America.

2.4 University campus as a public space

The name "University Campus" in itself characterizes who its premises are intended for. People perceive the premises of the university campus, but often feel reluctant to spending time in it.

They assume that the campus is private, that it belongs to the university and not to everyone, and they do not feel comfortable entering it. Although the boundaries of the university campus must be clearly defined, it is better if they are made up of buildings and open spaces, such as walls or a fence. Within the character of the surrounding development, there is a discussion about semi-public or semi-private space, but as a final result it is always a collective space that should guarantee comfortable use for all groups of the population, regardless of age, social or cultural background and regardless of handicap (Lukačovič et al., 2016). According to Fassi et al. (2016), in addition to education, the campus also fulfills the function of a public space. The diversity of the university's premises represents the possibility of variant use of the campus through several functions. This space can also be used for various activities, such as recreational and relaxation activities. Thanks to its sports grounds, green areas, libraries, cultural spaces and concert halls, the university campus is a place of activities that are intended not only for students and staff of the university, but also for the majority of the city and region. According to graph 1 we can clearly say, that people are willing to go for recreation and the campus in the city center can be a good opportunity how to secure it. The campus can be seen as an example of how this dialogue can develop by bringing the public and the academia together. This is especially true for campuses in smaller cities, as metropolitan institutions (Bender, 1998) often face serious security concerns. On the contrary, school premises in small towns tend to be public, open and attractive and are destined to become typical urban spaces. University campuses can be characterized as public spaces if they fulfill their requirements, especially openness and accessibility (Čibik et al., 2020).

Graph 1: In July 2012, a study was published in the American Journal of Preventive Medicine, elaborated by the Center for Social Epidemiology and Population Health, which maps and evaluates people's walking distances. The graph presents a comparison of the percentage of people with the time they are willing to travel on foot due to activities such as recreation, work, shopping and eating.



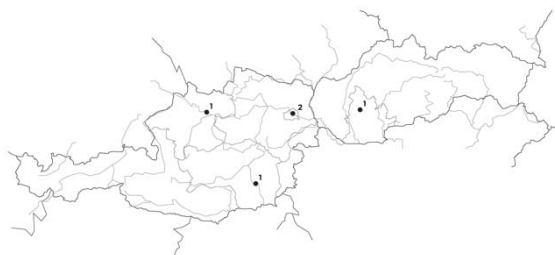
Source: Yang and Diez-Roux (2012), vectorized by authors.

3 Research background, materials and methodology

The aim of the presented research was to map the different approaches of Austrian cities to the design of university campuses, to evaluate them through various analyzes and their own methodology, and to process the results of these evaluations. As part of the research, a working database of university campuses was created, referred to as urban university campuses. For the needs of this research, the three largest Austrian cities were selected – Vienna (Vienna), Graz (Styria)

and Linz (Upper Austria). The university campuses of the University of Graz, Johannes Kepler University in Linz – JKU, the University of Vienna and the Vienna University of Economics and Business were selected for the evaluation. These spaces have been selected with regard to their focus, functioning, size and location, in order to ensure sufficient diversity while maintaining the relevance of the examples in the Central European context. The results of all measurements were subsequently compared with the results from the university campus of the Slovak University of Agriculture, where long-term research is underway.

Figure 1: For the needs of this research, campuses of the three largest Austrian cities were selected (Vienna – 2 campuses, Graz, Linz) and one campus located in Nitra, Slovakia.



Source: Čibík and Štěpánková (2020), vectorized by authors.

3.1 Research phases

- The preparatory phase: The aim of the preparatory phase was to locate and collect information from the professional literature and related documents in order to obtain the necessary theoretical perspective and orientation in the researched issues. During the data processing, consultations and discussions took place with several experts in the field of urban planning and the concept of public spaces in the form of personal meetings. After expanding the knowledge pool, the research goals were defined in the preparatory phase. The acquired theoretical knowledge accompanied the preparation of the methodology of multicriteria evaluation of university campuses and their potential. Subsequently, university campuses that meet the characteristics of the European or combined concept of university campuses and are similar in their features were selected (see chapter concepts of university campuses).
- The preparatory phase before obtaining results: During this phase it was necessary to locate the universities that were included in the work database within the city and study the available information about the university campus: area, campus plan with description of individual buildings, number of students, number of employees and others. In the case of the university campus, which was larger in size, the discussed area was divided into smaller working areas.
- The phase of obtaining results: Within this phase, selected university campuses were assessed on the basis of the methodology of multicriteria evaluation of university campuses and their potential. The evaluation was based on qualitative research methods, in particular semi-standardized and non-standardized observations and in-depth interviews, the main advantage of which is that they provide much more detailed information than data obtained through other collection methods, such as surveys. In addition to the evaluation through the methodology, the process of obtaining results also includes numerous visits to the area, photographs of the area including individual buildings, and in-depth interviews outside the evaluation with users of the area.

The procedures for preparation of results

- Description of the university campus: Basic data and other important information about the university campus, which

accompanies and informs the reader when reading the evaluation of the object. In addition to the data about the authors of the building, the exact address, the parcel number and the date of construction, other data (additional information) that the author collected are also provided. It is also recommended to add information on property relations, type of area and number of units (eg buildings, vegetation).

- Location of the university campus: Graphical representation of the location of the university campus within the city also represents a significant part of the evaluation process, as it brings the reader closer to the evaluation of the type of university campus. According to the typology of university campuses, we distinguish 3 concepts of different approaches to the creation of university campuses (see chapter concepts of university campuses). The graphic also demonstrates the urban structure in the immediate vicinity of the university campus.
- Structure of the architecture and plan of the university campus: A structure that graphically presents the layout of the buildings of the university campus, its inter-pavilion spaces and the overall layout. A map or orientation plan of the university campus with color-coded types of buildings within the campus, location of services, parking lots and other objects of the university.
- The data and information processing phase: Each space was evaluated according to an identical structure on the basis of information obtained by qualitative research methods. In the conclusion, an evaluation scheme was created for each space to help visualize and compare the obtained information. Graphs and other graphic materials describe the current state of the evaluated university campuses in detail and serve as a more detailed interpretation of individual attributes. The obtained data was evaluated on the basis of indicator sets within the evaluation scheme, which enables visual and parametric comparison of individual projects. The provided methodology is sufficient for the needs of evaluation research. The objectification of the obtained results was ensured by a quantitative survey, which includes multicriteria evaluation.

3.2 Methodology background

The methodology was developed on the basis of two published practice-verified methodologies. One of them is the publication of the city of Hlohovec, which was elaborated within the scope of strategic policy of the city - "Concept of public spaces in Hlohovec" (Lukačovič et al., 2016). The methodology of public space evaluation was created during the "workshop" led by architect Adam Lukačovič. The second publication is "Methodology for assessing the quality of squares" (Kilnarová et al., 2014). Both methods of evaluating public spaces are based on the methodology of public spaces by Gehl (2013). The methodology of the Danish architect Jan Gehl (2002) is based on three stages: first life, then space and then buildings. This thought process in the stage of the creation of public spaces would ensure the highest standard in the issue of urban development (Salerno, 2011). Both methodologies were elaborated into one comprehensive methodology of evaluation of university campuses, while the hierarchization, division and naming of some of the attributes were altered. Subsequently, it was supplemented with attributes that directly affect the issue of university campuses as well as the needs of its users (student, employee). The basic question that the methodology addresses is how an ideal university campus should look like and how to characterize the criteria that indicate its quality.

3.3 Methodology of multi-criteria evaluation of the quality of university campuses and their potential

The multicriteria evaluation of quality requires the presence of a person or group of people who are guided directly in the area. It is based on one's own impressions and experiences, so the evaluation may be subjectively influenced to some extent. It

includes a detailed manual, which aims to eliminate discrepancies in the results of the analysis processed by different persons. In an effort to maintain the possibility of evaluation even for the general public, the criteria were formulated in a way that makes them as clear as possible. The advantage is that due to the time-saving and uniform nature of the results, it is possible to easily compare individual university campuses (Kilnarová et al., 2014). From the point of view of achieving objective and comparable results, it is recommended to perform the analysis of university campuses in favorable weather. Means fine, clear settled weather when the visibility is good.

Evaluation areas (4) with a description of individual attributes (20, each area contains 5 attributes)

A – Area (space around a person) - Within the character of the area, there are discussions whether the space is referred to as public or private, but as a result it is always identified as a collective space, which should guarantee comfortable use for all groups of users.

1. Space for education and information acquisition – Library, cafés, study rooms, studios or similar social spaces, where the student can work (independently or in a group) on assignments and projects or acquire knowledge within a collective.
2. Space for sleep and rest – Hostels, accommodation, student dormitories, student flats, lofts or other accommodation facilities for students and external staff, providing comfortable rest and sleep.
3. Space for meeting, culture and sports – Common rooms, club rooms, television rooms, spaces for leisure activities, music, theater ensembles. Sports grounds, playgrounds, grassy areas with maintained grassland, multifunctional areas.
4. Space for deepening the socio-economic dimension – Cafés, restaurants, music clubs, disco clubs, bars. Essentially, all the attributes that we could showcase in category 3, but unlike them, these also account for profit.
5. Space for food and beverage consumption – Dormitory canteen, fast food, restaurants, brunches, buffets, stalls, but also fireplaces and barbecue gazebos with open fire for grilling.

B – Area (dynamic and static movement) - People transport within the city for essential activities, such as work, shopping, services, leisure, or voluntarily. Making this movement more pleasant is possible by increasing the perceptual quality. Safety, freedom, simplicity and sensory richness are the hallmarks of quality movement. Higher levels of interaction with the environment must also be a priority when communicating with the primary traffic function. Cities must primarily allow people to move.

1. The opportunity to walk – One of the basic requirements in a human-friendly area is to allow comfortable movement of pedestrians. An upscale walking movement should be safe and free. The assessment focuses on the size of sidewalks and the quality of their surfaces, but also monitors whether pedestrians experience difficulties overcoming obstacles such as stairs, busy streets or improperly located furniture (such as benches, trash cans, public lighting poles) and parked cars.
2. The opportunity to stand – In addition to comfortable walking, the area should allow people to stop. First of all, this requires enough space, so that standing people do not hinder other pedestrians from moving. Ideal places to stop offer a look out into the space with back cover and various footstones, posts or railings are also suitable as they can be used as a support in the space.
3. The opportunity to sit – In the case of movables intended primarily for sitting (e.g. benches), in addition to its presence, its location is also essential (preferably with a covered back and undisturbed appearance), comfort and suitability of materials used (materials such as metal, concrete or stone are inappropriate on the parts of the bench

that the person touches while sitting). It is pleasant if the layout of the movables offers various seating options for individuals, couples and larger groups, such as students. The ability to sit also improves the presence of walls, columns and stairs – elements that primarily serve a different purpose but offer the possibility to sit on them. This is the so-called secondary seating. The presence of restaurant terraces, which significantly contribute to the social life of the space, is also evaluated.

4. Accessibility – Short distances are the privilege of a compact city. They contribute to the quality and active use of public spaces. The condition remains the prevention of the formation of closed areas or dead-end streets, which impede permeability. Clarity and orientation in space is supported by hierarchization, on which the elementary orientation spaces of city-wide significance are based and create the structure of urban permeability.
5. Parking – Nowadays, every public, semi-public, but also private space requires parking spaces, which are mostly provided by decree. In the case of university campuses, we only follow the decree for accommodation facilities (student dormitories) that provide parking. Part of such an area is the main building of the university, which must offer parking spaces for both employees and students. However, with the modern trend of bike paths and green universities, it is more necessary to address the question of whether there is a sufficient number of bicycle parking stands on the campus. Parking is one of the most discussed attributes of the methodology.

C – Area (safety) - The feeling of safety is one of the basic preconditions for quality of life. On the one hand, it is traffic safety. On the other hand, it is social safety. The prerequisite for both is visual clarity of the space and social control.

1. Social security – The feeling of danger in a public space is not only caused by traffic, but also by the fear of crime rate. The very presence of a larger number of people and the associated social control has a comparable effect as the presence of camera systems or patrol officers. It is important that the space is lively throughout the day, even outside working hours. The feeling of security is also supported by the transparency of the space and its sufficient lighting after dark. In the dark, a person feels more threatened and their well-being decreases significantly. If the space is unlit, its user tries to leave it as quickly as possible and tries to find a place with the presence of light. When it comes to lighting, the quality and color shade of the light are also evaluated. If social control is insufficient, signs of vandalism can occur.
2. Traffic safety – Good transport accessibility has an impact on the liveliness of the area, but it also poses many risks. The most significant threat to pedestrians, or cyclists is that of stronger traffic participants. The transport solution should respect the following order of priorities: safety, creation of public space, pedestrians, cyclists, public urban transport, service transport, individual transport and parking.
3. Safety in sports and entertainment – If there are sports grounds or other areas designated for sports on the premises, they must comply with the applicable standards for the construction of such facilities.
4. Healthy environment – People are inclined to spend their free time in nature from the standpoint of a healthy environment. Clean air, noise minimization, pleasant climate, mild olfactory sensations, lightness or wind protection should not be the prerogative of parks. The ecology of the environment must be maximized at each point of the place.
5. Communicativeness – The informative value of public space must be obvious at first view. The use of space is supported by information, orientation in space, sensory and cognitive perceptions.

D – Area (aesthetics of the environment) - Ergonomic and emotional comfort are prerequisites for the residential quality of the place. Sufficient sensory and cognitive variability of the environment is a measure of attractiveness.

1. Overall visual identity – One perceives most information through the sense of sight. The visual quality of the university campuses therefore significantly influences the impression of the space. From the point of view of urbanism, the closedness of the square and its clear demarcation are evaluated, but also the quality of the architecture. The presence of a significant dominant (e.g. the main building of the university) is positive, as it can be considered a characteristic feature of a specific space and thus facilitate orientation within it. The small stimuli that pedestrians perceive at eye level are no less important. The presence of works of art, the quality of the ground floor details (e.g. bossage, sgraffito, compelling textures), the quality of the materials used in the ground floor and also the design of the urban movables are evaluated. The overall impression can also be negatively affected by clutter, gaps (undeveloped places where houses should stand), a large number of parked cars or aggressive, tasteless advertising.
2. Auditory impression of the environment – Another important sense that people perceive their surroundings through is hearing. It helps to complete the picture of the area, but in some cases (usually because of busy traffic), large noise load can be a limiting factor that prevents a more active use of space. In the case of university campuses, a soundproof environment is important through outdoor learning. Students rather look for places that are isolated from the surroundings.
3. Greenery – One of the most important attributes of the evaluation of university campuses is greenery. There is no doubt about the environmental and ecological efficiency of greenery in connection with its ability to economically regulate water, positively influence climatic conditions or cultivate the environment. We subjectively evaluate greenery on the basis of quantity, but especially the quality of individual woody plants, shrubs, herbaceous vegetation, grasslands and others.
4. Water and water elements – Water is also one of the more relevant attributes within the evaluation of university campuses. Where there is water, there is life. It improves the quality of air and oxygenates the surrounding soil. We subjectively evaluate water and water elements on the basis of quantity, but especially the quality of individual elements.
5. Human criteria – Spaces must be human-friendly and pedestrian-friendly. Excessive development of the area makes it bigger and static, allowing the unchanging elements that are dominant in this environment come to the forefront. In an area designed for life, we consider elements on a smaller scale that are more accessible to people as very positive attributes. The scale of the city or municipality in which the university campus is located must return to human dimensions.

4 Results

A total of 94 evaluators participated in the evaluation – mostly students from the selected universities. 68 (72%) of them were women and 26 (28%) men were in the age range of 19–26 years. All evaluators were acquainted with the methodology of multicriterial evaluation of university campuses and their potential, and the evaluation was accompanied by the author of the methodology. Each space was evaluated according to an identical structure and an evaluation scheme was created for each space in the conclusion. According to graph no. 2 we can clearly say, that the evaluators were mostly older students who know the university campus well and experienced it.

Graph 2: Number of students within different age categories.

19 years	2 students	2,12 %
20 years	8 students	8,51 %
24 years	71 students	75,53 %
25 years	12 students	12,76 %
26 years	1 student	1,06 %

Source: Čibík and Štěpánková (2020).

The obtained data were evaluated on the basis of indicator sets within the evaluation scheme, which enables visual and parametric comparison of individual projects. In our opinion, the given methodology is sufficient for the needs of this research. To objectify the obtained results, a quantitative survey was also carried out, which included multicriteria evaluation. We performed the quality assessment on five university campuses within two countries, one of which is designed using the American concept and one meets the characteristics of the combined concept (campus of the Slovak University of Agriculture in Nitra). However, this space was originally designed with the idea of the American concept, and its final form now bears many features of the European concept and meets several criteria for this type of public space. This area was the worst rated campus with a total rating of 50%, while the negative rated criteria were most noticeable in the case of the opportunity to stand, the opportunity to sit, parking and traffic safety. Visual identity, greenery and water features proved to be the most positively evaluated criteria. Unsurprisingly, the best-rated university campus is the Vienna University of Economics and Business, where its compactness, quiet environment and relatively good accessibility within the city structure play a major role in quality. A total of 80% was evaluated, while the most negatively evaluated criteria were water and water elements and space for rest and sleep, which are absent in the area.

4.1 University of Graz

- Location: Universitätspl. 3, 8010 Graz, Austria
- Location within the city: wider center
- Area: 18 ha
- Established in 1585

Score: 66%

Tab. 1: Evaluation sheet with all attributes and their point evaluation, where 5 points is the best and 1 the worst.

Evaluation:

A – Area (space around a person)

1. Space for education and information acquisition	1 2 3 4 5
2. Space for sleep and rest	1 2 3 4 5
3. Space for meeting, culture and sports	1 2 3 4 5
4. Space for deepening the soc-eco. dimension.	1 2 3 4 5
5. Space for food and beverage consumption	1 2 3 4 5

B – Area (dynamic and static movement)

1. The opportunity to walk	1 2 3 4 5
2. The opportunity to stand	1 2 3 4 5
3. The opportunity to sit	1 2 3 4 5
4. Accessibility	1 2 3 4 5
5. Parking	1 2 3 4 5

C – Area (safety)

1. Social security	1 2 3 4 5
2. Traffic safety	1 2 3 4 5
3. Safety in sports and entertainment	1 2 3 4 5
4. Healthy environment	1 2 3 4 5
5. Communicativeness	1 2 3 4 5

D – Area (aesthetics of the environment)

1. Overall visual identity	1 2 3 4 5
2. Auditory impression of the environment	1 2 3 4 5
3. Greenery	1 2 3 4 5
4. Water and water elements	1 2 3 4 5
5. Human criteria	1 2 3 4 5

Source: Čibík and Štěpánková (2020).

The University of Graz, founded in 1585, is the second oldest university in Austria and one of the largest in the country. The current campus of the university was established in 1870. The main building was opened in 1895. From 1897, the first women began studying at the school. After the rise of Nazi power in 1938, many teachers were fired and a third of the students left

the school. Since the 1960s, the university has been experiencing a renewed increase in the number of students. In 2004, the Faculty of Medicine became independent. In 2007, by contrast, the university opened a new faculty of ecological, regional and pedagogical studies.

According to table 1, the best rated category was category A (space around a person). The worst category was D (aesthetics of the environment), which caused mainly a weak evaluation of greenery, where, in addition to quantity, the quality of individual woody plants and water and water elements that are absent in the environment were also evaluated. There was no indoor or outdoor water feature on the premises of the university.

The University Campus of University of Graz is a complex campus situated in the city center with excellent accessibility. Highly rated attributes were a space for meeting, culture and sports, along with a space for sleep and rest. Students, as well as university staff, really have many options for how and where to spend their free time, and in addition to sports facilities directly in the campus, there are many attractive spaces. The evaluators consider the attribute water and water elements to be the main shortcoming, because such an element was absent in the area. Greenery would also make the space more attractive, but it must be said that in the immediate vicinity of the campus there is a city park, which together with the campus creates a valuable space in the center of urbanized structures.

4.2 Johannes Kepler University Linz – JKU

- Location: Altenbergerstraße 69, Linz, Austria
- Location within the city: outskirts of the city
- Area: 24 ha
- Established in 2000 and continues

Score: 77%

Tab. 2: Evaluation sheet with all attributes and their point evaluation, where 5 points is the best and 1 the worst.

Evaluation:

A – Area (space around a person)

1. Space for education and information acquisition	1 2 3 4 5
2. Space for sleep and rest	1 2 3 4 5
3. Space for meeting, culture and sports	1 2 3 4 5
4. Space for deepening the soc-eco. dimension.	1 2 3 4 5
5. Space for food and beverage consumption	1 2 3 4 5

B – Area (dynamic and static movement)

1. The opportunity to walk	1 2 3 4 5
2. The opportunity to stand	1 2 3 4 5
3. The opportunity to sit	1 2 3 4 5
4. Accessibility	1 2 3 4 5
5. Parking	1 2 3 4 5

C – Area (safety)

1. Social security	1 2 3 4 5
2. Traffic safety	1 2 3 4 5
3. Safety in sports and entertainment	1 2 3 4 5
4. Healthy environment	1 2 3 4 5
5. Communicativeness	1 2 3 4 5

D – Area (aesthetics of the environment)

1. Overall visual identity	1 2 3 4 5
2. Auditory impression of the environment	1 2 3 4 5
3. Greenery	1 2 3 4 5
4. Water and water elements	1 2 3 4 5
5. Human criteria	1 2 3 4 5

Source: Čibik and Štěpánková (2020).

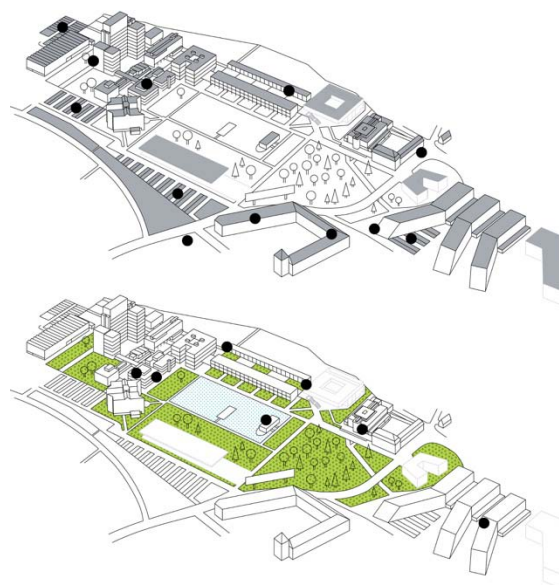
JKU's campus is located in the northeast of Linz in the Auhof area of the St. Magdalena district. The university buildings are placed in 24 ha (240,000 m²) park centered around a pond. Unlike traditional Austrian universities which are

designed in the style of disordered buildings throughout the city, JKU is a university in the form of a campus.

The JKU campus is practical for many reasons. The buildings are located in one place, so the students do not waste time transporting around the city. There are spaces in the area where students can relax and meet their classmates and friends. The campus is large, but proactive students organize campus tours for new students. The area acts as a venue for various events.

The best rated category was category B - dynamic and static movement and category C - safety. The worst rated category was D - aesthetics of the environment, which was mainly caused by attribute number 2 (Auditory impression of the environment) which is related to the current construction of other buildings. The university campus of JKU is constantly growing and innovating. New modern buildings not only ensure greater diversity of the environment and new spaces and services for users, but the compactness of the complex. However, the construction process is currently making it difficult for users to stay on campus.

Figure 2: Representation of green spaces, open spaces and community-based services (black dots) compared to buildings, car parks or areas not accessible to the public. Positive example of JKU – Johannes Kepler University campus in Linz (Austria).



Source: JKU Linz and vectorized by Čibik (2019).

The campus in Austria's third largest city consists of a set of high-quality spaces in an urbanized landscape. The area is clear and modern with lots of greenery and water features. The space has a recreational character and a great positive are the recent modern additions, sensitively set in the complex. The area provides quality seating elements, bicycle stands, bicycle depots and also quality interior and exterior architecture. We perceive as a negative the relatively poor accessibility of public transport connected to the city center, because the area is significantly allocated. On the contrary, we perceive the availability by other motor and non-motor vehicles much better and there is also a very sophisticated parking solution.

There are multiple ways to get to JKU. The major question that students ask when entering the campus is: Where can I park? The campus is a car-free zone, but there are parking lots in the vicinity. There are parking lots below the science park area, close to the campus, and one underground car park in their immediate vicinity. In total, there are approximately 1,365 parking spaces, of which about 400 are for short-term parking. The rest is reserved for long-term parkers (JKU Linz, 2020).

4.3 University of Vienna

- Location: Universitätsring 1, 1010 Wien, Austria
- Location within the city: wider center
- Area: 11 ha
- Established in 2000

Score: **59%**

Tab. 3: Evaluation sheet with all attributes and their point evaluation, where 5 points is the best and 1 the worst.

Evaluation:

A – Area (space around a person)

1. Space for education and information acquisition	1 2 3 4 5
2. Space for sleep and rest	1 2 3 4 5
3. Space for meeting, culture and sports	1 2 3 4 5
4. Space for deepening the soc-eco. dimension.	1 2 3 4 5
5. Space for food and beverage consumption	1 2 3 4 5

B – Area (dynamic and static movement)

1. The opportunity to walk	1 2 3 4 5
2. The opportunity to stand	1 2 3 4 5
3. The opportunity to sit	1 2 3 4 5
4. Accessibility	1 2 3 4 5
5. Parking	1 2 3 4 5

C – Area (safety)

1. Social security	1 2 3 4 5
2. Traffic safety	1 2 3 4 5
3. Safety in sports and entertainment	1 2 3 4 5
4. Healthy environment	1 2 3 4 5
5. Communicativeness	1 2 3 4 5

D – Area (aesthetics of the environment)

1. Overall visual identity	1 2 3 4 5
2. Auditory impression of the environment	1 2 3 4 5
3. Greenery	1 2 3 4 5
4. Water and water elements	1 2 3 4 5
5. Human criteria	1 2 3 4 5

Source: Čibík and Štěpánková (2020).

The best rated category was category D – aesthetics of the environment. The worst rated were category B - dynamic and static movement and category C - safety.

The university is located next to the main building on the Ringstrasse, near Vienna City Hall, dispersed in 60 other locations and the larger university complexes are nearby (Neues Institutsgebäude, lecture rooms in Althansstrasse, Juridicum etc.) The university also includes a botanical garden, an astronomical observatory, a sports center and a number of research institutes, some outside Vienna (Niederstätter, 2001).

A typical compact campus in a strictly urban environment within the metropolis of Vienna. The Campus of the University of Vienna is characterized by modern infrastructure in a historical setting. It has its historical roots in the 18th century. There are nine rooms of different size (99 m² – 442 m²), embedded in buildings that are surrounded by the green spaces of 13 courtyards, that can be booked for events – no extra charge for "Campus feeling". The Campus is close to the Main Building and Vienna's historic center and easy to reach by public transport. The campus is accessible and visually attractive, but again there are no water elements and part of the services that define the complexity of university campuses, and these are elements of leisure and non-educational activities, such as sport or cultural activities.

However, outside classroom hours, the University of Vienna community has access to learning and social spaces, including a library, computer and PhD labs, lounges and a cafe. The library offers a wide range of services to support learning and research, from electronic and print resources to computer workstations and bookable collaboration rooms.

4.4 Vienna University of Economics and Business

- Location: Welthandelspl. 1, 1020 Wien, Austria
- Location within the city: far from the center
- Area: 13 ha
- Established in 2013

Score: **80%**

Tab. 4: Evaluation sheet with all attributes and their point evaluation, where 5 points is the best and 1 the worst.

Evaluation:

A – Area (space around a person)

1. Space for education and information acquisition	1 2 3 4 5
2. Space for sleep and rest	1 2 3 4 5
3. Space for meeting, culture and sports	1 2 3 4 5
4. Space for deepening the soc-eco. dimension.	1 2 3 4 5
5. Space for food and beverage consumption	1 2 3 4 5

B – Area (dynamic and static movement)

1. The opportunity to walk	1 2 3 4 5
2. The opportunity to stand	1 2 3 4 5
3. The opportunity to sit	1 2 3 4 5
4. Accessibility	1 2 3 4 5
5. Parking	1 2 3 4 5

C – Area (safety)

1. Social security	1 2 3 4 5
2. Traffic safety	1 2 3 4 5
3. Safety in sports and entertainment	1 2 3 4 5
4. Healthy environment	1 2 3 4 5
5. Communicativeness	1 2 3 4 5

D – Area (aesthetics of the environment)

1. Overall visual identity	1 2 3 4 5
2. Auditory impression of the environment	1 2 3 4 5
3. Greenery	1 2 3 4 5
4. Water and water elements	1 2 3 4 5
5. Human criteria	1 2 3 4 5

Source: Čibík and Štěpánková (2020).

Wirtschaftsuniversität Wien (WU) is one of the largest schools of its kind in Europe. It was founded in 1898 and twenty years later renamed to Hochschule für Welthandel. It received its current name in 1975. The school has changed location several times during its existence and today's modern campus was created only after the number of students from many countries – including Slovakia – exceeded twenty thousand and it was necessary to build a new academic background (Kalinová, 2014).

It was created near the Vienna Prater and the fairgrounds on the basis of an urban plan from 2009. At the end of the summer semester in the university town of WU Campus, students relax in areas that resemble a skate park or sit in bars and cafés. Others study inside large-scale classrooms in a modern library, the largest of which has a capacity of 450 people. The university campus has a non-compact surrounding area, behind the campus buildings there are large gaps. The views seem rather disharmonious in connection with the non-compactness of the development. The space itself has many other functions in addition to the main functions, in particular it offers spaces for relaxation. The campus consists of a large pedestrian zone, rest areas and 6 distinct modern buildings, which originated from an international competition.

The best rated category was category B - dynamic and static movement. The worst category was D - aesthetics of the environment, which was mainly caused by the attribute related to water and water elements, which are again absent in the environment. However, there is a corporate campus nearby, which, on the other hand, complements the university campus with larger water bodies in the form of an artificial lake and other forms of water. The corporate campus also has a lot of

greenery and together with the campus of the University of Economics and Business in Vienna form an important space in the city.

The main and an unmissably dominant feature of the WU campus is the large building of the Library and Education Center (LC), which was created according to the project of the British-Iraqi designer – Zaha Hadid (1950 – 2016). As is often the case, it is a rather eccentric architecture in the style of the so-called new futurism of concrete and glass. The buildings include offices, lecture halls, a library, a dining room, a fitness center, cafés and restaurants. Accommodation capacities for students are, however, absent. Which is also the worst rated attribute.

4.5 Slovak University of Agriculture in Nitra

- Location: Trieda Andreja Hlinku 609/2, Nitra
- Location within the city: wider center
- Area: 44 ha
- Established in 1966

Score: **50%**

Tab. 5: Evaluation sheet with all attributes and their point evaluation, where 5 points is the best and 1 the worst.

Evaluation:

A – Area (space around a person)

1. Space for education and information acquisition	1 2 3 4 5
2. Space for sleep and rest	1 2 3 4 5
3. Space for meeting, culture and sports	1 2 3 4 5
4. Space for deepening the soc-eco. dimension.	1 2 3 4 5
5. Space for food and beverage consumption	1 2 3 4 5

B – Area (dynamic and static movement)

1. The opportunity to walk	1 2 3 4 5
2. The opportunity to stand	1 2 3 4 5
3. The opportunity to sit	1 2 3 4 5
4. Accessibility	1 2 3 4 5
5. Parking	1 2 3 4 5

C – Area (safety)

1. Social security	1 2 3 4 5
2. Traffic safety	1 2 3 4 5
3. Safety in sports and entertainment	1 2 3 4 5
4. Healthy environment	1 2 3 4 5
5. Communicativeness	1 2 3 4 5

D – Area (aesthetics of the environment)

1. Overall visual identity	1 2 3 4 5
2. Auditory impression of the environment	1 2 3 4 5
3. Greenery	1 2 3 4 5
4. Water and water elements	1 2 3 4 5
5. Human criteria	1 2 3 4 5

Source: Čibik and Štěpánková (2020).

The campus of the Slovak University of Agriculture in Nitra (SUA) is situated on a flat terrain approximately 250 m from the left bank of the river Nitra. To the northwest of the complex, there is a bridge over the river Nitra, which connects the east-west axis of the city formed by Štúrova Street and Andrej Hlinka Avenue. The area of the campus is delimited from the north by Andrej Hlinka Avenue, which bends to the northeast from the bridge and is bordered on the west by Nábřežie mládeže and by Akademická Street from the east. The Agrokomplex exhibition center border the SUA campus from the south and partly from the east side (Szalay et al., 2013). The SUA campus forms a significant building unit in the urban composition of the city.

The best rated category was category D – aesthetics of the environment. The worst rated was category B - dynamic and static movement. The SUA campus is adjacent to several buildings and complexes of urban as well as suburban significance. The historic residential part of the city center and the university dormitory building – the Mladost' student

dormitory, which was built before the construction of the original University of Agriculture (VŠP) (south of Štúrova Street) sprawl behind river Nitra. On the northeast side, the campus is located near the Agrokomplex exhibition center and on the west side it is adjacent to the building of the Constantine the Philosopher University – it was constructed as the Faculty of Education shortly after the VŠP campus and the Chrenová Street residential area (Szalay et al., 2013).

Figure 3: Structure of the university campus of the Slovak University of Agriculture in Nitra.



Source: Čibik and Štěpánková (2020).

Szalay et al. (2013) in the Proposal for the Declaration of Real Estate as a National Cultural Monument (NKP) state that the campus shape completes the silhouette of the city, either from the views of the city's landmark Nitra Castle or from the eastern parts of the city. The high-rise building of the Rector's Office – pavilion E together with the auditorium curve located on the main east-west axis of the city compositionally follows the high-rise building of the Mladost' student dormitory on the right bank of the river as well as the silhouettes of two dominant historical city landmarks, Piarist Church and Nitra Castle. The original campus of the university stands in the open space surrounded by park greenery, the individual buildings of the complex are loosely located on the plot. The main set of university pavilions is composed perpendicular to the city axis and ends the view away from the city. The other pavilions are located to the east and south of the main block. The northeastern part of the area consists of a botanical garden with a body of water.

After averaging the results, we came to the conclusion that the area does have some negatives, but it also has a huge potential that we can expand on in the future. In the table, which was created by averaging all attributes and their points, we can see that the area has high quality greenery, water features, but also the overall visual identity of the environment. On the other side, the campus lacks communicativeness, better outdoor movables or sidewalks. There are also no restaurants, cafés or other attributes that affect the socio-economic dimension. The campus of the Slovak University of Agriculture in Nitra does not represent the current requirements of visitors who spend time here, but also the people who just pass through it, despite it being a significant spatial and functional dominant of Nitra. Due to the fact that this space is used not only by students, but also by the inhabitants of the city, it is necessary to comprehensively address it in relation to current trends in landscape and general architecture. However, all minor or major interventions need to be addressed with regard to the architectural style created by the author of the original project. The result should be a multifunctional urban component, but also a public space that meets all the requirements of a high quality and functional area. There are many positives we can expand on in the future.

5 Conclusion

In today's hectic times and the continuous movement of everything around us, along with the alternation of fashion, art, or opinions, the nature of the environment intended for life dynamically changes. The extent of changes can be observed mainly in the variations of the functional use of architectural objects and their areas. If universities are conceived as campuses and are a part of the city, then they form one of its main elements and can thus help in the development of sustainability. Therefore, it is essential that there are relationships (physical, economic and socio-cultural) between the city and the university campus. The university campus has a positive effect on the development of the city and its connection with urban structures also increases social activities that lead to the development of the economy and the integration of students among the local population. This benefits the development of society. The campus affects the city. If the university campus can become sustainable, so can the city. If the social events of the university are connected with the activities of the local inhabitants and the university community would cooperate with the community of the city, it will also be reflected in its life – the city = a living organism. As a part of the literature review, the article addressed the question of how university campuses can function as a public space in the city. Every functioning public space, specifically a public space in the form of a campus within this work, must offer visitors a package of socio-aesthetic values. Within the partial results of this work, it was proved that university campuses do possess such values and can significantly influence the visual and various other values of the city. Based on the achieved results, we can say that each evaluated university campus provides users with quality space, but not in all cases, this space is also filled with quality services. Austrian campuses focus more on a comprehensive package of all services, in contrast to the campus of the Slovak University of Agriculture, where the appearance of the campus significantly exceeds the quality of services provided. Among all campuses, the campus of the Slovak University of Agriculture in Nitra performed worst in the first three categories (A - space around a person, B - dynamic and static movement, C - safety), but best in category D - aesthetics of the environment, where it significantly exceeds other campuses in several attributes. The evaluation showed us which direction to take in the future development of the areas and what specific attributes to pay more attention to. However, we can clearly say that all evaluated areas significantly affect the surrounding environment with various influences and care for their future development is key in connection with the development of the community where they are located.

Literature:

- Benedict, A. – McMahon, E.: *Green Infrastructure Linking Landscapes and Community*. London: London Island Press, 2006. 320 p. ISBN 978-1597267649.
- Bender, T.: *Scholarship, local life, and the necessity of worldliness*. In Wusten, H. (Ed.), *The urban university and its identity: Roots, location, roles (17–28)*. Dordrecht: Kluwer Academic Publishers, 1998. 206 p. ISBN 978-94-011-5184-9.
- Čibík, M. – Štěpánková, R.: *A Multi-Criteria Assessment of the Open University Campus*. In *Věda mladých 2019 – Science of Youth 2019*. Nitra: Slovak University of Agriculture in Nitra, 2019. pp. 33 – 44. ISBN 978-80-552-2008-6.
- Čibík, M. – Stiles, R. – Štěpánková, R.: *Univerzitný areál – udržateľná multifunkčná súčasť urbanizovaného priestoru sídla : doctoral dissertation thesis*. Nitra: Slovenská poľnohospodárska univerzita v Nitre, 2020. 78 p. [online]. Available on internet: <https://issuu.com/home/published/kampus_issuu>
- Čibík, M. – Kuciaková, B. – Štěpánková, R.: *Transformation of the Central Zone Respecting the Rural Values: Case Study Kanianka, Slovakia*. In *Public recreation and landscape protection – with nature hand in hand*. Brno: Mendel University of Agriculture and Forestry, 2020. pp. 543 – 547. ISBN 978-80-7509-716-3.
- Fassi, D. – Galuzzo, L. – Rogel, L.: *Hidden public spaces: when a university campus becomes a place for communities*. In *Proceedings of DRS 2016, Design Research Society*, 50th Anniversary Conference. Brighton, UK, 2016. pp. 3407 – 3425. ISSN 2398-3132.
- Gehl, J.: *Public Space and Public Life of Adelaide*. Adelaide: City of Adelaide, 2002. 15 p. ISBN 976-80-2602-080-6.
- Gehl, J.: *Města pro lidi*. Brno: Nadace Partnerství, 2013. 261 p. ISBN 978-80-2602080-6.
- Glare, P. G. W.: *Oxford Latin Dictionary*. Oxford: Oxford University Press, 1982. 2150 p. ISBN 978-0198642244.
- Irvin, K. N.: *The university campus & the urban fabric: mending the university district* : diploma thesis. San Jose: San Jose State University, United States, 2007. 165 p. [online]. Available on internet: <http://www.sjsu.edu/faculty/weinstein.agrawal/urbp_298_HonorsReport_Irvin.pdf>
- JKU LINZ.: *Axonometry of the campus*. In *JKU – ein Campus blüht auf!* Linz: JKU Linz, 2019. [online]. [cit. 2020-03-05]. Available on internet: <<https://www.jku.at/campus/der-jku-campus/campusementwicklung/>>
- Johnson, C. R.: *Campus landscape vision and site standards*. Knoxville: The University of Tennessee, Knoxville, 2012. 116 p. [online]. Available on internet: <<http://www.masterplan.utk.edu/wpcontent/uploads/sites/33/2015/09/9874638038/43384landscapesitesstandarts.pdf>>
- Kalinová, B.: *Viedeň má najväčšie univerzitné mestčko v Európe*. In *SME Bratislava*, 2014 [online]. Available on internet: <<https://bratislava.sme.sk/c/7275225/vieden-ma-najvacsie-univerzitne-mestecko-v-europe.html>>
- Kilnarová, P. – Kopačík, G. – Kuznetcova, E., Zdražilová, J.: *ed. Moje náměstí*. Brno: Akademické nakladatelství CERM, 2014. ISBN 978-80-7204-894-6.
- Lukačovič, A. et al.: *Verejné priestory*. In *Strategická politika mesta Hlohovec*. Hlohovec: Mesto Hlohovec, 2016. [online]. Available on internet: <<https://www.archinfo.sk/diela/urbanizmus/koncepcia-verejnych-priestorov-hlohovec.html>>
- Melková, P. et al.: *Manuál tvorby veřejných prostranství hlavního města Prahy*. Praha: IPR/SDM/KVP, 2014. 290 p. ISBN 978-80-87931-11-0.
- Moravčíková, H.: *Moderná a/alebo totalitné v architektúre 20. storočia na Slovensku*. Bratislava: Vydavateľstvo SLOVART, 2013. 311 p. ISBN 978-80-556-1056-6.
- Niederstätter, A.: *Österreichische Geschichte 1278-1411. Die Herrschaft Österreich: Fürst und Land im Spätmittelalter*. Wien: Ueberreuter, 2001. 519 p. ISBN 3-8000-3526-X.
- Rosemann, J.: *Research by design in Urbanism*. In *Research by design*, 2008. 1 p. DOI: 10.3233/978-1-58603-739-0-267
- Salerno, R.: *Filling in gaps in the urban landscape with a patchwork of open space. A proposal for the dispersed city*. In *Mind the Gap. Landscape for a new era*. EFLA 2011. Talinn: EFLA, 2011. DOI: 10.13140/2.1.3647.6164
- Szalay, P. – Kapšinská, V. – Haberland, D.: *Návrh na vyhlásenie nehnuteľnosti vecí za národnú kultúrnu pamiatku*. Bratislava – Prešov: SAMO, ÚSTARCH SAV, 2013. 1184 p. ISBN 978-80-89123-07-0.
- Šaling, S. – Ivanová-Šalingová, M. – Maníková, Z.: *Veľký slovník cudzích slov. 5. revidícia. a doplnené vydanie*. Bratislava – Prešov: SAMO, 2008. 1184 p. ISBN 978-80-89123-07-0.
- Sidorova, M. et al.: *Jak navrhnout fěrově sdílené město?* Praha: Tiskárna Daniel s.r.o., Heinrich-Böll-Stiftung e.V, 2017. 36 p. ISBN 978-80-906270-6-2.
- Tóth, A. – Halajová, D. – Halaj, P.: *Green Infrastructure: A Strategic Tool for Climate Change Mitigation in Urban Environments*. In *Journal of International Scientific Publications: Ecology and Safety*, 9. Issue (1), 2015. pp. 132–138. ISSN 2398-3132.
- Winks, L. – Green, N. – Dyer, S.: *Nurturing innovation and creativity in educational practice: principles for supporting faculty peer learning through campus design*. In *High Educ 80*, 2020. pp. 119–135. [online]. Available on internet: <<https://doi.org/10.1007/s10734-019-00468-3>>
- Yang, Y. – Diez-Roux, A. V.: *Walking Distance by Trip Purpose and Populations*. In *American Journal of Preventive Medicine*. 43. Issue, 2012 pp. 11–19. DOI: 10.1016/j.amepre.2012.03.015

Primary Paper Section: A

Secondary Paper Section: AL, AM

THE TRANSFER EFFECT OF MUSICAL ACTIVITIES IN TERMS OF ABILITIES AND PERSONALITY DEVELOPMENT - ABOUT THE RESULTS OF A MUSIC-PEDAGOGICAL STUDY

^aAGÁTA CSEHI

J. Selye University, Bratislavská cesta 3322, 945 01 Komárno, Slovakia
email: "csehiovaa@ujss.sk"

Abstract: Music is an essential condition for both general development and educational work. It evokes emotions, has a therapeutic effect and affects both the individual's intellect and physical-mental-emotional world. As a result, in the last few years or decades, the impact of music and musical activities have become a central topic of more and more research. The requirements of modern education are also met by creative activities that have a broad transfer effect, spread their impact over several areas, a multitude of skills and have a positive effect on the development of the whole personality as well. In the present paper, we demonstrate the results of such study. In our music-pedagogical study, focusing on the elements of production and reproduction, perception and reception, we summarize the ability-developing and personality-developing effects of the use of creative – instrumental and vocal-instrumental – musical activities.

Keywords: music, ability, personality development, transfer, research, study, educational

1 Introduction

Music is a human-forming force that affects the whole personality. Overall, it has a significant impact on the general development of an individual. It predisposes us to be more receptive to the beautiful; moreover, it shapes taste and human behaviour. Music education is only a small segment of institutional training yet it can strongly influence the individuals' general development. It directly induces emotions, affects the development of cognitive and emotional competencies and physical and mental health. Consequently, music education is a crucial part of educational work and personality development. Last but not least, music is considered one of the central research topics in various examinations. According to their fields of expertise, music researchers, music educators, music historians, psychologists, doctors and therapists study the impact of music on ability development, talent development, concentration, socialization and community building processes. Music aids in achieving spiritual harmony and well-being, in preserving and nurturing health, in relieving stress and rehabilitating. It is therefore a tool in education, personality development, therapy and prevention (Falus 2016).

2 The place and role of music in ability development

The quality and degree of ability (as a suitability for an action or performance)¹ is determined partly by the person's innate abilities and partly by the set of environmental influences, and the experience, knowledge and skills that are to be acquired in the learning process. The abilities are divided into two main groups. These are general abilities – above all, intelligence and creativity – as well as special abilities that are manifested in different forms of activity, e.g. music, fine arts and sport. In the system of basic musical ability, both simple and complex abilities are present (Erős 1993: 10). Every person has an ability; however, as an ability covers internal hidden possibilities, it is only manifested and measurable as a result of a certain performance. Likewise, based on one's talent, musical abilities are created in consequence of learning (Erős 1993, Tóth 2011). Abilities and skills cannot be realized without an organic cooperation. Musical abilities and skills are 'automated' components of the musical activity. The physiological conditions of their formation are: the interaction of the central nervous system, the sensory organs and the motor apparatus. 'The instrumental musician, for instance, uses the senses of hearing to correct the movements of the hand apparatus, and the singer also regulates breathing and the innervation of the larynx

accordingly' (Michel 1964: 69).² There are a number of components in terms of musical abilities. 'By musical abilities we mean a combination of many factors. These include instrumental and singing abilities, music-specific cognitive processes, emotional and musical experiences, motivation, musical preferences, attitudes and interest' (Gembris 2002, cit. Turmezeyné-Máth-Balogh 2005: 100-123). Gordon (1971) claims that abilities determine the level we are able to achieve, but the role of the environment and music education are important in taking the opportunities to the full. Besides abilities, Sloboda (1994) emphasizes the importance of the environment, interest and motivation (Janurik-Józsa 2013).

Therefore, the environment, motivation and education play a significant role in the ability development. This also applies to music education. Music classes lead to results only if they follow a complex musical education that includes perception and reception, reproduction (singing, musical reading and writing, instrument playing) and creation (improvisation and improvisation activities). Each activity – receptive, reproductive and creative – urges students to engage in external and internal activities. Singing requires physiological functions; the logic of music activates the intellectual functioning; and its pictoriality, dynamics and direct emotional impact help the development of the individual's personality through the experience of singing, music making and listening to music (Dobray 1983). Music requires twice as much brain activity as speech, and instrumental singing activates the entire pallium. As a result, the many skills that are used while music making also aid in developing other areas. 'Musicians have a demonstrably more advanced corpus callosum – a tract which connects the two cerebral hemispheres of the brain – than average people. Accordingly, there is much greater interoperability between skills related to emotional intelligence, logical thinking and speech than in general' (Marton, Janurik 2016).

From the perspective of the development of musical abilities, certain elements of music are important, which according to *Zoltán Kodály* (1882-1967) are effective "educational tools." In his opinion, 'Rhythm develops attention, concentration, steadiness and ability of innervation. Melody opens up the world of feelings; it changes in intensity, tone and it is the sharpener of our auditory organ. Singing is, after all, such a versatile bodily function that the effect of physical education is immeasurable – in case 'soul education' would not be important to someone. Its health benefits are well known' (Kodály 1974: 95). It is in this spirit that Kodály had developed and created his music-pedagogical method; its essence is putting musical and aesthetic education at the centre of child's upbringing and personality formation.

3 Creative musical activities and their impact

Creative and diverse musical activities are at the forefront of modern and progressive methods. These can be solo, small-group, - and large-group classes, and can be realized in vocal, instrumental, vocal-instrumental, musical-kinetic forms. The range of possibilities is extremely rich; the active forms of music, singing, instrument playing and physical movements always have to be coordinated harmoniously. Singing in groups proves to be more advantageous than soloing. With its communicative aspect, it invites collaboration and improves relationships between people. At the same time, it ensures the anonymity of individual expression and interpretation, which in many cases creates a secure sense of self-realization (Mátejevová 1993). This has been shown to be particularly beneficial for adolescents struggling with "complexes" and for teenage boys whose voice mutation has just begun.

¹ The literature on abilities is very rich, including sources of researches focusing on the most significant musical abilities and skills: Michel 1964, Teplov 1965, Kokas 1972, Poledňák 1984, Gordon 1971, Dombi Kemény 1999,, Franěk 2007, Tichá 2009.

² In this paper, I have translated all quotations from Hungarian and Slovak into English.

The biggest role of vocal expression (apart from professional factors) lies in the fact that it is the most natural and spontaneous way of spiritual and somatic expression, regardless of age and gender. The psychological and somatic positive effects of active singing are a proven fact.³ Besides somatic factors, singing has a positive impact from a psychological viewpoint. Singing contributes to the training and shaping of sound and hearing, helps develop a sense of rhythm, increases emotional and aesthetic expression, and, of course, provides an aesthetic experience (Pavlovská 1980). An additional or accompanying element of the vocal performance can be the instrumental play as well as a part of musical games, or it can also be a tool for 'demonstrating' certain curricula.

Musical-kinetic activities also prove to be an excellent tool for developing musical competencies. They give an opportunity to satisfy the need for physical movement. It is important for the individual to be able to express the music they hear with movement (Orsovics 2018). Singing and music lessons as well as musical games, conducted in a creative atmosphere, can be assigned a significant role, for the need for play is undoubtedly in human life. 'Play is an inseparable part of proper development' (Poledňák 1984: 76). It is not just a childhood- and adolescence activity, but play is even related to adulthood and old age; it accompanies human life in various forms. During cognitive development in early and preschool age, *play is both a sensorimotor and dominant activity* (Leontyev, cit. Poledňák 1984: 77). At a later stage, it is symbolic, when functioning as a manifestation of thinking and speech. During periods of personality development, the importance of play cannot be neglected and ignored, for play is often a reflection of the subject's physical and social environment, his self-esteem and "self-interpretation," regulation and differentiation of feelings, and the derivation of tension or liberation. From a psychological perspective, in communities, groups and classes, play also provides an opportunity to enhance socialization processes, to deepen cooperation and build teams. From a pedagogical point of view, therefore, the play helps to bridge the professional immanentist position and contributes to the approximation and connection of the experiences and cognitive horizons of music, and of the teacher and the student (Richter 1984). The foci of each lesson are those activities that result in inventive product creation. From a pedagogical point of view, the presence of play is evident, which, on the one hand, functions as a tool for community bonding, and, on the other hand, provides a fertile ground for achieving the goals of development.

Creative singing and music lessons, musical games, and applied musical-kinetic activities clearly have ability-developing and personality-building qualities. These classes and activities are highly popular due to their dynamic character, colourful content, cheerful, liberated atmosphere and last but not least because of their creative elements. As for their advantage, they greatly influence concentration, stimulate musical hearing, and harmoniously coordinate the participants' audio-visual and motor perceptions. In many cases, different musical games and physical exercises even cultivate the manifestation and expression of movement. They thus have a multifaceted effect on the process of personality development.

4 Several examples of examining musical ability development

The positive results and ability-developing effects of active musical activities have already been proven in many studies, both internationally and domestically, more particularly in the last few decades. The requirements of modern education are met by creative activities that have a broad transfer effect, that spread the results of their development and a multitude of abilities over a large area. Finally, progressive education demands activities that positively influence learners' complex personality development. Music is undoubtedly one of the best tools to accomplish this goal. This is evidenced by the successful application of modern and progressive music-pedagogical

methods, principles, techniques and their various adaptations, as well as by the results of research in the field.

Among the acknowledged international personality development trends in music pedagogy, the results and impacts of the adaptation of Dalcroze and Orff's principles to pedagogical practice are well-known. *Émile Jaques Dalcroze's* (1865-1950) internationally proven concept was introduced to the professional and general public; it focused on the relationship between physical movement and music. Dalcroze created *eurythmy*, the essence of which is to examine the relationship and impact of music and movement.⁴ The concept and goal of *Dalcroze's eurythmy* is, above all, to deepen the rhythm formation and to develop a sense of rhythm. This is a significant help in understanding and perceiving music. He described his method as follows: 'The method I have created, which bears my name, aims to harmonize an individual's intellectual and physical abilities with the help of music' (Dalcroze, cit. Szőnyi 1988: 9). In addition, *Carl Orff's* (1895-1982) concept of music pedagogy is based on four decades of practice. The aim of the *Günther School of Dance and Gymnastics*, founded together by Orff and *Dorothea Günther* (1896-1975), was to combine music and physical movement in the curricula of dance and gymnastics teachers and thus to strengthen the pedagogical and practical essence of complexity.

Dalcroze 'experimented' with children, Orff's, with young adults. The ability-developing effect of their music-pedagogical concept is supported from the perspective of both general and musical abilities. These were manifested in the following aspects: rhythm strengthens and coordinates muscle movements, develops eye-hand-body coordination and hearing also contributes to this; there is an opportunity for the child to express himself / herself freely, thus developing imagination and creativity; it affects his/her temperament and psychic development; enhances attention and concentration; contributes to the harmonious personality development; helps reduce tension – relaxation are play are very important after a school-day, but, at the same time, they help increase the child's attention and interest; develop the individual's adaptability within the community.

Consequently, it can be admitted that the application of Dalcroze's and Orff's pedagogical principles in effect significantly contribute to the simultaneous and complex development of an individual's abilities and personality (Szőnyi 1988).

The ability and personality development of music education has also been studied by other researchers and music educators. The world-famous and widely used Kodály method has a scientifically proven impact on ability development, which has been the subject of several representative researches. The music-pedagogical study of *Klára Kokas* (1929-2010) enjoys an international recognition; the scholar's aim was to assess the effect of music education on the development of abilities by using the Kodály method. The ability-building effect of music education has been proven in music education as well as in other fields and subjects; specifically, in language education, mathematics, memory and attention, mobility skills and other skills.⁵ 'The observation ability of music groups increased in rhythm learning, and they also gave better results in visual tasks. Rhythm formation has an attention-enhancing effect on mathematics and more punctual hearing, on spelling. Therefore, one subject has an effect on the other and contributes to the development of psychic functions (...) Music education – conducted according to the Kodály method – has a transfer effect on the child's other abilities, namely balance and

⁴ Dalcroze's method of *eurythmy* combines elements of music pedagogy and music therapy, i.e., it simultaneously focuses on the development of musical abilities, skills and complex personality development (Tóth-Bakos 2016).

⁵ In physical education (PE), the results of anthropometric (movement) studies showed that the results of balance and rhythmic-free exercises were remarkably better in the musical groups. In math, children from musical groups solved arithmetic problems in a significantly shorter time than children who were less involved in music. Also, there was a strong significant difference in the results of the spelling exercises performed in *Hungarian grammar lessons* in favour of the musical groups.

³ Cf. e.g. Kohler 1968, Fenger 1961, Schütz 1962

observation skills, as well as arithmetic and spelling performance' (Kokas 1972: 108). Summarizing Kokas' research, it can be stated that compared to other school subjects, the practice of music education showed clearly better results among children participating in everyday music lessons.

Kodály's educational ideas, resp. the impact assessment of singing and music and its idea of personality development also engaged many researchers. Among others, using complex psychological and pedagogical surveys, *Ilona Barkóczi and Csaba Pléh* intended to explore the effects of regular singing, music making, physical movements and listening to music on the whole human personality. The experiences and results gained during their research were presented to the public in their paper entitled 'A Psychological Follow-up Study of the Method of Kodály's Music Education' (*Kodály zenei nevelés módszerének pszichológiai utánvizsgálata*). The researchers proved their hypotheses according to which *the general level of intelligence* – regarding the intelligence examined with traditional methods – *did not change* under the influence of the Kodály method, but *the developing effect of music education in creativity* was clear (Barkóczi-Pléh 1977: 141).

The correlation between intelligence and creativity has increased as a result of music education. The number of those who had good intelligence but poor creativity decreased. Social differences also played a significant role in intelligence-studies. Among the children, they were of higher and lower social status. The creativity-enhancing effect of music education has been demonstrated to a great extent in lower-class groups. '*In children with low social status, the disproportion between verbal and non-verbal intelligence has equalized or decreased; in other words, the structure of intelligence has become more balanced. All this suggests that the compensatory effect of music education on cultural disadvantage is realized through the structure of intelligence and the development of creativity*' (Barkóczi-Pléh 1977: 142).

As the above-mentioned studies show, active music, singing, musical movement, creative music classes and diverse creative activities – with a systematic order of skill development – primarily affect the individual's emotional world and exert their multifaceted positive transfer effects at all stages of development.⁶

5 A study of ability development among student teachers with the help of vocal and instrumental activities

5.1 The subject, purpose and process of a music-pedagogical research

The music-pedagogical concepts and ability development studies outlined above made it justified to examine the ability- and personality development effects of instrumental and vocal-instrumental activities among student teachers.

Research objectives: to survey the impact of creative musical activities, the transfer effect of the use of instrumental play and vocal-instrumental activities.

The research process: in the process of the study, the music education with first-year pre-school- and teacher trainees took place in 2 small groups (6-6 people), in two terms. The members of the group were heterogeneous in terms of knowledge of music and piano playing. In the period between the initial and final phases of the study, we used an alternative method in which we focused on instrumental education based on acoustic elements. The aim was to avoid the way of acquiring self-serving academic knowledge and to prioritize the acquisition of pragmatic knowledge for the purpose of creative music education. This

process included enriching music education with instrumental, vocal-instrumental, musical-kinetic elements and activities.

The *research methods* were aimed at examining ability structures and approaching developmental trends. The main phase of the study series covered solving written music tests and reproducing tasks. A deductive research method was used for the study. Musical abilities were examined in a multidimensional system, adapted to the specific conditions of music and instrumental teaching.

Accordingly, we focused our studies on 4 areas: 1.) *rhythm*, 2.) *written auditory* and 3.) *auditory reproductive examination tasks* and 4.) musical activities focusing on the study of *instrumental play*.

5.2 Content and course of the research

In our ability-research, we monitored the process of musical development and surveyed the development of individual abilities and skills. Based on the results, we were able to draw conclusions that testify to the positive results of ability development.

The traditional music- and instrument playing education first teaches sounds and the system of sounds; only then does it turn to melodies and the unity of melodies. The pedagogical approach – mostly based on the vast majority of nursery rhymes and folk songs – primarily focuses on the text and the musical text. A melody is the first structural unit that – like the sentences, words and syllabi used in speech and written text – can be broken down into musical sentences and motifs. In grammar, the syllable represents microstructure, the sentence, the unity whereas in music the motif represents microstructure and the melody, unity. Students performed singing, writing, reading, and instrumental musical activities through the common use of microstructures and unity. Thus, the musical language and its structure became a *model-construction* for them, often using spontaneous forms of activity. In such learning process, '*the learnt musical language becomes their own to such an extent that it is also used in free improvisation [...] and is transferred to other learning activities*' (Kokas 1972: 16).

The positive features of the pedagogical approach applied to the development of musical skills could be found in the realization of vocal-instrumental reproductions, musical productions and in the form of individual chamber plays and chamber groups' plays. An important pillar of our alternative method was the simultaneous act of musical instrument playing and singing. The instrument playing accompanied by singing makes the composition 'lively,' for the students receive the rhythmic and melodic elements, the microstructures of the structure of the composition with their own vocal-instrumental reproduction.⁷

We can establish several correlations between certain areas of the alternative method used in the process of our ability-research. Many musical perceptions stem from physical movement. When it comes to teaching students to play a musical instrument, it is better to guide beginners not by counting but by perceiving the pulsation of the songs. Awareness of rhythmic forms proved more useful after the primary rhythmic experience. The acquisition of rhythm and melodic motifs was aided by music-related *sensorimotor performances*, such as walking to the rhythm, mostly applauding, drumming, and so on.

The basics of sensorimotor rhythm exercises are thus activities that use elements of movement based on materials of singing, vocal-instrumental reproductions, nursery rhymes and folk songs. Hearing training is also an integral part of the rhythm training process regardless of whether we are talking about

⁶ See also: BAKOS, A.: *Zenepedagógia és zeneterápia* (2014); CSEHI, A.: *A zenei képességek és a kisgyermekkorú személyiségfejlődés kölcsönhatása* (2018); TÓTH-BAKOS, A.: *Mozartov efekti - može hudba zlepšiti inteligenciju a kognitivne sposobnosti?* (2015); TÓTH-BAKOS, A. – CSEHIOVÁ, A.: *Music and Brain - Music Training Transfer* (2016).

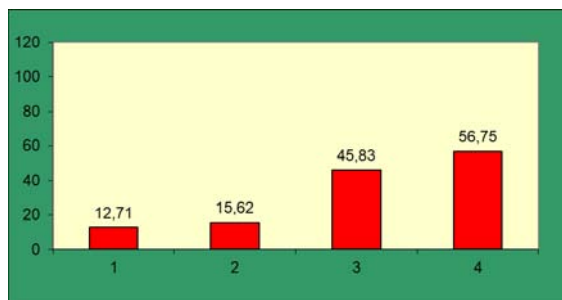
⁷ In our study, we worked with two types of microstructures. We first focused on the rhythm exercises, then on the melody motifs (the melody already contains the rhythm). It is also effective to present the same material in a variety of forms. Above all, we emphasize the increase of the durability of the "experiential" memorized material, as well as the search for correlations between the individual elements; not only to recall the acquired knowledge, but to be able to apply it in new circumstances.

external or internal hearing training – since hearing is an active activity of consciousness.

5.3 Research results

The development of musical abilities of the two examined groups was monitored by observing each musical dimension. These are: 1. rhythm, 2. hearing – writing, 3. hearing – reproduction, 4. musical instrumental reproduction.

There was a positive result in each of the four areas examined. In the field of rhythm, the development showed an improvement of 12.71%, in the field of hearing-writing, 15.62%, and in terms of hearing-reproduction, 45.83%. The fourth area showed the highest significant difference, with the largest change showing improvement in instrumental reproduction, at 56.75% (Graph 1).



Graph 1: The development of the groups' musical abilities based on the examination of each musical dimension

Based on the overall results of our ability-examination, it can be stated that the systematic and consistent training of musical skills leads to an intensive progression in the development of both specific and general abilities of students. Based on the qualitative analysis of quantitative indicators, we summarize all this on the basis of the following specific aspects:

Ability development in terms of special / musical abilities:

- The parallel application of singing and instrument playing helps the process of teaching creative vocal-musical plays and instrumental plays based on acoustic elements;
- Observing and listening to the co-sounds of singing and the applied musical instruments help the auditory imagination;
- Using folk songs and nursery rhymes, the combined sounding of melody and lyrics develop the auditory imagination;
- The frequent use of pauses helps wait patiently and be aware of them;
- Enhancing auditory and visual memory and their interaction;
- Getting to know the joy and experience of common music making, listening to each other and strengthening cooperation by singing and playing the instruments together;

Ability development in terms of general abilities:

- Rhythm exercises develop the ability to concentrate;
- Systematic practice of singing and vocal-instrumental reproductions strengthens, deepens attention and concentration;
- Voluntary musical activities develop imagination and creativity;
- Playful musical activities promote and increase interest in music;
- By observing and following the instructions accurately, the duration of attention increases;
- Getting to know one's own and other cultures and traditions with the help of folk songs;
- Learning the rules of collective work by 'singing and playing together';

- Musical games and creative musical exercises reduce tension;
- The pursuit of individual expression and self-expression is increased;
- Through the achieved feeling of success, a positive self-awareness is formed.

5.4 Summary

Based on the results described above, it can be concluded that music, music education and creative vocal-music and instrument-playing education have a positive effect and a significant transfer effect on skill development, musical and other abilities. Above all, it positively influences inner hearing and intonation skills, the quality of instrumental and vocal-instrumental performances. Furthermore, considering some of the psychic factors, this education has a beneficial impact on observation skills; it improves concentration, reduces anxiety and last but not least increases self-confidence. The good results and the intensive development of skills and abilities can be explained by the persistent and focused attention gained during music training. Music education and instrument-playing education make students active with their diverse auditory, visual and motor stimuli. Vocal-instrumental musical activities and common music-making have a rich emotional content, evoke a series of experiences, so they also contain elements of experiential pedagogy (Csehi-Kanczné 2019). *'The artistic experience is a complex content of consciousness and spiritual state, into which emotional, intellectual and wilful elements, reality and imagination, precisely expressed thoughts, feelings, desires and aspirations – that have not reached the level of consciousness – are intertwined. It is in this way that the experience captures the person so deeply and in many ways. There are huge pedagogical opportunities in this'* (Dobray 1983: 11).

Due to their creative and experiential value, the artistic experiences can have a lifelong effect on the young adults' lives. *'Even if there is only one moment, the magnitude of life can be measured on the magnitude of that moment (...)'* (Kanczné 2007: 123). As a result, the various 'stimulus effects' together help develop abilities, that is the physiological basis of the transfer effect. The transfer effect is primarily ensured by the variety of creative activities and tools used in learning and practice, and the systematic and experiential training of musical abilities and skills. Thus, special abilities and skills not only have an impact on musical competencies, but have also been demonstrated during complex personality development.

6 Conclusion

Creative musical activities, vocal-instrumental tasks and creative music education contribute significantly to the development of musical abilities, but also have a positive effect on other abilities and on the development of higher psychic functions. Its influence transcends the boundaries of the content and material of music and determines the development of the whole personality. It is also an effective tool for spiritual and character education. Intellectual development can be interpreted by the reception of new information, the understanding of connections and by the formation of logical thinking. Character development is the development of the personality itself. After all, the musical experience can not only convey emotions, but it also shapes the individual's moral judgment, worldview and aesthetic taste.

'With music, we don't only learn music. Singing liberates, encourages, heals from inhibitions and shyness. It concentrates, improves physical and mental disposition, makes you feel like working. It makes you more suitable and accustomed to attention and discipline. It develops a sense of community. It moves the whole person' (Kodály 1974: 304).

Literature:

1. BAKOS, A.: *Zenepedagógia és zeneterápia*. In: Zborník medzinárodnej vedeckej konferencie Univerzity J. Selyeho -

- 2014: "Nové výzvy vo vede a vo vzdelávaní". Sekcie pedagogických a humanitných vied. Komárno: Univerzita J. Selyeho, 2014. P. 13-22. ISBN 978-80-8122-073-9
2. BARKÓCZI, I. – PLÉH, Cs.: *Kodály zenei nevelés módszereinek pszichológiai utánvizsgálata*. Kecskemét: Kodály Zenepedagógiai Intézet, 1977. 154 p. ISBN 963 02 0521 1
3. CSEHI, A.: *A zenei képességek és a kisgyermekkorai személyiségfejlődés kölcsönhatása*. In: VIII. Trefor Ágoston SZFP Konferencia. Budapest, 2018. P. 89-101.
4. CSEHI, A. – KANCZNÉ NAGY, K.: *Az élménypedagógia helye és szerepe a felsőoktatásban*. In: Neveléstudományi kutatások a Kárpát-medencei oktatási térben. A IV. Kárpát-medencei Oktatási Konferencia tanulmánykötete. Pedagogical Research in the Carpathian Basin Educational Space. 4th Carpathian Basin Educational Conference. Oradea. 2019. P. 362-374. ISBN 978-80-8122-310-5
5. DOBRAY, I.: *A zenehallgatás feladatrendszere és módszere*. Budapest: Tankönyvkiadó, 1983. 112 p.
6. DOMBI KEMÉNY, E.: *A zenei képességvizsgálatok kézikönyve*. Szeged: Vántus István Társaság, 1999. 56 p.
7. ERŐS, I.: *Zenei alapképesség*. Budapest: Akadémiai Kiadó, 1993. 153 p. ISBN 963-056-507-2
8. FALUS, A.: *Zene és egészség. Zene-Egészség-nevelés-test-lélek*. Budapest: Kossuth Kiadó, 2016. 303 p. ISBN 9 789630 986304
9. FRANĚK, M.: *Hudební psychologie*. Praha: Karolinum, 2007. 238 p. ISBN 802-460-965-2
10. GEMBRIS, H. (2002): The development of musical ability. In: Colwell, R., Richardson, C.: *The new handbook of research on music teaching and learning*. New York, Oxford University Press, 2002. P. 487–509
11. GORDON, E. E. (1971). *The psychology of music teaching*. Englewood Cliffs, NJ: Prentice-Hall
12. HORVÁTHOVÁ, K.: *Redundancy in the verbal communication of teachers in primary education*. DOI 10.1515/jolace-2017-0030 Journal of Language and Cultural Education. 2017. Vol. 5, no. 3, p. 93-107. ISSN 1339-4584. WoS.
13. JANURIK, M. – JÓZSA, K.: *A zenei képességek fejlődése 4 és 8 éves kor között*. MAGYAR PEDAGÓGIA, 2013. 113. évf. 2. sz., p. 75–99.
14. KANCZNÉ NAGY, K.: *A logoterápia és egzisztenciaanalízis alkalmazásának lehetőségei a nevelésben*. Gyermek-Nevelés-Pedagógusképzés. Budapest: Trezor Kiadó, 2007. 123 p. ISSN 1589-7370
15. KODÁLY, Z.: *Visszatekintés*. Budapest: Zeneműkiadó, 1974. 346 p. ISBN 963 330 034 7
16. KOKAS, K.: *Képességfejlesztés zenei neveléssel*. Budapest: Akadémiai Kiadó, 1972. 205 p. ISBN 9630562855
17. MARTON, Á., JANURIK, M.: *Zenei készségfejlesztés kisgyermekkorban*. In: PEDAGÓGIAI FOLYÓIRATOK. Új köznevelés. 2016. 72. / 4. www.folyoiratok.ofi.hu/uj-koznevel-es/zenei-keszsegefejleszt-es-kisgyermekkorban
18. MÁTEJOVÁ, Z.: *Základy teórie a praxe muzikoterapie*. Bratislava: Univerzita Komenského, 1993. 138 p. ISBN 80-223-0401-8
19. MICHEL, P.: *Zenei képesség, zenei készség*. Budapest: Zeneműkiadó, 1964. 141 p.
20. ORSOVICS, Y. – STRÉDL, T. – SZABÓOVÁ, E. – VASS, V.: *A személyiségfejlesztés új kihívásai a nemzetiségi óvodákban és iskolákban*. Komárno: Univerzity J. Selyeho, 2018. 161 p. ISBN 978-80-8122-282-5
21. PAVLOVSKÁ, O.: *Pôsobenie hudby na handicapované deti*. Bratislava: SPN, 1980. 68 p.
22. POLEDŇÁK, I.: *Stručný slovník hudební psychologie*. Praha: Supraphon, 1984. 459 p. ISBN 02-008-84
23. SCHWARZER, G.: Analytic and holistic modes in the development of melody perception. *Psychology of Music*, 1997, 25. P. 35–36.
24. SZÖNYI, E.: *Zenei nevelésirányzatok a 20. században*. Budapest: Tankönyvkiadó, 1988. 159 p. ISBN 963-180-510-7
25. TEPLOV, B. M.: *Psychologie hudebních schopností*. Praha: SHV, 1965. 227 p.
26. TICHÁ, L.: *Slyšet a myslet u klavíru*. Praha: Akademie múzických umění, 2009. 176 p. ISBN 978-807-331-151-3
27. TÓTH, P.: *Egyéni különbségek szerepe a tanulásban. A tanulási stílus*. Kutatási Füzetek I. Óbudai Egyetem. Trefort Ágoston Mérnökpedagógiai Központ, Budapest: 2011. ISBN 978-963-88946-5-6
28. TÓTH-BAKOS, A.: *Music education and music therapy*. INTED 2016 Proceedings: 10th International Technology, Education and Development Conference. Valencia: IATED, 2016. ISBN 978-84-608-5617-7. ISSN 2340-1079, p. 1643-1652. WoS.
29. TÓTH-BAKOS, A.: *Mozartov efekt - môže hudba zlepšiť inteligenciu a kognitívne schopnosti?* In: Zborník medzinárodnej vedeckej konferencie Univerzity J. Selyeho: "Inovácia a kreativita vo vzdelávaní a vede" - Sekcie pedagogických vied. Komárno: Univerzita J. Selyeho, 2015. CD-ROM. P. 163-172.
30. TÓTH-BAKOS, A. – CSEHIOVÁ, A.: *Music and Brain - Music Training Transfer*. INTED 2016 Proceedings: 10th International Technology, Education and Development Conference. Valencia: IATED, 2016. ISBN 978-84-608-5617-7. ISSN 2340-1079, p. 1726-1732. WoS.
31. TURMEZEYNÉ HELLER, E. – MÁTH, J. – BALOGH, L.: *A zenei képességek fejlődésének vizsgálata*. MAGYAR PEDAGÓGIA, 2005. 105/2. P. 207–236.

Primary Paper Section: A

Secondary Paper Section: AM

THE ANALYSIS OF DROP-OUT IN THE POTENTIAL DIAGNOSTIC SYSTEMS FOR SELF-HARM IN THE ADOLESCENT POPULATION

^aSLAVKA DEMUTHOVA, ^bOGNEN SPASOVSKI

*University of Ss. Cyril and Methodius in Trnava, Nam. J. herdu
2, 917 01 Trnava, Slovakia*
email: ^aslavka.demuthova@ucm.sk, ^bognen.spasovski@ucm.sk

This work was supported by the Slovak Research and Development Agency under contract No. APVV-17-0123.

Abstract: The paper addresses the potential for the identification of self-harming individuals in the adolescent population through three different systems – the SHI questionnaire (Self-Harm Inventory), the definitions of intentional self-harm from ICD-10 and the diagnostic criteria listed for Non-Suicidal Self-Injury in DSM-5. It is followed by an evaluation of their effectiveness based on the extent of the undetected cases of self-harm. The study was conducted on a sample of 2,210 Slovak adolescents aged from 11 to 19 (mean age = 15.3; st. dev. = 1.67 years). The DSM-5 system proved to be the least effective, with a statistically significant (sig. = 0.000) drop-out of cases. For the purpose of diagnosing self-harm in the adolescent population, we propose a checklist of the forms of self-harm, which would, in addition to direct forms of physical self-harm, also include indirect physical and mental forms.

Keywords: self-harm, diagnostics, prevalence, adolescents.

1 Introduction

One of the problems in the implementation of new nosological classifications is the determination of the diagnostic criteria. It is a relatively complicated process, which must work when applied to the symptoms of the specific disorder and surrounding circumstances as accurately as possible. For instance, it must define a disorder in a way that is distinct from other disorders, whether related or comorbid, and exhaustively set out a unique combination of symptoms, its typical longevity (possibly non-interchangeable), often along with a set of symptoms which cannot be present in the disorder (Balogh, Miller, & Ball 2015). In clinical psychology and psychiatry, the process is even more complicated as many of the symptoms of mental disorders and difficulties are related to the subjective experience of the individual affected and since there are only a few biological tests that are available for use in the diagnosis (Pincus 2014), it is only rarely possible to measure them in an exact manner, as is done in the field of medicine. Yet, there are diagnostic manuals available in psychology and psychiatry that point to the presence of a mental disorder using the registration of symptoms – these mainly include international systems of classification such as the DSM (Diagnostic and Statistical Manual of Mental Disorders) and ICD (International Classification of Diseases).

Experts who have observed the mental health of young children and adolescents over the last few decades have reported an increase in the number of mental problems and difficulties. This includes both the prevalence of problems (see e.g. Comeau, Georgiades, Duncan, Wang, Boyle, & 2014 Ontario Child Health Study Team 2019; Chadda 2018; Jurewicz 2015), as well as the emergence of new forms of mental difficulties that are still not reflected in the diagnostic manuals. One of these forms is self-harm – a maladaptive strategy for coping with mental problems in youth, leading to intentional harm of one's own health. Self-harm as such is not a novel concept in psychology and psychiatry. However, in the past it was associated with certain psychiatric diagnoses and mental disorders – autism (Maddox 2017), mental retardation (van den Bogaard, Nijman, Palmstierna, & Embregts 2018), attempted suicide (Brent 2011), borderline personality disorder (Glenn & Klonsky 2013), sexual abuse (Klonsky, Victor, & Saffer 2014),... and was considered to be a concomitant symptom of these diagnoses. Yet, recent research has suggested that self-harm tends to appear in the psychiatrically intact adolescent population and that it occurs independently of any diagnosis of borderline personality disorder (Glenn & Klonsky 2013) or sexual abuse (Klonsky & Moyer 2008).

This data has clearly proved that self-harm as a diagnosis should be removed from the field of psychiatric conditions and

transferred into the field of clinical psychology or the area of work with the non-clinical adolescent population. This is also confirmed by international studies that sometimes report the prevalence of self-harm among youths at a level of 20 – 70% (Swahn, Ali, Bossarte, Van Dulmen, Crosby, Jones, & Schinka 2012; Plener, Libal, Keller, Fegert, & Muehlenkamp 2009; Dyl 2008; Hallab & Covic 2010), with a proportion of them being included in the non-clinical population (Burešová 2012). In the Slovak population (Démuthová & Démuth 2020), this phenomenon appears to affect approximately 45% of adolescents. A possible reason that the data on the prevalence of self-harm exhibits such a very wide spectrum of values in the various studies (from 1% – Madge et al. 2008; up to 69% – Hallab & Covic 2010) is the lack of a clear definition and diagnostic criteria for self-harming behaviour. Certain diagnostic systems consider self-harm to only be behaviour that exclusively leads to visible physical damage to the bodily tissue (cutting, burning, etc. used in studies e.g. by Rojkova & Mickova 2020), while other systems also include less visible forms (e.g. the intentional consumption of indigestible objects, taking drugs not prescribed by a doctor or intentionally failing to follow a prescribed treatment) or even mental self-harm (e.g. torturing with self-defeating thoughts, setting up in a relationship to be rejected).

Hence, there are several definitions and possible “diagnostic systems” for the evaluation of self-harm – generally, they may be classified into three groups. The first is the narrowest and is represented by the most recent (fifth) revision of the Diagnostic and Statistical Manual of Mental Disorders (DSM-5), published by the APA (American Psychiatric Association). It has proposed diagnostic criteria for “Non-Suicidal Self-Injury” (NSSI) disorder in “Section III – Emerging Measures and Models” and it defines NSSI as: “intentional self-inflicted damage to the surface of their body of a sort likely to induce bleeding, bruising, or pain (e.g. cutting, burning, stabbing, hitting, excessive rubbing), with the expectation that the injury will only lead to minor or moderate physical harm (i.e. there is no suicidal intent)” (DSM-5 2013, 803). The second may be implicitly identified in the diagnostic system ICD-10 (International Statistical Classification of Diseases and Related Health Problems, 10th version). It defines the term “intentional self-harm” as a wide range of behaviours (see categories X60 – X84) and it is a category that falls under “External Causes of Morbidity and Mortality” (ICD-10, 2016). The extent of the individual types of self-harming behaviour in ICD-10 is broader than in DSM-5 and includes hidden/indirect physical self-harm, such as deliberate poisoning, taking drugs not prescribed by a doctor and the like. Finally, there are approaches that view self-harm as any intentional act that results in damage to health of the individual – whether physical or mental. One such approach is the creation of a methodology to measure self-harm – the SHI questionnaire (Self-Harm Inventory – Sansone & Sansone 2010), which is intended to capture various types and forms of this behaviour.

It is clear that the definition of what should (or should not) be deemed self-harm and which diagnostic criteria should be used will have a significant impact on the data obtained with regard to prevalence. Consequently, an individual may be captured under one system and not by another, and as a result, they may not be diagnosed and provided with the necessary intervention and treatment. Previous observations of this issue have revealed, for instance, that of the 835 participants identified as self-harming by the SHI, 41.9% (N=350) exhibit self-harming behaviour which, according to the DSM-5 criteria, is not classified as belonging to NSSI ((Demuthova & Demuth 2019^a). At the same time, it is appropriate to limit the number of observed symptoms to the minimum necessary in order to ensure the efficiency of the diagnostic tools. The principle of Occam's razor in science postulates that the optimal strategy is to work with the smallest number of elements possible in any given situation. On the other

hand, it is necessary to analyse the impact that the narrowing of the diagnostic criteria might have on the identification of real cases of self-harm. If the narrowing of the criteria was practical but led to the drop-out of an overly large number of cases, it would be inappropriate.

Thus, in order to evaluate the advantages and disadvantages of the individual systems, it is desirable to analyse the drop-out, which is an indicator of the number of individuals that do not fall into the criteria set out in the three diagnostic approaches. A simple observation of the prevalence of individual forms of self-harm is not satisfactory in this case. Even though this may identify that, for example, indirect or mental forms of self-harm are just as frequent as direct physical forms, and thus provide valuable data for the correct understanding of the concept, it does not mean that all forms must fulfil the diagnostic criteria. In fact, it is quite possible that certain forms of self-harm (such as the above mentioned indirect or mental forms) are common, but are only rarely present without direct physical forms. And should this be true, the NSSI definition from DSM-5 would be limiting, but quite satisfactory to identify cases for diagnostic purposes.

2 Objective

The objective of the paper is:

- to employ three independent systems for the detection of self-harm (DSM-5 criteria, ICD-10 criteria, SHI-criteria);
- to discover what percentage of the observed cases of self-harm in the study population of adolescents can be captured by these systems;
- to evaluate the differences in the sensitivity of the individual systems and to assess their effectiveness in the diagnosis of self-harm.

3 Method

3.1 Participants and Procedure

The study sample was comprised of 2,210 Slovak adolescents (63.3% of whom were female) between the ages of 11 and 19 (mean age = 15.3; st. dev. = 1.67 years) who were in primary and secondary education. All participants were enrolled in the public-school system and were recruited from classes that were randomly selected from various public schools that represent all the different types of schools. Of the initial number of 2,210 responses, 387 (17.5%) were excluded due to a lack of complete data. Thus 1,823 adolescents were included in the statistical analyses. The data was collected anonymously from the subjects who (or their guardians) had given their informed consent for their participation. The questionnaire was administered in a standard manner by trained administrators.

3.2 Measures and Statistical Analysis

The platform used for the collection of data was a modified SHI questionnaire (The Self-Harm Inventory – Sansone & Sansone 2010). The original SHI is a self-assessment questionnaire that includes 22 questions that assess the existence of individual forms of self-harming behaviour. The items are preceded by the phrase “Have you ever intentionally, deliberately to cause yourself harm...” followed by the different forms of self-harm: “cut yourself, burned yourself, hit yourself, scratched yourself”, etc. (for all the items see Table 1). The items were slightly modified according to studies that observed the prevalence of the most frequent forms of self-harm in the study population (see e.g. Demuth & Demuthova 2019; Demuthova & Demuth 2019B) and the participants were also asked to report how many times they had repeated the behaviour as well as the frequency (0=never, 1=rarely, 2=sometimes, 3=often). The relatively high internal consistency of this method has been confirmed through an analysis (Cronbach’s $\alpha=0.809$) (see e.g. Demuthova & Doktorova 2019). The aim of the questionnaire was to detect the presence and extent of the most common forms of self-harm. It also separated self-harming individuals from the studied group – in order to classify a participant as a member of the group of

self-harming individuals, it was necessary that they admitted to at least one form of self-harming behaviour with a frequency of 2 or 3 (sometimes or often), or to several forms of self-harming behaviour with a frequency of 1 or above.

The DSM-5 system only considers direct physical forms of self-harm and excludes attempted suicide. Hence, according to this criteria, self-harming individuals are those who reported at least one of the direct forms of self-harming behaviour in the SHI questionnaire (for the list, see Table 1). The ICD-10 system, with its broader categorisation, increases the number of observed types of self-harm with items that fall under the indirect forms of self-harm; however, it still does not take mental self-harm into account. All the indirect physical forms of self-harm were included in this system as they meet the criteria of the X84 category (“Intentional self-harm by unspecified means”). The SHI questionnaire represents the broadest diagnostic system, mapping a wide range of forms of self-harm. Within this system, self-harmers are identified as those individuals who meet one basic criterion – an admission to at least one form of self-harming behaviour with a frequency of 2 or 3 (sometimes or often), or an admission to several forms of self-harming behaviour with a frequency of 1 or above.

Tab. 1: Observed forms of self-harm and their classification in the individual systems

Have you ever intentionally, or on purpose, done any of the following:	Diagnostic systems		
	DSM-5	ICD-10	SHI
Forms of self-harm:			
<i>Direct physical self-harm:</i>			
Scratched yourself on purpose	x	x	x
Hit yourself	x	x	x
Cut yourself on purpose	x	x	x
Exercised an injury on purpose	x	x	x
Banged your head on purpose	x	x	x
Prevented wounds from healing	x	x	x
Burned yourself on purpose	x	x	x
Attempted suicide*		x	x
<i>Indirect physical self-harm:</i>			
Abused alcohol to hurt yourself		x	x
Not slept enough to hurt yourself		x	x
Starved yourself to hurt yourself		x	x
Over-exercised to hurt yourself		x	x
Made medical situations worse on purpose		x	x
Overdosed		x	x
Abused prescription medication		x	x
Abused laxatives to hurt yourself		x	x
<i>Mental self-harm:</i>			
Distanced yourself from God as a punishment			x
Set yourself up in a relationship to be rejected			x
Tortured yourself with self-defeating thoughts			x
Engaged in emotionally abusive relationships			x

*Note: Although attempted suicide is a direct and physical form of self-harm, DSM-5 strictly excludes it. For this reason, it was included in the ICD-10 and SHI systems.

Source: authors

The data analysis was conducted using IBM SPSS 22 statistical software. The statistical significance threshold (α) in each data analysis was set to 0.05.

4 Results

The first diagnostic criteria, based on the mapping of self-harm from the modified SHI questionnaire, detected 830 cases. The narrower diagnostic system, based on the ICD criteria, detected 803 cases, and the narrowest system, based on DSM-5, only 701 cases (see Table 2).

Tab. 2: Number of cases of self-harm detected using the three systems under study

Diagnostic system	Number of cases detected		Number of cases not detected	
	N	%	N	%
SHI	830	100	0	0
ICD-10	803	96.7	27	3.3
DSM-5	701	84.5	129	15.5

Source: authors

The total drop-out rate when using the ICD-10 diagnostic criteria (versus the SHI system) is moderate – it represents only 3.3% of cases. This difference is caused by the omission of the mental forms of self-harm; however, a closer analysis (see Table 3) indicated that the majority of cases that would be omitted if the ICD-10 criteria were used were in the following two items: “tortured yourself with self-defeating thoughts” and “engaged in emotionally abusive relationships”.

Tab. 3: Items from the SHI that are not included in the ICD-10 criteria and the corresponding number of participants that were not detected

Item	“dropped-out” cases	
	N	% of whole sample
<i>Mental self-harm:</i>		
Distanced yourself from God as a punishment	3	0.4
Set yourself up in a relationship to be rejected	5	0.6
Tortured yourself with self-defeating thoughts	20	2.4
Engaged in emotionally abusive relationships	19	2.3

Source: authors

An analysis of the drop-out rate coming from the use of the DSM-5 diagnostic system revealed that 129 (15.5%) cases would be left undetected versus the original SHI questionnaire. A statistically significant (sig. = 0.000) decrease in the number of cases detected also occurred when the DSM-5 criteria was used as opposed to the ICD-10 (see Table 4).

Tab. 4: Differences in the number of detected cases using the ICD-10 and DSM-5 systems

Cases within DSM-5:	Cases within ICD-10:		
	Detected (N/%)	Not detected (N/%)	Total (N/%)
Detected (N/%)	27/3.3	102/12.3	129/15.5
Not detected (N/%)	0/0.0	701/84.5	701/84.5
Total	27/3.3	803/96.8	830/100.0
Chi-Square test			
Pearson coefficient	Sig.		
151.65	0.000		

Source: authors

It is apparent that the indirect forms of self-harm that are included in the ICD-10, but are absent from DSM-5, are represented to a statistically significant rate in the population of self-harmers. The item analysis (see Table 5) revealed that this is mostly related to the following items: “abused alcohol to hurt yourself” (6.3% of all cases) and “not slept enough to hurt yourself” (4.1% of all cases).

Tab. 5: Items from ICD-10 that are not included in the DSM-5 criteria and the corresponding number of participants that were not detected

Item	“dropped-out” cases	
	N	% of whole sample
Attempted suicide*	2	0.2
<i>Indirect physical self-harm:</i>		
Abused alcohol to hurt yourself	52	6.3
Not slept enough to hurt	34	4.1

yourself		
Starved yourself to hurt yourself	23	2.5
Over-exercised to hurt yourself	31	3.7
Made medical situations worse on purpose	11	1.3
Overdosed	1	0.1
Abused prescription medication	4	0.5
Abused laxatives to hurt yourself	0	0.0

Source: authors

5 Discussion

The basic (modified) SHI questionnaire identified a rate of self-harm among adolescents of 45.5%. This prevalence is comparable to the data reported by Dyl (2008), who reported 47% of adolescents. In comparison to an overview of the prevalence of self-harm in similar studies (4.7% – Madge et al. 2008; 8% – Moran et al. 2012, 9.3% – Tjørnmoen, Rossow, Larsson, & Mehlum 2013; 10% – Hawton, Saunders, & O’Connor 2012; 20.3% – Swahn et al. 2012; 25.6% – Plener et al. 2009) it is one of the higher rates of prevalence. This might be caused by more up-to-date data, which might have captured the recent trend in the increase of self-harm among adolescents (Clarke, Allerhand, & Berk 2019), or by the fact that the sample had a slightly higher proportion of female subjects (63.3% of females vs. 36.7% of males). Several studies (see e.g. Laye-Gindhu & Schonert-Reichl 2005; Rodham, Hawton, & Evans 2004, Demuthova & Doktorova 2019) have reported a higher prevalence of self-harm in female participants.

The modified SHI questionnaire covers a wide range of self-harming behaviours including mental forms (not included in ICD-10 and DSM-5) and indirect physical forms (not included in DSM-5). It is one of the more complex questionnaires used for the identification of self-harming behaviour – others (e.g. DSHI (Deliberate Self-Harm Inventory) – Gratz 2001) primarily focus on its physical forms. The disadvantage of the broader design of the SHI is the relatively large (20) number of items, which is inappropriate when setting out diagnostic criteria. Hence, the subsequent analyses examined how many of the cases that were identified by the SHI can still be detected by systems based on narrower criteria, such as ICD-10 and DSM-5 and, possibly, which items are important from the more broadly designed systems.

Using the ICD-10 system caused a drop-out of 27 self-harming adolescents. The ICD-10 system excludes four items in comparison to SHI, with a decrease in the ability to detect cases being negligible in only two of them: “distanced yourself from God as a punishment” and “set yourself up in a relationship to be rejected” (less than 1% of cases). On the other hand, the other two items, “tortured yourself with self-defeating thoughts” and “engaged in emotionally abusive relationships”, were detected in more than 2% of the cases. Overall, using the ICD-10 criteria for the self-harming adolescent population would result in the non-detection of 3.3%. According to international studies, the items “distanced yourself from God as a punishment” and “set yourself up in a relationship to be rejected” are not commonly found forms of self-harm – the reported prevalence is only 2.6% (“set yourself up in a relationship to be rejected”) and 1.4% (“distanced yourself from God as a punishment”) (Müller, Claes, Smits, Brähler, & de Zwaan 2016). Still, there are specific cases that are exceptions – e.g. adult patients with chronic pain (Sansone, Sinclair, & Wiederman 2009). At the same time, the reported prevalence of the items “tortured yourself with self-defeating thoughts” and “engaged in emotionally abusive relationships” is respectively 30% (“tortured yourself with self-defeating thoughts”) and 6% (“engaged in emotionally abusive relationships”) (Müller, Claes, Smits, Brähler, & de Zwaan 2016) and we deem their exclusion from the self-harm checklist (especially in the case of “tortured yourself with self-defeating thoughts”) to be excessively narrowing for the purposes of diagnosis.

The application of the DSM-5 system led to a statistically significant decrease in the number of detected cases (sig. = 0.000), even when compared to the already narrowed ICD-10 system. The decrease was primarily caused by four items: "abused alcohol to hurt yourself", "not slept enough to hurt yourself", "starved yourself to hurt yourself" and "over-exercised to hurt yourself" – all of them have the potential to detect 2 to 6% of cases. It is apparent that indirect forms of physical self-harm represent a crucial element of self-harming behaviour. Without recording them, 129 (15.5%) cases of self-harm in adolescents would "be lost". Considering the fact that two items ("not slept enough to hurt yourself", and "over-exercised to hurt yourself") were added as part of our research (modification of the SHI questionnaire), it is impossible to compare them with other (international) studies. According to our findings (Demuth & Demuthova 2019), their prevalence is as high as 52.5% ("not slept enough to hurt yourself") and 26.1% ("over-exercised to hurt yourself"). Considering their high prevalence, we believe it is very necessary to integrate them into any diagnostic checklist.

6 Conclusion

The application of three independent systems for the detection of the presence of self-harm (the DSM-5 criteria, ICD-10 criteria, SHI criteria) revealed that the most substantial drop-out of cases of self-harming behaviour occurred when using the DSM-5 criteria. The system failed to detect 15.5% of self-harming adolescents, and the analysis identified items which should be preserved for diagnostic purposes. It appears that it is viable to define self-harm in accordance with the ICD-10 criteria, with the possibility of using the most frequent forms of self-harm as identified by the SHI questionnaire. In order to draw more unambiguous conclusions, we suggest the further analyses of a sample that is more balanced in terms of gender representation. At the same time, it would be appropriate to investigate the prevalence of other forms of intentional self-harm that are included in the ICD-10 criteria (e.g. choking, throttling, searing with acid, etc.) and were not examined in our research, and to assess their diagnostic potential. A subsequent factor analysis of the items (of self-harm forms) could also be helpful in terms of the extended analysis of other forms of self-harm.

Literature:

- Balogh, E. P., Miller, B. T., & Ball, J. R. (eds.) (2015). *Improving Diagnosis in Health Care*. Washington (DC): National Academies Press.
- Brent, D. (2011). Nonsuicidal self-injury as a predictor of suicidal behavior in depressed adolescents. *The American Journal of Psychiatry*, vol. 168 (5), 452–454.
- Chadda R. K. (2018). Youth & mental health: Challenges ahead. *The Indian Journal of Medical Research*, 148 (4), 359–361.
- Clarke, S., Allerhand, L. A., & Berk, M. S. (2019). Recent advances in understanding and managing self-harm in adolescents. *F1000Research*, 8, F1000 Faculty Rev-1794, doi: 10.12688/f1000research.19868.1.
- Comeau, J., Georgiades, K., Duncan, L., Wang, L., Boyle, M. H., & 2014 Ontario Child Health Study Team (2019). Changes in the prevalence of child and youth mental disorders and perceived need for professional help between 1983 and 2014: Evidence from the Ontario Child Health Study. *Canadian Journal of Psychiatry*. *Revue canadienne de psychiatrie*, 64 (4), 256–264.
- Demuth, A. & Demuthova, S. (2019). Forms of Deliberate Self-Harm and Their Prevalence in Adolescence. In: *International Conference on Research in Psychology*. London: Diamond Scientific Publication, 23–38.
- Demuthova, S. & Demuth, A. (2019^a). Questioning the DSM-5 proposal for the NSSI diagnostic criteria. *International Journal of Arts & Sciences' (IJAS) International Conference for Academic Disciplines*, 12 (1), 107–113.
- Demuthova, S. & Demuth, A. (2019^b). The Prevalence and Most Frequent Forms of Self-Harm in Adolescents. In: *International Conference on Research in Psychology*. London: Diamond Scientific Publication, 39–51.
- Demuthova, S. & Doktorova, D. (2019). Interpohlavné rozdiely v prevalencii jednotlivých foriem sebapoškodzovania u adolescentov [Gender differences in the prevalence of individual forms of self-harm in adolescents]. In: Baranovska, A. (ed.): *Kondášove dni 2018*. Trnava: Katedra psychológie Filozofickej fakulty UCM v Trnave, 19–32.
- DSM-5 (2013). *Diagnostic and Statistical Manual of Mental Disorders*. 5th ed. Washington: American Psychiatric Publishing.
- Dyl, J. (2008). Understanding cutting in adolescents: prevalence, prevention, and intervention. *The Brown University Child and Adolescent Behavior Letter*, vol. 24 (3), 4–6.
- Glenn, C. R. & Klonsky, E. D. (2013). Nonsuicidal self-injury disorder: An empirical investigation in adolescent psychiatric patients. *Journal of Clinical Child and Adolescent Psychology*, 42 (4), 496–507.
- Gratz, K. L. (2001). Measurement of Deliberate Self-Harm: Preliminary Data on the Deliberate Self-Harm Inventory. *Journal of Psychopathology and Behavioral Assessment*, 23 (4), 253–263.
- Hallab, L. & Covic, T. (2010). Deliberate self-harm: The interplay between attachment and stress. *Behaviour Change*, 27 (2), 93–103.
- Hawton, J. C., Saunders, E. A., & O'Connor, R. (2012). Self-harm and suicide in adolescents. *Lancet*, 379, 2372–2382.
- ICD-10 (2016). *International Statistical Classification of Diseases and Related Health Problems*. [Online]. World Health Organization. Available <<https://www.who.int/classifications/icd/icdonlineversions/en/>> [2019-07-15].
- Jurewicz I. (2015). Mental health in young adults and adolescents - supporting general physicians to provide holistic care. *Clinical medicine*, 15 (2), 151–154.
- Klonsky, D. E., Victor, S. E., & Saffer, B. Y. (2014). Nonsuicidal Self-Injury: what we know, and what we need to know. *The Canadian Journal of Psychiatry*, 59 (11), 565–568.
- Klonsky, E. D. & Moyer, A. (2008). Childhood sexual abuse and Non-Suicidal Self-Injury: Meta-analysis. *British Journal of Psychiatry*, 192 (3), 166–170.
- Laye-Gindhu, A. & Schonert-Reichl, K. A. (2005). Nonsuicidal self-harm among community adolescents: Understanding the "whats" and "whys" of self-harm. *Journal of Youth and Adolescence*, 34 (5), 447–457.
- Maddox, B. B., Trubanova A., & White, S. W. (2017). Untended wounds: Non-suicidal self-injury in adults with autism spectrum disorder. *Autism*, 21 (4), 412–422.
- Madge, N., Hewitt, A., Hawton, K., de Wilde, E. J., Corcoran, P., Fekete, S., ... Ystgaard, M. (2008). Deliberate Self-harm within an International Community Sample of Young People: Comparative Findings from the Child & Adolescent Self-harm in Europe (CASE) Study. *The Journal of Child Psychology and Psychiatry*, 49 (6), 667–677.
- Moran, P., Coffey, C., Romaniuk, H., Borschmann, R., Carlin, J. B., Patton, G. C. (2012). The natural history of self-harm from adolescence to young adulthood: a population-based cohort study. *Lancet*, 379 (9812), 236–243.
- Müller, A., Claes, L., Smits, D., Brähler, E., & de Zwaan, M. (2016). Prevalence and correlates of self-harm in the German general population. *PLoS ONE* 11 (6): e0157928. doi: 10.1371/journal.pone.0157928.
- Pincus H. (2014). *Diagnostic error: Issues in behavioral health*. Washington, DC: 2014. (Presentation to the Committee on Diagnostic Error in Health Care, November 6, 2014).
- Plener, P. L., Libal, G., Keller, F., Fegert, J. M., & Muehlenkamp, J. J. (2009). An international comparison of adolescent non-suicidal self-injury (NSSI) and suicide attempts: Germany and the USA. *Psychological Medicine*, 39 (9), 1549–1558.
- Rodham, K., Hawton, K. & Evans, E. (2004). Reasons for deliberate self-harm: comparison of self-poisoners and self-cutters in a community sample of adolescents. *Journal of the American Academy of Child and Adolescent Psychiatry*, 43 (1), 80–87.
- Rojkova, Z. & Mickova, Z. (2020). Osobnostné a motivačné faktory sebapoškodzovania u adolescentov na Slovensku [Personality and motivational factors of self-harm among adolescents in Slovakia]. *Psychologica*, recenzovaný vedecký zborník. Bratislava: FF UK, 73–81.
- Sansone, R. A., Sinclair, J. D., & Wiederman, M. W. (2009). Self-harm behavior among chronic pain patients. *Primary Care*

Companion to the Journal of Clinical Psychiatry, 11 (6), 362;
doi: 10.4088/PCC.08100751.

29. Sansone, R. D. & Sansone, L. A. (2010). Measuring self-harm behavior with the Self-Harm Inventory. *Psychiatry*, 74 (4), 1–20.

30. Swahn, M. H., Ali, B., Bossarte, R. M., Van Dulmen, M., Crosby, A., Jones, A. C., & Schinka, K. C. (2012). Self-harm and suicide attempts among high-risk, urban youth in the U.S.: shared and unique risk and protective factors. *International Journal of Environmental Research and Public Health*, 9 (1), 178–191.

31. Tørmoen, A. J., Rossow, I., Larsson, B., & Mehlum, L. (2013). Nonsuicidal self-harm and suicide attempts in adolescents: Differences in kind or in degree? *Social Psychiatry and Psychiatric Epidemiology*, 48 (9), pp. 1447–1455.

32. van den Bogaard, K., Nijman, H., Palmstierna, T., & Embregts, P. (2018). Self-Injurious behavior in people with intellectual disabilities and co-occurring psychopathology using the Self-Harm Scale: A pilot study. *Journal of Developmental and Physical Disabilities*, 30 (5), 707–722.

Primary Paper Section: A

Secondary Paper Section: AN

PRECONCEPTIONS ABOUT THE SELECTED PHENOMENON OF “SUCCESS” AS A POTENTIAL IDENTIFICATION TOOL FOR GIFTEDNESS IN CHILDREN OF PRE-PRIMARY EDUCATION

^aJANA DUCHOVIČOVÁ, ^bREBEKA ŠTEFÁNIA KOLEŇÁKOVÁ

*Department of Pedagogy, Faculty of Education
Constantine the Philosopher University in Nitra,
Dražovská cesta 4, 949 74 Nitra, Slovakia
email: ^ajduchovicova@ukf.sk, ^brkolenakova@ukf.sk*

This study was written within the project APVV-15-0368 Practice in the centre of the subject field didactics, subject field didactics in the centre of preparation for practice.

Abstract: The study aims to learn more about the specifics of a gifted child in the area of his/her ideas and to identify whether those ideas are different in their quality from the ideas of children who are not gifted. The identification of such a discrepancy could also be one of the indicators of giftedness and could be useful in the early pedagogical diagnosis of giftedness in pre-primary children. The subject of our article are preconceptions (creating ideas about phenomena, which mean the events that surround the child during his/her development) of children about the selected phenomenon of success and their comparison in terms of children's ability level. We were interested in whether there are discrepancies in the level of preconceptions of children who are assumed to have a certain level of giftedness, and other children. The design of the research is mixed, the data was obtained using the semi-structured interview method and projective techniques. The research results confirm a certain difference in the identified preconceptions of children in terms of intellectual abilities and the potential of identifying preconceptions as a tool to detect giftedness.

Keywords: Preconceptions about the Phenomenon of Success, Children of Pre-Primary Education, Giftedness.

1 Introduction

Giftedness is a phenomenon that resonates in professional circles for several decades. The quest to get to know the personality of a gifted child has a long history and has been influenced mainly by research in the field of motivation and creativity, which has largely been carried out in the middle of the last century. In pedagogical understanding, giftedness is perceived as a phenomenological issue, i. e. understanding gifted children as those who differ in cognitive performance and thinking, thus directly creating a requirement for different design and implementation of an educational activity or educational process. The priority for every teacher should be the level of children's thinking. The identification of his/her preconceptions is one of the ways to know the specificities of a child in the field of his thinking and ideas.

2 Giftedness Phenomenon

Nowadays, giftedness is understood as a complex phenomenon involving the whole personality of an individual, and other related motivational, socio-emotional and cultural factors included in the development of this phenomenon (Renzulli, J. S., 2005; Fořtík, V., Fořtíková, J., 2007; Mudrák, J., 2015; Ziegler, A., Phillipson, S. N., 2012 et al.). V. Fořtík and J. Fořtíková (2007) define giftedness as:

- a set of specific qualitative skills conditional on successful performance in activities,
- intellectual potential (complex individual characteristics of cognitive functions and the ability to learn),
- set of innate characteristics and faculties, the manifestation of qualities and levels of innate predispositions,
- general abilities determining the individual's abilities, characteristics, and level of activity,
- talent (existing internal conditions for achieving exceptionally above-average results in the activity).

C. Resch (2014) also understands giftedness as a dynamic and multidimensional concept encompassing the overall potential of an individual, which is manifested in lifelong development and education. At the same time, he states that giftedness is an interactive process between the personality predispositions of an individual and the social and cognitive influences embedded in education.

Gifted children manifest different activities and abilities in different areas compared to their peers. Empirical findings and research clearly confirm that the development of a gifted child is different from birth to children of the rest of the population (Clark, B., 2002; Davis, G., Rimm, S., 2004; Porter, L., 2005; Bainbridge, C., 2018; 2020; Cherry, K., 2018; Cioni, G., Sgandura, G., 2013). Most intellectually gifted children manifest themselves from the earliest age with typical cognitive skills (thinking, memory, attention, etc.). If these characteristics are developed and stimulated, these children establish an extraordinarily rapid development of cognitive skills. However, if these characteristics are ignored and not developed, these above-average abilities may potentially create a negative force acting against any subsequent education (Portešová, Š., 2004). Therefore, the teacher's thorough knowledge of the child's personality is very important and extremely beneficial in the educational process. It is also important to realize that gifted children are an extremely heterogeneous group, which is manifested in qualitative and quantitative differences of individual factors of giftedness (intellect, creativity, social skills, psychomotor abilities, arts), and areas of its application (Ivleva, M., 2018).

Characteristic developed cognitive skills of gifted children include abstract thinking, quick understanding of complex patterns, excellent memory, but also the need for precision. Based on complex thinking, they create new ideas with deep meaning, they can transfer knowledge and patterns through various areas and even into unusual situations, they make connections between unrelated topics. Gifted children acquire and process information, and solve problems more efficiently, better, faster, and at an earlier age compared to ungifted children (Johnson, D. T., 2000; Robinson, A., Clinkenbeard, P. R., 2008). F. Eren, S. Avicil et al. (2018) add that gifted children are characterized by a combination of convergent and divergent thinking at an earlier age. These individuals are able to memorize more words and facts, thanks to which their vocabulary is richer. The acquired information is complemented, verified, and structured into various systems, they have more complex thinking, know how to work with abstract concepts, and are able to think critically. Their preconceptions are at a better level and they understand the concepts (conceptions) that are usually learned at an older age, because their thought processes are, among other things, faster and more logical (Hříbková, L., 2009; Bainbridge, C., 2020; 2018; Ivleva, M., 2018; Rimm, S., Siegle, D., Davis, G., 2018).

S. Rimm, D. Siegle, and G. Davis (2018) state that gifted people show a high level of self-confidence, self-control, and independence. They have high moral thinking and empathy. This statement is also supported by N. M. Ishak, M. H. Z. Abidin, and A. Y. A. Bakar (2014), who argue based on research that gifted people have high empathy, especially the ability to help and satisfy the needs of others. M. Ivleva (2018) states that gifted people show a high level of psychosocial sensitivity, which is manifested by an increased sense of justice and moral development. They react sharply to injustice, like truth and harmony, place high demands on themselves and others, and have negative self-knowledge. The author also states that there are also cases of exaggerated fear and increased sensitivity to non-verbal signals of others.

In addition to the above characteristics, T. Curby and T. R. Konolod (2008) state that a gifted child plays mostly on his/her own, can easily confront others, and therefore does not even seek social contact. Gifted children also have different expectations and ideas about friendship. Preconceptions of the gifted people about friendship are more advanced at all stages, which means that they look for deeper and longer-lasting friendships than other children of the same age. Gifted children look for safe refuge, trust, fidelity, and authenticity in friendship, while their peers look for a friend for a game or a casual conversation. Just

as other children care about being accepted into a group of peers, gifted children also need friends and support from those around them (Rimm, S., Siegle, D., Davis, G., 2018).

Knowing the individual characteristics of gifted children from the cognitive, emotional, and social viewpoint is very important, but we must not ignore the specific manifestations of each individual and the need to assess each child individually. Giftedness cannot be understood as an isolated phenomenon, because it is manifested in the whole structure of an individual's personality. One of the individual characteristics of learners (children) is also represented by preconceptions, which arise based on their knowledge and experience in the social environment, but also by the influences of the environment itself (Lopušná, A., 2008/2009). These preconceptions can manifest differences in gifted children, perhaps even in individual areas.

3 Diagnostics of Children's Preconceptions

In the context of the modern understanding of the educational process, a pedagogical diagnosis is a natural part of the teacher's work. The pedagogical diagnosis aims to support learning and comprehensive development affecting the future standard and quality of an individual's living (Syslová, Z., Kratochvílová, J., 2015). Teacher's diagnostics represents the starting point for the creation of optimal educational conditions corresponding to the characteristics of individuals. It is desirable to respect the abilities and possibilities of each child (Slezáková, T., Tírpáková, A., 2006). Knowledge of individual ideas and experience, i. e. preconceptions, is a condition for acquiring new knowledge. The importance of early identification of gifted children lies in the early detection of hidden or obvious signals of this phenomenon in order to effectively and adequately stimulate their abilities in various special educational programs (Duchovičová, J., 2007). It is critical already in preschool age when children undergo rapid growth and especially developmental changes, which are a great opportunity for their further formation (Lazníbatová, J., 2012). An overall view of the child's knowledge can also be obtained based on the diagnostics of his/her preconceptions about phenomena (phenomena, objects, etc.) (Koleňáková, R. Š., Teleková, R., 2019).

The basic source of preconceptions are cognitive processes, on the basis of which children attach importance to the phenomena around them, they construct certain comprehensive ideas of this world, which in this way becomes meaningful for them. Although cognitive activity is a key source of preconceptions, we cannot think about them only at this level, given the wide and diverse range of influences involved in their formation and modification. Preconceptions are being modified in terms of quantity and quality based on the influence of internal (personality psychological, biological characteristics) and external (social environment) factors together with the active involvement of an individual in the activity. Preconceptions are the result of the functioning of not only cognitive but also socio-emotional structures of pupils, which, due to their age and stimuli from the environment, represent psychological conditions and specific adaptation to the environment. Every pupil finds himself/herself in various situations every day, in which he/she gradually gets to know the people, phenomena, things, and objects around him/her in his/her way, thus creating unique and original preconceptions. Concerning the specific characteristics of gifted children, we conclude that these preconceptions differ significantly compared to their peers. The reason is that the creation of preconceptions, as stated by V. Kosíková (2011), is significantly affected not only by nature but also by the level of mental operations, width and depth of the concept learning, and building relations between them. The structure of preconceptions is constructed analogously to a scientific theory, but it emphasizes the current state of knowledge and the intellectual level of a child. The authors J. Škoda and P. Doulík (2010) point out the fact that children's preconceptions include not only knowledge but have a much more complex structure. Due to their diversity and variety, we cannot understand them as a unidimensional set, but it is necessary to perceive them as multidimensional entities, which

consist of a cognitive, affective, and structural component (Pivarč, J., Škoda, J., Doulík, P., 2012).

There is currently no unified system for giftedness diagnosis in individuals in our conditions. Rather, it is an accidental discovery and observation of the child's exceptional abilities by parents or teachers who, based on these facts, recommend him/her for further diagnostic examinations by a psychologist. We also perceive the identification of the gifted children in education as a problem, since teachers do not have any diagnostic tools, but also that they have little time to create their tools. Nevertheless, people still rely on teachers in this area, even if their identification is more or less based on their subjective opinion. To some extent, this problem can be solved by identifying children's preconceptions about selected phenomena, which will allow the teacher to indicate the level of potential giftedness, regardless of the school results, and thus create a certain order of children. However, a possible problem is that teachers rarely have time to identify children's preconceptions. They take it for granted that children have a certain basic level of knowledge, and they also fear children's questions that they will not be able to answer (Chen, A. P., Kirkby, K. C., Morin, P. J., 2006). Within these terms, L. Held and B. Pupala (1993) emphasize that based on their experiences, certain experience, and a characteristic way of thinking, each pupil has certain structures of their ideas (preconceptions) about the various phenomena and objects of the surrounding world, which create a kind of experiential knowledge that they use to navigate themselves in everyday situations. Children have different preconceptions, some are the same, similar, or also contradictory. The teacher should know their form in individuals as part of his/her diagnostics.

4 Research

The subject of the research is the diagnosis of preconceptions and their potential in the pedagogical diagnosis of the giftedness of preschool children. The main objective of the research was to identify preconceptions of children of pre-primary education as multidimensional entities (cognitive, affective, and structural components) to a selected phenomenon from the emotional area and to compare identified preconceptions in terms of intellectual skills.

Based on the objective of the research, we set the following research questions:

- What are the preconceptions of pre-primary children about the selected phenomenon from the emotional area?
- What significance do children of pre-primary education see in the existence of a selected phenomenon from the emotional area?
- What is the relationship and attitude of children of pre-primary education to a selected phenomenon from the emotional area?
- How are the preconceptions about the selected phenomenon from the emotional area in children of pre-primary education different in terms of giftedness? We concretise this research question into three research areas:
 1. Are there differences in the cognitive component of children's preconceptions concerning the selected phenomenon of "success" in terms of intellectual skills?
 2. Are there differences in the affective component of children's preconceptions concerning the selected phenomenon of "success" in terms of intellectual skills?
 3. Are there differences in the structural component of children's preconceptions concerning the selected phenomenon of "success" in terms of intellectual skills?

4.1 Research Sample

The subject of our research were children of pre-primary education. The selection of the research sample was purposive and subject to the research objectives. A total of 39 participants from kindergartens in Nitra, Nové Zámky, and Trenčín were included in the research, of which 16 children were later

diagnosed as gifted by psychologists based on a psychological examination.

4.2 Research Methods

The nature of our research was mixed, which provided a comprehensive view of the preconceptions of pre-primary-aged children. The research design built in this way allowed us to determine whether there are differences in the level of children's preconceptions. The starting point of the qualitative strategy was the phenomenological approach, which anticipates identifying children's preconceptions. In the statements of individuals, we tried to capture their understanding of the selected phenomenon, we were interested in how they understand the importance and meaning of the selected phenomenon from the emotional area – "success".

In the research, we used the research method of projective techniques, specifically free associations to identify the cognitive component of preconceptions of pre-school children. Children (orally) completed free associations with the selected phenomenon (success). As another method, we chose a semi-structured flexible micro-interview not exceeding the limit of 20 minutes. The interview was implemented in order to identify the cognitive, structural, but also the affective component of preconceptions about the selected phenomenon of "success". We recorded and saved all the children's statements in the form of audio recordings. The structure of the questions was prepared so that the researcher had the opportunity to ask additional questions. The questions were concise and understandable as a condition for interviewing with regard to the cognitive level of the participants. When creating the tool, we emphasized the individual and specific characteristics of individuals, and through other questions, it aimed to reveal the social context of the development of children's personality. We chose the semi-structured interview to be flexible in asking questions and to be able to change the order of the questions, or add more according to the situation so that we could address what we considered important for our research in response to participants' answers. In the qualitative evaluation of children's statements, we took into account the semantic (literal) but also the pragmatic (actually expressed) meaning of children's sentences. The research was intentionally carried out in kindergartens at the end of the 2018/2019 school year, specifically in May – July (at the end of pre-school education), when psychological diagnosis and testing of giftedness in children are also carried out. In agreement with the parents, we obtained the information about the test results from the teachers, and then the results were confirmed by the kindergarten principals. We also verified this information by visiting the first year of primary school in the respective city integrating gifted children, or places that have already created classes for gifted children for the beginning of the next school year (2019/2020).

After fieldwork and conducting the research, the collected material was processed and analyzed with projective techniques and interviews based on the principles of the analytical strategy of the constant comparative method. Through content analysis (open coding) of components in the statements, we elaborated semantic categories present in all children's statements. The data from projective techniques were processed using the content analysis method, which we used to analyze and categorise children's statements. We processed the data in MS Excel and interpreted them into clear figures and tables. The data evaluation from projective techniques is presented through the processing and interpretation of data in the form of a summary report. Children interviews were subjected to content analysis (open coding). When processing the interviews, we used a literal transcription from the audio recordings into the records. Based on authentic statements, these records were used to create categories, which we assigned to the individual children's statements. To compare the data in terms of giftedness, we also used quantitative content analysis. Therefore, based on the number of interpretative categories of individual children groups, we further evaluate the data in comparison tables. In this phase, we used information and results of diagnosing giftedness

in pre-primary education to evaluate the data, based on which we also compared it. The aim of this comparison was a more objective identification of differences in the identified preconceptions of children about the selected phenomenon. Therefore, when evaluating the data from the interview, we also proceeded with the so-called expert assessment – in our case, to score the authentic statements of children. However, only statements on the cognitive and structural component of preconceptions were scored; the affective component is analysed and interpreted only in graphs. The scoring was done by three unbiased persons:

- pre-primary teacher;
- parent of a pre-school-aged child;
- researcher.

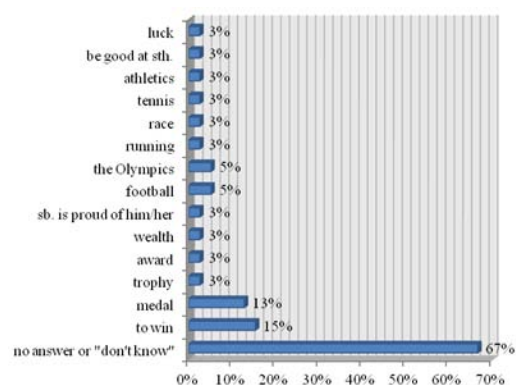
5 Results and Discussion

In the following section, we present an analysis and interpretation of research data collected through projective techniques (free associations) and a semi-structured micro-interview about a selected emotional phenomenon of success. For the clarity of the results, we firstly present the analysis of free associations (hereinafter referred to as "free associations") with the selected phenomenon stated by the kindergarten children, i. e. the children of pre-primary education (hereinafter referred to as "kindergartens"). This is followed by the analysis and interpretation of flexible semi-structured micro-interviews about the phenomenon.

5.1 Evaluation of Projective Techniques: Free Associations with the Phenomenon of Success

In this part, we examined in particular the cognitive component of children's preconceptions about the phenomenon of success. Children's statements on the question "What do you think of when you hear the word success?" were analysed and processed in the following Graphs 1, 2, and Table 1.

Graph 1: All Free Associations of Pre-School Children with the Phenomenon of Success

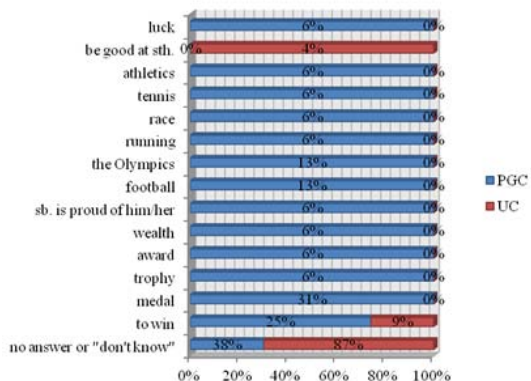


In Graph 1 we see all the free associations that children of pre-primary education mentioned with the phenomenon of "success". The category of no answer or "don't know" had the largest representation, in which most children spontaneously answered "don't know". The second most represented category was the importance of success, in which children stated that success is when someone wins, wins a medal, a trophy, some prize, is wealthy, but also when the immediate environment is proud of a successful individual. Similarly, the children mentioned various sports in which success is the goal (football, Olympics, running, racing, tennis, etc.), but they also mentioned the reasons for success – a successful person is good at something or is lucky.

Furthermore, we ranked all pre-school participants according to the number of free associations and subsequently marked those who were identified as gifted based on a psychological

examination. In this table, mainly children identified as gifted are in the table area with the largest number of free associations. Based on this identification and comparison, we divided the respondents into potentially gifted children (hereinafter PGC) and ungifted children (UC). Based on this division, we likewise present an analysis of free associations and their comparison.

Graph 2: All Free Associations of Pre-School Children with the Phenomenon of Success



In Graph 2 we can see the percentage of individual free associations in the given groups. The category with no answer or "don't know" is the most represented in the UC group (87%), free associations in this group are only in two other categories – in the category of the importance of success, the free association "to win" was represented by 9%, and in the category of reasons for success, the free association "to be good at something" by only 4%, even though it is a category mentioned solely by this group of children. Free associations of PGC are represented in all other categories, which is the majority, and in the category of no answer or "don't know", their representation is only 38%.

Table 1: Comparison of Free Associations of Pre-School Children with the Phenomenon of Success

Category	PGC		UC	
	n	%	n	%
Children total	16		23	
Total number of free associations with respect to the number of children	28	175	23	100
Total number of free associations	28	100	23	100
No answer or "don't know"	6	21	20	87
Number of free associations (without repetitions)	15	54	3	13

In Table 1 we can also notice that both the UC and the PGC stated the same number of free associations as the number of children in the group, but out of this total number of free associations, up to 87% are in the category with no answer or "don't know". Out of the total number of free associations, the UC reached only 13% in the number of free associations without repetition. Compared to the previous group, the PGC stated a higher number of free associations by up to 75%. Out of the total number of free associations (which we further perceive as 100% of the listed free associations in both groups), 21% were classified as unanswered or "don't know". The number of free associations without repetition was also 41% higher in this group compared to the UC.

Based on Graphs 1, 2, and Table 1 above, we note that the cognitive component of PGC's preconceptions on the phenomenon of success is at a higher level than in UC. The PGC group reached a higher number and a wider spectrum of free associations, while a large proportion of members of the UC group could not state any association.

5.2 Evaluation of the Interviews on the Phenomenon of Success

In this part, mainly the cognitive and structural, but also the affective component of children's preconceptions about the phenomenon of success were examined. In the qualitative content analysis of the interview, we created several semantic categories based on the authentic children's statements through open coding. We researched and analyzed the statements that the children of pre-primary education said to answer several questions aimed at identifying individual components of a preconception. The questions and semantic categories are listed in Table 2 below.

Table 2: Semantic Categories on the Phenomenon of Success in Kindergartens

Component of the preconception	Question	Created semantic categories
Cognitive	What is success? What does it mean to be successful?	Victory General above-average skills Naïve understanding No opinion
	Why do we (people, children, or you) have success? What would happen if no one was ever successful again? What would happen if success did not exist?	Self-development Achieving victory Psychological importance Naïve understanding No opinion
Affective	Do you like success? How do you feel when you are successful? Why do you like success? What would you like to be successful in?	Positive attitude Other

Children's statements on questions aimed at identifying the cognitive component of preconceptions were classified into the following semantic categories:

- victory (statements which expressed a clear idea, activity, or a status achieved);
- general above-average skills (statements were more general, not as clear as in the previous category);
- naïve understanding of the nature of the phenomenon (statements in which the idea was not entirely clear or focused on only one activity);
- no opinion (statements in which the participant answered "don't know" or did not say anything).

When asked "What is success?" with the complementary question "What does it mean to be successful?", the participants had different ideas. Some saw this phenomenon as achieving victory and winning an award in a competition, (Child 16; 6 y/o) "...that you win a prize" or (Child 20; 6 y/o) "...well, that success, such as these medals". They also perceived it as a motivation to win the competition, such as (Child 21; 6 y/o) "...that you have to add a little to that success. For example, if you run and speed up a little, you can also win a medal." or as a reward for the work done (Child 31; 5 y/o) "...that if we do something, I get a reward for that work." Another category included statements, which were a little more general. The children understood the essence of the phenomenon of success as good abilities and skills, but only at the general level – (Child 2; 5 y/o) "...that he is good at something", (Child 32; 6 y/o) "...that you can do everything" or (Child 22; 7 y/o) "...that you are fast." The children also had more naïve ideas about the phenomenon of success. This category includes statements in which children perceived success as not being afraid of anything and anyone, such as (Child 14; 5 y/o) "...that he is not afraid of anything", or that a successful individual has a lot of energy (Child 3; 5 y/o) "...to have a lot of energy and to be strong" and so on. The last category is "no opinion" and consists of spontaneous answers like "don't know" or no comment on the questions. In this case, it is the most represented category.

For comparison of individual statements, we proceeded with the scoring of statements, based on which we ranked all participants

according to the number of points achieved. We also marked PGC (children that were later identified as gifted) in the table. Based on this division, we further compared and analyzed the semantic categories created by content analysis and open coding of the interviews. In Tables 4, 5, 6, and Graph 3, the achieved scores were also statistically processed and interpreted. To assess whether the difference in the score achieved by PGC and UC was statistically significant, we used a two-sample t-test for equality/inequality variances. To determine the equality of variances, we first used the F-test for equality of variances.

Table 3: Comparison Table of the Semantic Categories Representation in the Cognitive Component Concerning the Emotional Phenomenon of Success in Kindergartens

Semantic categories	Total	PGC		UC	
		n	%	n	%
Victory	10	9	50	1	4
General above-average skills	4	3	17	1	4
Naive understanding	4	2	11	2	9
No opinion	23	4	22	19	83

*n – total number, % - the percentage of the semantic category of the total number of categories in the group;

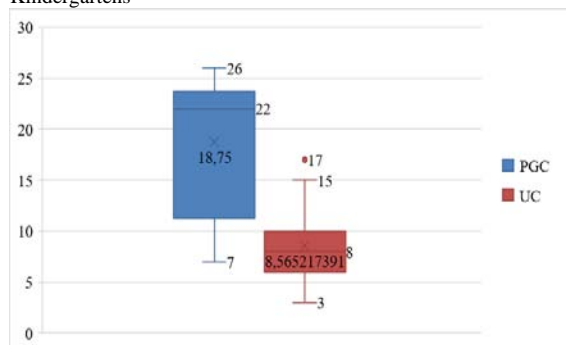
In Table 3 we can see that half of the PGC understood the phenomenon of success as victory or winning a certain award, while only 4% of the children from the UC group had such ideas. Ideas as above-average skills of a successful individual, but only at the general level, were represented by 17% in the PGC group and only 4% in the UC group. The naive understanding of the phenomenon had an even smaller percentage in both groups – 22% of the PGC group could not comment on the questions, but the UC group was the majority, with as many as 83% of the UC answering with “don't know” or no comments.

Table 4: Descriptive Statistics of the Achieved Scores of Groups in the Cognitive Component of Preconceptions about the Phenomenon of Success in Kindergartens

	M	N	SD	SEM	Min	Max	Median
PGC	18.75	16	6.787	1.697	7	26	22
UC	8.565	23	3.628	0.757	3	17	8

*(M – mean, N – children total, SD – standard deviation, SEM – standard error of the mean, Min – minimum value, Max – maximum value, Median - median);

Graph 3: Boxplot with the Score of the Cognitive Component of Preconceptions about the Phenomenon of Success in Kindergartens



In Table 4 and Graph 3 we see the statistical processing of the achieved score of both groups concerning the cognitive component of preconceptions about the phenomenon of success. The mean of the score of PGC was 18.75 (standard deviation 6.787), GC averaged 8.565 (standard deviation 3.628).

Table 5: Results of the F-Test for Equality/Inequality of Variances of the Achieved Score of PGC and UC in the

Cognitive Component of Preconceptions about the Phenomenon of Success

	M	df	F	P
PGC	18.75	15	3.499	< 0.004
UC	8.565	22		

*(df – degrees of freedom, F – test statistic value, p – p-value rounded to the nearest thousandth;

Table 5 shows the results of the F-test, which was used to test the equality of variances in the groups. The test statistic was 3.499 and the corresponding p-value <0.004, which means that at the level of statistical significance <0.05, there is a significant difference in the variances of the achieved score between PGC and UC, so we further used a t-test for inequality of variances.

Table 6: Results of the t-Test for Inequality of Variances of the Achieved Score of PGC and UC in the Cognitive Component of Preconceptions about the Phenomenon of Success

	M	df	t	P
PGC	18.75	21	5.482	< 0.001
UC	8.565			

*(df – degrees of freedom, t – test statistic value, p – p-value rounded to the nearest thousandth;

Table 6 shows the results of the t-test for inequality of variances, in which the differences in the achieved score of the PGC and UC groups were tested and monitored. The value of the test statistic was 5.482 and the corresponding p-value <0.001, which means that the differential scores of the PGC and UC are significantly different, at the level of statistical significance <0.05.

When comparing the PGC with UC, we can see that the PGC achieved better scores. Moreover, based on the analysis above, the PGC had mainly concrete ideas, but they were also to a lesser extent more general. Only 8% of children from the UC group had such ideas, and they were more represented in the category of naive ideas about the phenomenon of success. The PGC had more relevant answers compared to the UC. In general, most children in the PGC group expressed their ideas about the phenomenon of loss, while many UC could not express themselves. Therefore, we assessed that the cognitive component of preconceptions of PGC about the phenomenon of success is at a higher level compared to the UC.

The children's statements on questions aimed at identifying the structural component of preconceptions were classified into the following semantic categories:

- self-development;
- achieving victory;
- psychological importance (feeling of satisfaction);
- naive understanding;
- no opinion.

Concerning the question “Why do we (people, children or you) have success?” with the complementary questions “What would happen if no one was ever successful again? What would happen if success did not exist?”, the children had different ideas about the meaning of success, and they mentioned the personal development of the individual in general, such as (Child 3; 5 y/o) “...to be always good” or (Child 10; 5 y/o) “...that they will be skilled”, etc. Another category of ideas were statements in which children expressed their understanding of the importance of success as winning (Child 17; 5 y/o) “...to win” or winning in a computer game (Child 16; 6 y/o) “...completed these only on the computer”, or as competitions and games. Some participants also had interpretations concerning psychological satisfaction from the activity performed, with statements like (Child 20; 6 y/o) “...to be glad” or also (Child 4; 5 y/o) “...to have a great fun”. There were also individuals with the naive understanding of success (Child 21; 6 y/o) “...so that we would not be fat” or so that we would not be afraid of anything (Child 14; 5 y/o) “...because then I would not be afraid when a bear or wolf

attacked me.” In this part, the last category are also the statements in which the participants answered “don’t know” or did not express anything at all – it is the most represented category.

As with the cognitive component, we proceeded with the scoring of individual statements to compare them. Based on these scores, we ranked all participants according to the achieved score. We also marked PGC (children that were later identified as gifted) in the table. We further analyzed the obtained data based on this division, and statistically processed and interpreted the achieved scores in Table 8, 9, 10, and Graph 4. To assess whether the difference in the score achieved by PGC and UC was statistically significant, we used a two-sample t-test for equality/inequality variances. To determine the equality of variances, we first used the F-test for equality of variances.

Table 7: Comparison Table of the Semantic Categories Representation in the Structural Component Concerning the Emotional Phenomenon of Success in Kindergartens

Semantic categories	Total	PGC		UC	
		n	%	n	%
Self-development	5	3	19	2	9
Achieving victory	4	3	19	1	4
Psychological importance	2	2	13	1	4
Naïve understanding	4	2	13	2	9
No opinion	23	6	38	17	74

*n – total number, % - percentage of the semantic category of the total number of categories in the group;

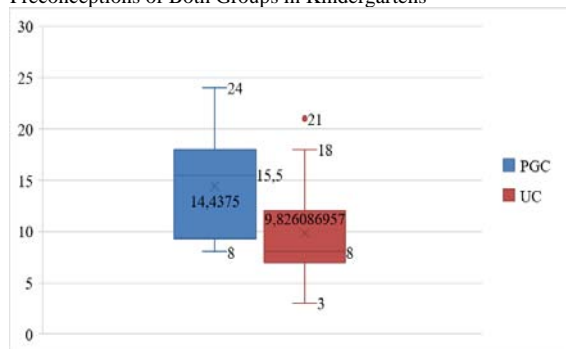
In Table 7 we can see that PGC understood the importance of success as the self-development of an individual and also as achieving victory, getting awards, or in general, as the existence of competitions and games. They had the same representation in both categories, while the UC were slightly less represented in these categories. It was similar in the category of psychological importance. The category of naïve understanding was at the same level in both groups. The big difference is noticeable in the category with no opinion, where the UC group was represented by up to 74%, while the PGC by 36% less.

Table 8: Descriptive Statistics of the Achieved Scores of Groups in the Structural Component of Preconceptions about the Phenomenon of Success in Kindergartens

	M	N	SD	SEM	Min	Max	Median
PGC	14.438	16	5.452	1.363	8	24	15.5
UC	9.826	23	4.519	0.942	3	21	8

*(M – mean, N – children total, SD – standard deviation, SEM – standard error of the mean, Min – minimum value, Max – maximum value, Median - median);

Graph 4: Boxplot with the Score of the Structural Component of Preconceptions of Both Groups in Kindergartens



In Table 8 and Graph 4, we see descriptive statistics of the achieved score of both groups concerning the structural component of preconceptions about the phenomenon of success.

The mean of the score of PGC was 14.438 (standard deviation 5.452), the UC averaged 9.826 (standard deviation 4.519).

Table 9: Results of the F-Test for Equality/Inequality of Variances of the Achieved Score of PGC and UC in the Structural Component of Preconceptions about the Phenomenon of Success

	M	Df	F	P
PGC	14.438	15	1.456	<0.206
UC	9.826	22		

*(df – degrees of freedom, F – test statistic value, p – p-value rounded to the nearest thousandth;

Table 9 shows the results of the F-test, which was used to test the equality of variances in the groups. The test statistic was 1.456 and the corresponding p-value <0,206, which means that at the level of statistical significance <0.05, there is no significant difference in the variances of the achieved score between the PGC and UC.

Table 10: Results of the t-Test for Inequality of Variances of the Achieved Score of PGC and UC in the Structural Component of Preconceptions about the Phenomenon of Success

	M	Df	t	P
PGC	14.438	37	2.880	<0.003
UC	9.826			

*(df – degrees of freedom, t – test statistic value, p – p-value rounded to the nearest thousandth;

Table 10 shows the results of the t-test for inequality of variances, in which the differences in the achieved score of the PGC and UC groups were tested and monitored. The value of the test statistic was 2.880 and the corresponding p-value <0.003, which means that the differential scores of the PGC and UC are significantly different, at the level of statistical significance <0.05.

When comparing the groups, we can see that the PGC have also achieved better scores in this component of preconceptions about the given phenomenon. The results point out that the PGC group demonstrated a higher level of the structural component of the preconceptions on the phenomenon of success. This group of participants had more relevant and detailed ideas, and most of the children had no problem answering the questions and commenting on them.

The children's statements on questions aimed at identifying the affective component of preconceptions were classified into the following semantic categories, which are analysed based on dividing the respondents into two groups:

- positive attitude;
- other (statements in which a child spontaneously answered “don’t know” or had no comment on any question aimed at identifying this component of preconceptions).

Table 11: Comparison Table of the Semantic Categories Representation in the Affective Component Concerning the Phenomenon of Success in Kindergartens

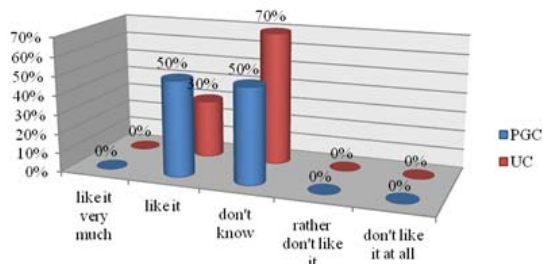
Semantic categories	Total	PGC		UC	
		n	%	n	%
Positive attitude	15	8	50	7	30
Other	24	8	50	16	70

*n – total number, % - the percentage of the semantic category of the total number of categories in the group;

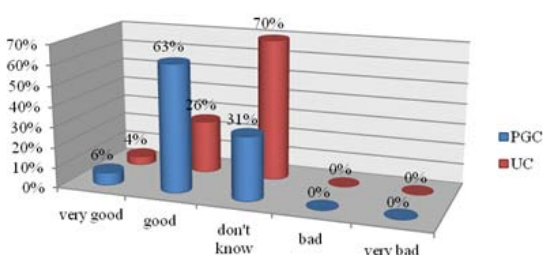
When asked “Do you like success? How do you feel when you are successful?” with complementary questions “Why do you like success? What would you like to be successful in?”, children from both groups showed interest and a positive attitude towards the phenomenon of success. Children usually answered only briefly “yes”, and when asked how they feel, they made statements like (Child 18; 6 y/o) “...good, ...I would like to win

the golden cup award in gymnastics” or (Child 19; 6 y/o) “...very happy that I have the first gold medal” or also (Child 20; 6 y/o) “...normally, however” and so on. In the category *other*, we included the statements of children, in which the participants spontaneously answered (Child 34; 6 y/o) “...I don't know” or did not say anything. This category also includes statements, in which a child answered the first question “Do you like losing?” with “don't know”, but expressed certain feelings, such as good, very good, rich, happy, and other synonyms, concerning the second question “How do you feel when you lose?”. This category is more represented by the UC group. For a better depiction, these data were processed into the following Graphs 5 and 6.

Graph 5: Data on the Question Asked in Kindergartens: Do you like success?



Graph 6: Data on the Question Asked in Kindergartens: How do you feel when you are successful?



Based on Table 11, and Graphs 5 and 6, we state that the PGC like success and want to be successful. The UC group shows a similar trend, but these children are more represented in the category *other* – they could not comment or answered with “don't know”, up to 70%. This may be due to the fact that they do not yet have sufficient experience with this phenomenon or have insufficient knowledge about the phenomenon of success. This was observed in the previous components of the preconceptions of UC about the phenomenon of success, and in these components, the category with no comment prevailed. Therefore, we state that the affective component of the preconceptions of PGC on the phenomenon of success is slightly different, but this difference is not significant.

Based on the processing of the obtained data, we came to the conclusion regarding the children's preconceptions about the selected phenomenon of success, what meaning they give to this phenomenon, and what is their relation and attitude to it. To compare the indicator in terms of giftedness, we summarise the following conclusion.

6 Conclusion

Based on the processing and analysis of the data acquired by the projective techniques (free association) and flexible semi-structured micro-interview, we state that the cognitive and structural component of preconceptions of pre-primary children about a selected phenomenon from the emotional area (success) differ in terms of intellectual skills – there are differences between children identified as gifted and ungifted children

(children that were not identified as gifted based on a psychological examination). However, the difference in the affective component of children's preconceptions about the selected phenomenon of success in terms of intellectual skills has not been proven. The ranking of participants according to the number of free associations also showed that the PGC (children that were later identified by a psychologist as gifted) were mostly in the group with the largest number of free associations. Similar results were observed in the participants' ranking according to the score achieved based on their statements. It showed that the identification of preconceptions can highly coincide with the results of the specialist's diagnosis of giftedness. Of course, it cannot be replaced, but it can be a teacher's way to learn about the thinking of a pre-school child and the differences between children within the class while making it easier and faster to diagnose a potentially gifted child.

Literature:

- Bainbridge, C. 2018. How to Identify a Gifted Child. In *VeryWellFamily* [online]. 2018. Retrieved from: <https://www.verywellfamily.com/what-is-a-gifted-child-1449130>
- Bainbridge, C. 2020. Identifying the Traits of Gifted Children. In *VeryWellFamily* [online]. 2020. Retrieved from: <https://www.verywellfamily.com/quick-test-for-giftedness-1449134>
- Chen, A. P., Kirkby, K. C., Morin, J. P. 2006. Uphill Water Flow-An Example of the Crucial Role of Students' Prior Knowledge in Geoscience Education. In *American Geophysical Union* [online]. 2006. Retrieved from: <https://ui.adsabs.harvard.edu/abs/2006AGUFMED53A0847C/abstract>
- Cherry, K. 2018. *Social and Emotional milestones in children* [online]. Retrieved from: www.verywellmind.com/social-and-emotional-milestones-2795121
- Cioni, G., Sgandurra, G. 2013. Normal psychomotor development. In *Elsevier: Handbook of Clinical Neurology*, ISSN 0072-9752, vol. 111, n.1, p. 3-15.
- Clark, B. 2002. *Growing up gifted: Developing the potential of children at home and at school 6th ed.* Upper Saddle River, NJ: Merrill-Prentice Hall, 2002. ISBN 978-0-132-62066-6.
- Curby, T., Konold, T. R. et al. 2008. The role of social competence in predicting gifted enrollment. In *Psychology in the schools*, vol. 45, n. 7, p.729-744. ISSN 1520-6807.
- Davis, G. A., Rimm, S. B. 2004. *Education of the gifted and talented*. New York, Pearson Education. 592p. ISBN 0135056071.
- Duchovičová, J. 2007. *Aspekty diferenciácie v edukácii nadaných žiakov*. Nitra: PF UKF, 2007. 312p. ISBN 978-80-8094-099-7.
- Eren, F., Avicil, S. et al. 2018. Emotional and behavioral characteristics of gifted children and their families. In *Turkish Neuropsychiatric society*, vol. 55, n. 2, p. 105-112. ISSN 1300-0667.
- Fortík, V., Fortíková, J. 2007. *Nadané dítě a rozvoj jeho schopností*. Praha: Portál. 126 p. ISBN 807-3-672-973-126.
- Held, L., Pupala, B. 1993. Kritický pohľad na teoretické zdroje pedagogickej koncepcie súčasnej školy. In *Pedagogická revue*, vol. 45, n. 1-2, p. 27-37. ISSN 1335-1982.
- Hřibková, L. 2009. *Nadání a nadaní: Pedagogicko-psychologické přístupy, modely, výzkumy a jejich vztah ke školské praxi*. Praha: Grada, 2009. 256p. ISBN 978-80-247-1998-6.
- Ishak, N. M., Abidin, M. H. Z., Bakar, A. Y. A. 2014. Dimension of social skills and their relationship with empathy among gifted and talented students in Malaysia. In *Procedia-Social and Behavioral Science*, p.750-753.
- Ivleva, M. 2018. Personal and Behavioral Peculiarities of Gifted Children: The Search for Invariant Characteristics of Giftedness. In *4th International Conference on Arts, Design and Contemporary Education (ICADCE 2018)*. ISSN 2352-5398, 2018, p. 2352-5398, DOI: 10.2991/icadce-18.2018.124
- Johnson, D. T. 2000. *Teaching mathematics to gifted students in a mixed-ability classroom*, 2000. Retrieved from: <http://challengebychoice.files.wordpress.com/2008/01/teaching-math-to-gifted-students-in-a-mixed-class.pdf>

17. Koleňáková, R. Š., Teleková, R. 2019. Práca učiteľa s prekonceptmi na prahu vzdelávania. In *MMK 2019: Recenzovaný zborník príspevků mezinárodní vědecké konference Mezinárodní Masarykova konference pro doktorandy a mladé vědecké pracovníky*, 16. – 18.12. 2019. Hradec Králové: Magnanimitas, 2019. ISBN 978-80-87952-31-3, s. 549-561.
18. Kosíková, V. 2011. *Psychologie ve vzdělávání a její psychodidaktické aspekty: úloha psychologie ve vzdělávání, výukové cíle a jejich psychodidaktické souvislosti, žádané pojetí výuky a hodnocení*. Praha: Grada Publishing, a.s., 2011. 265p. ISBN 978-80-247-2433-1.
19. Laznibatová, J. 2012. *Nadaný žiak na základnej, strednej a vysokej škole*. Bratislava: Iris, 2012. 543p. ISBN 978-80-89256-87-7.
20. Lopušná, A. 2007/2008. O detských prekonceptoch (čo už deti vedia). In *Naša škola*, vol. 51, n. 9, p. 20-24. ISSN 1335-2733.
21. Mudrák, J. 2015. *Nadané děti a jejich rozvoj*. Praha: Grada Publishing, 176 p. ISBN 978- 80-247-5089-7.
22. Petrová, G., Kozárová, N. 2018. Concept of working with mistakes in the educational proces. In: *Ad Alta: Journal of Interdisciplinary Research*, ISSN 1804-7890, vol. 8, n. 1 p. 148-153.
23. Pivarč, J., Škoda, J., Doulík, P. 2012. *Analýza miskoncepčí alternativní religiozity u žáků vybraných gymnázií*. Ústí nad Labem: Pedagogická fakulta UJEP, 206p. ISBN 978-80-7414-520-9.
24. Porter L. 2005. *Gifted young children (2nd ed.)*. Berkshire, England: Open University Press.
25. Portešová, Š. a kol. 2014. *Rozumově nadaní studenti s poruchou učení. Cesty od školních výkonových paradoxů k úspěchu*. Brno: Masarykova univerzita, ISBN 978-80-210-7520-7.
26. Renzulli, J. S. 1978. What makes giftedness? Re-examining a definition. In *Phi Delta Kappan*, vol. 60, no. 3, p. 180–184.
27. Resch, C. 2014. National policies and strategies for the support of the gifted and talented in Austria. In *Center for educational policy studies journal*. ISSN 2232-2647, 2014, Vol. 4, n.3, p.9-30.
28. Rimm, S., Siegle, D., Davis, G. 2018. *Education of the gifted and talented (7th ed.)*. Boston: Pearson, 2018. 480 p. ISBN 978-0133827101.
29. Robinson, A., Clinkenbeard, P. R. 2008. History of giftedness: Perspectives from the past presage modern scholarship. In Pfeiffer, S. I. (Ed.), *Handbook of giftedness in children*. New York: Springer US, 2008. p. 13-31. ISBN 978-0-387-74401-8.
30. Škoda, J., Doulík, P. a kol. 2010. *Prekoncepce a miskoncepce v oborových didaktikách*. Ústí nad Labem: UJEP, 274p. ISBN 978-80-7414-290-1.
31. Slezáková, T., Tirpáková, A. 2006. *Adaptácia dieťaťa na školu – Súčasné pohľady pedagogickej teórie a výskum*. Nitra: PF UKF v Nitre, 2006. 191 p. ISBN 80-8050-968-9.
32. Syslová, Z., Kratochvílová, J. 2015. *Metodika pre učiteľov. Praktická príručka k diagnostickému nástroju Predict*. Praha: Nakladateľstvo Dr. Josef Raabe s.r.o., 2018. 56 p. ISBN 978-80-7496-362-9.
33. Ziegler, A., Philipson, S. N. 2012. Towards a systematic theory of gifted education. In *Hight Ability Studies*, vol. 23, p.3-30.

Primary Paper Section: A

Secondary Paper Section: AM

COOPERATION OF SCHOOL AND FAMILY IN PREVENTION OF AND DEALING WITH PROBLEM BEHAVIOUR OF PUPILS IN THE SLOVAK REPUBLIC

^aINGRID EMMEROVÁ, ^bTOMÁŠ JABLONSKÝ

Faculty of Education, Department of Pedagogy and Special Pedagogy, Hrabovská cesta 1, 034 01 Ružomberok, Slovakia
 email: ^aingrid.emmerova@ku.sk, ^btomas.jablonsky@ku.sk

The article was supported by a Grant Agency GAPF of the Faculty of Education, Catholic university in Ružomberok

Abstract: The study presents current trends in problem behaviour, or risk behaviour of pupils at elementary, secondary and high schools. Based on theoretical analysis and the results of objective researches it presents opportunities and problems in the area of cooperation of pedagogical and vocational training employees of schools with parents, with special focus on their cooperation in prevention of and dealing with problem behaviour of pupils.

Keywords: cooperation of school and family, communication of pedagogical and vocational training employees of schools with parents, problem and risk behaviour, prevention and dealing with problem behaviour

Preface

Family is an important preventive and protective factor in the context of socio-pathological phenomena, but it is also the dominating risk factor for the occurrence of problem behaviour. For children, family represents the world of their closest ones; family background influences their development. Dysfunctional family background influences the occurrence of socio-pathological phenomena of children; harmonious family background and supportive upbringing are the best starting points for each child.

Family, together with school, represents the dominating educational and socializing factor. Good-quality cooperation of school and family has positive effect on pupils. By cooperation of school and family we understand activities of pedagogical and vocational training employees and parents that help unite their opinions on education and upbringing of pupils.

Active cooperation of school with parents is an important qualitative indicator of the school, as well as the basic precondition for the success of the educational process; it also affects the school climate. According to C. Scholzová (2012), if we want to ensure high-quality education of pupils that is not deprived of the formative component, we must ensure joining of efforts of both educational institutions - family and school - which can only happen through improvement of the communication between themselves, because each high-quality relationship is based on mutual communication. Cooperation of school and parents of pupils contributes to:

- strengthening of the partnership between family and school,
- increased reliability of school in the eyes of parents,
- increased communication,
- the opportunity of united influence of family and school,
- acquirement of such information for school that help to plan mutual activities,
- improvement of school success of children.

Children are intensely influenced by their family background and thus it is important to pay adequate attention to cooperation of school and family. Cooperation of school with family is important in general; it is suitable in prevention, but absolutely necessary in dealing with problem behaviour of pupils.

1 Current trends in problem and risk behaviour of pupils

Increase in socio-pathological phenomena in society is also projected in the occurrence of problem behaviour of children and youth – pupils of elementary, secondary and high schools. The causes may be found in macro-environment, or even in the global environment. However, especially strong influence is that

of local environment. Environment may have spontaneously positive influence, i.e. in accordance with socially desirable norms and patterns of behaviour. But it also may have negative influence. Social factors of environment have strong influence and play the determining role in the occurrence of problem or risk behaviour of children and youth. It is so due to the fact that everything that surrounds children and youth – family, peers, school, gangs, media – greatly influences the development of attitudes and values. Etiology of problem behaviour is always determined by multiple factors and it is always the result of interaction among several factors: biological, personality and social ones.

Elementary, secondary and high school teachers more and more often face problem behaviour of pupils, of more or less serious nature (Rahman, Abdulah, 2013). Deviant behaviour of pupils and violation of school regulations is becoming a serious problem that requires constant attention – in a preventive way, but also in a sanctioning way and effective handling. S. Bellová, G. Siváková and K. Tišťanová (2019) state that the issue of inappropriate behaviour of pupils also means the so-called devaluation actions of pupils, in other words – disturbance of the educational process by different undesirable activities of pupils, including devaluating attitudes and actions towards the teacher.

Truancy is a lasting and one of the most common forms of problem behaviour at elementary, secondary and high schools. It is demonstrated by intentional avoidance of school duties. It represents violation of one of the basic regulations that determine the role of pupils, because their duty is to attend school. Truancy is an evasive reaction; its aim is to avoid unpleasant school tasks. It also means fear of exams, or fear of bullying. However, it may also be an adventure. Annual V12 reports of the Ministry of Labour, Social Affairs and Family of the Slovak republic suggest that thousands of truancy cases are annually being dealt with. Prevention of truancy is very important, because truancy is closely connected with other socio-pathological phenomena of much more serious nature. It may become one of the factors encouraging criminal behaviour. Pupils committing truancy spend their newly acquired free time in various ways, starting from innocent TV watching or reading at home, through wandering (individually or with a gang), up to smoking, drinking alcohol, visiting pubs or gambling houses, or even committing delinquent behaviour.

One of the most serious problems of today is still pupils' experimentation with drugs, or recreational usage of legal or illegal drugs, which presents a considerable risk of developing an addiction. Drug usage causes problems in the social sphere; pupils neglect their school duties or commit other deviant acts (thefts, truancy, etc.). Drug intoxication can severely damage the health of young people and sometimes even endanger their life. The situation is clarified in TAD (TAD stands for Tobacco, Alcohol, Drugs) school researches: pupils at elementary, secondary and high schools have personal experiences with legal drugs; they also experiment with illegal drugs, most often with marihuana (Nociar, A., 2018). When it comes to alcohol, we can literally speak of risk drinking. It is proved by the results of TAD2 that was conducted among high school pupils: 72.8% of boys admitted to tipsiness and 42% admitted to drunkenness and a blackout; 74.1% of girls admitted to tipsiness and 39.4% of them admitted to drunkenness and a blackout.

Aggressive behaviour of pupils is another negative phenomenon that is on the rise. Aggressive behaviour of pupils is already a relatively common phenomenon at schools. The results of the researches of M. Kolaříková, A. Petrová and E. Urbanovská (2017) prove that. Almost 40% of their respondents (teachers) stated that they often encounter aggressive behaviour at their schools.

While in the past aggressive behaviour and bullying was mostly spread among pupils, nowadays there are many cases when aggressive behaviour is aimed at teachers. A significant threat in this context is also the cyberspace. Cyber-attacks against teachers are the reality that teachers face directly as victims, or they may see it among their colleagues. One of the typical Internet-bound forms of cyber-attacks against teachers is provoking the teacher, recording his/her reaction on the smartphone and putting it on the Internet; another examples are sharing materials that embarrass the teacher, threatening and blackmailing the teacher, etc. In 2016, a research was conducted in the Czech Republic among teachers of elementary, secondary and high schools that focused on cyberbullying aimed at teachers (Kopecký, Szotkowski, 2017). According to its results, 21.73% of teachers (of 5,136 respondents) have been the victims of some form of cyberbullying. The most common forms of cyberbullying were verbal attacks through cell-phones or the Internet, evening phone-calls, threatening and extortion through the Internet or cell-phone, spreading embarrassing and humiliating photos, hacking their electronic accounts (e-mail, social network account, etc.). They also found out that short-term attacks prevailed – such that lasted less than a week, and such lasting one to two weeks.

Elementary, secondary and high schools are attended by pupils who can use modern technologies better than the adults – their parents, educators or teachers. The usage of modern technologies brought along with many advantages also many risks and threats, especially for children and youth. Individual areas of risk behaviour in the cyberspace may be intertwined (Hollá, 2016, Niklová, Novocký, Dulovics, 2019). Technological addictions that occur due to the excessive use of modern technologies, or due to the content itself, are a very serious problem of today. Besides addictions, there are other risks with negative impacts on physical and mental health; desensitization, rise of cyberbullying and others. Hateful comments on the Internet are called cyberhates or hating. It could mean spreading of some texts or videos that propagate or justify extremism, xenophobia or racism. Other Internet risks cover misuse of personal data, inappropriate content, cyberstalking, sexting, sextortion, cybergrooming, weakening the contacts with family and peers, and other.

School is one of the most important socializing factors. It should also play an important role in prevention, because pupils spend a lot of time there. This prevention should be implemented in an effective form, using effective methods. Efficient and effective primary prevention includes continual and complex programmes, interactive programmes, especially programmes that help children face the social pressure, that are aimed at improvement of communication, non-violent dealing with conflicts, refusing risk behaviour, increasing healthy confidence, managing anxiety and stress. According to T. Jablonský (2009, 2010), it is important to implement various cooperative activities to develop interpersonal competences, such as the ability to work in team, because they are becoming more and more important. The strategies and methods of cooperative learning lead to the development of emphatic behaviour, to sensitivity, to understanding, to the development of friendly relationships, to overcoming interpersonal barriers. By developing cooperative competences it is possible to suppress aggressive behaviour. Interaction among peers may support acquirement and modification of prosocial behaviour.

The importance of the role of school in the implementation of prevention is highlighted also by M. Procházka, M. Vítěčková and Z. Gadusová (2016). Effective prevention requires adequate cooperation of school and pupils' parents.

2 Cooperation of school and family in prevention of and dealing with problem behaviour of pupils – current situation and

The cooperation of school and family has always been based on the cooperation of a specific teacher, or vocational training employee, with a specific parent. However, the crucial role is

played by the school management who creates conditions that support cooperation.

School and family cooperate in various forms. Some of the individual forms of cooperation are inviting parents to school, visiting families in their homes, individual discussion, pupil book, and other forms of correspondence. Correspondence is actually the most frequently used form of cooperation between teachers and parents. However, this form is not sufficient anymore and it is important to seek other options. Nowadays, electronic communication is becoming more and more popular. Among collective forms of cooperation, we include classroom meetings (most common form of collective cooperation between school and families), open door days, debates and other activities organised by school. Some parents prefer passive participation on school activities, others prefer active participation.

There are various opinions – often contradictory – of teachers and parents on how authority and responsibility for pupils' education should be distributed. This situation may lead to conflicts between teachers and parents. And ignoring these conflicts may ultimately lead to aggressive behaviour of dissatisfied parents.

On one hand, the problem occurs when parents refuse to cooperate; on the other hand, the problem also occurs when parents want to improperly interfere with the competences of the teacher. R. Zadell (2017) warns that even the well-meaning advice and opinions of parents may cause uncertainty, chaos and pressure in the educational process of pupils. Pedagogical or vocational training employees of schools must regulate the productive participation of parents on school activities by explaining the suitable ways to help.

Communication between parents and pedagogical or vocational training employees is most often focused on the pupil's performance and his/her behaviour. The Act on pedagogical and vocational training employees imposes an obligation on them to protect them from unprofessional interference with their pedagogical or training activities.

The Education Act regulates rights and obligations of parents or legal representatives of pupils; teachers and parents must communicate (parents have the right to be informed on educational performance of their children, they have the right to be provided with educational counselling concerning their children, etc.; parents or legal representatives are required to e.g. comply with the conditions of educational process defined by the school regulations, to inform the school or school facility on changed health condition of their children, their health problems or other important information that may influence the process of education, and other).

Individual communication with parents is most often the task of the class teacher, but it is often forgotten that it is the task of all teachers. Many schools organise regular consultations with parents or legal representatives of pupils. Dealing with problem and conflict situations must be done individually, not on group meetings with parents. Cooperation with parents is supported by vocational training employees, who often also actively participate on this cooperation (e.g. social pedagogues, school psychologists).

Competency profile of elementary and secondary school teachers, high school teachers and class teachers also defines the area of cooperation with parents and legal representatives of pupils. Elementary, secondary and high school teacher:

- uses suitable, verified (recommended) methods and tools (interview, questionnaire for legal representatives, analysis of a pupil's personal file, etc.) to evaluate the influence of socio-cultural environment on the development of pupils;
- respects the dignity of all pupils, applies clear and understandable rules that support good-quality relationships and mutual cooperation with legal representatives of pupils;

- represents the profession and the school in relation to legal representatives and other partners of the school;
- chooses and uses methods and tools (trust box, questionnaire for the legal representatives of pupils, observation, etc.) to identify problems and barriers in cognitive, social, moral and character development of pupils;
- identifies the demonstrations of socio-pathological behaviour, actively cooperates with legal representatives and professionals (colleagues) in order to eliminate them;
- evaluates the effectiveness of interventions (solutions) in elimination of socio-pathological phenomena in cooperation with legal representatives of pupils.

Class teacher, using methods and tools of pedagogical diagnostics, identifies the specifics in personality development of a pupil/child in the classroom, learning styles and behaviour of children/pupils in the classroom, as well as specifics of social and cultural environment (family, etc.) on the basis of his/her own discoveries or on the basis of suggestions from legal representatives, other teachers, or other pedagogical employees. He/she plans and projects cooperation with legal representatives of children/pupils and with general public. Among his/her activities belong cooperation with legal representatives of children/pupils, with pedagogical and vocational training employees of the school and school community, effective communication and cooperation with legal representatives of children/pupils, coordination of counselling for children/pupils and their legal representatives in accordance with their special needs.

It is important to consider the fact that parents, in communication with a teacher, may respond unproductively, e.g. when they inappropriately apply (Lipnická, 2017):

- defending – they uncritically view their children, they deny any problems, they don't see the cause in their children,
- accusations – they find the causes of their child's problems in an unprofessional approach of the teacher,
- protecting – defending their children, overprotecting them and advocating their deficiencies and problems,
- obloquy – obscuring the truth, falsely and unjustly defaming, judging and humiliating the teacher,
- intercession – they ask for benefits for their children, they ask for ignoring their problems, to endure them.

In 2010, we conducted a questionnaire research among teachers at elementary, secondary and high schools in the mid-Slovakian region (Emmerová, 2011). The research sample consisted of 196 elementary and secondary school teachers and 155 high school teachers, total of 351 respondents. The goal of the research was to analyse, from the perspective of teachers, the occurrence of problem behaviour of elementary, secondary and high school pupils, forms of preventive activities in the researched school environment and dealing with the behaving problems as well as cooperation with the family of pupils. Our results show that teachers from practice most often rated the cooperation with family as satisfactory (46.72% of respondents) and as good (25.36% of respondents). Bad cooperation was stated by 15.67% of respondents and very bad cooperation by 2.85% of teachers. Only 2.56% of respondents rated the cooperation as excellent. Generally, we can state that cooperation with family was better rated by elementary and secondary school teachers than by high school teachers.

Within this question, respondents had an option to write down their own opinion. Most frequently stated opinion was that only parents of non-problematic pupils (concerning either school performance and behaviour) attend school meetings and other school activities.

In the research of Z. Hrivíková (2016), 58.29% of respondents stated that the problem a prevention coordinator has to face is parents' unwillingness to cooperate. Also, 81.25% of school social pedagogues stated the problem with insufficient cooperation with parents and the same number of social

pedagogues requires improvement of cooperation with parents on dealing with problem behaviour of pupils. 33.18% of prevention coordinators suggests improvement of cooperation with families.

Situations when pupils need professional help require sensitive approach. Pedagogical or vocational training employee must explain to parents that consulting a professional is in the child's best interest. It is suitable to provide contacts, e.g. an address of the counselling facility.

Pedagogical and vocational training employees must consider the possibility that problem behaviour of a pupil, or rapid worsening of his/her performance, may be caused by family problems. Some attitudes and approaches of parents may have negative impact on emotional development of their children, e.g. being afraid of conflict and difficult situations, being unable to handle failure, being unable to speak of their emotions, etc. Deficiencies in the failure of the dominant socializing agents, including family, may project into problem behaviour of children and youth. Family is a dominant socializing agent and, as stated by B. Kraus (2016), socialization takes place in the environment of various levels, various degrees of quality, and thus, due to the influence of unfavourable and undesirable incentives (persons) in terms of optimal personality development, it may happen that the resulting behaviour will deviate from the norm. Social environment and its negative impact is mainly based on un-supportive, unsuitable, or even pathological family environment. In such environment, children acquire undesirable patterns of behaviour. Such environments include families in which one or both parents are anomalous personalities; families that are only functional on a formal level and don't provide children with incentives necessary for their harmonious development; families that are part of a subculture or a social group that tolerates or even supports such behaviour that is considered defective by the majority society. A significant role is also played by the quality of relationships in family, disagreements in upbringing and inconsistency, but also exaggerated childcare. In many families, parents prefer free, liberal upbringing – however, they misunderstand it as an upbringing without any rules and limits. There is also a significant relationship between alcohol consumption of parents and children. Family environment has a determining influence on the healthy personality development of children and it also provides patterns of behaviour. In this context, M. Hutyrová, M. Růžička and J. Spěváček (2013) point out that there are two possibilities how to cooperate with families: on a restrictive level and on a motivational level. Pedagogical and vocational training employees at schools have in this sense competences on the motivational level; the restrictive level is mainly the competence of the Labour, Social affairs and Family Resort.

Special attention in the area of socio-educational care at schools should be paid to pupils from socially disadvantaged environment and actively work with them. Pupils from a socially disadvantaged environment are according to the Act on education and training pupils living in an environment that due to social, family, economic and cultural conditions insufficiently supports the development of mental, volitional, emotional properties of children or pupils, does not support their socialisation and does not provide them with enough adequate impulses for the development of their personalities.

In the Slovak Republic, these are mainly low-socialized Roma families who live most often in segregated settlements. Nowadays, despite efforts of school institutions to engage parents in the school life, there are still many barriers and prejudices, especially in the Roma community. According to D. Kopčanová (2014), the attributes of school failure of Roma children indicate that the attitude of parents towards education is very important. If a good-quality cooperation between parents and school is established, it has many positive results: development of trust between school and parents, parents and teachers work as a team to create positive learning experience for pupils, pupils benefit from the work of cooperating teams of adults. Good-quality cooperation with parents supports

effectiveness of teachers' and other professionals' work with pupils. Cooperation should be based on teamwork and effective communication, including mutual acceptance, respect and tolerance.

Effective cooperation of school and family can also be supported by vocational training employees at school, especially the social pedagogues. This is recommended also by P. Ďurana and D. Chlebková (2017). Social pedagogues are according to the valid legislative vocational training employees of schools. Their activities at schools in the Slovak Republic are defined in the legislative. According to the Act on education and training, one of the components of the system of educational counselling and prevention is also a social pedagogue and the Act on pedagogical and vocational training employees included him into the category of vocational training employee with clearly defined roles. A social pedagogue: implements preventive activities; provides counselling and intervention focused on children and pupils with risk behaviour, endangered by socio-pathological phenomena and from socially disadvantaged environment; provides counselling to the legal representatives, pedagogical and vocational training employees; undertakes socio-pedagogical diagnostics of the environment and relationships; raises awareness and performs other activities in the area of socio-educational area.

Since the school year 2014/2015, the number of vocational training employees at elementary and secondary schools has increased within the PRINED project. The national PRINED project was aimed to support inclusive environment in kindergartens and elementary and secondary schools in order to ensure the prevention of unjust placement of Roma children into the special school system and through creating special inclusive teams to support inclusion of pupils from marginalized Roma communities. The strengths of the cooperation of social pedagogues with parents within the PRINED project are according to the Final evaluation report the following:

- providing counselling to parents,
- establishing trustful relationships and the fact that someone listens to them,
- field work with families,
- help with upbringing,
- improvement in communication and school-parent-pupil cooperation,
- stronger regard to school attendance.

The importance of establishing the position of a school social pedagogues at elementary, secondary and high schools in the Czech Republic is proved by the results of the study called Introducing the position of social pedagogue at schools (feasibility study), according to which the biggest challenge social pedagogues face nowadays is the passive attitude of the majority of parents towards school (Moravec et al, 2015). At schools with high number of socially disadvantaged pupils and pupils with problem behaviour, social pedagogues are irreplaceable. However, each school is different and thus the social pedagogue's job description must be defined in a broad and open way. Social pedagogues do not work solely with the families from socially disadvantaged environment, but with all families. Especially urgent is their cooperation with families of pupils with problem behaviour. Slovak school practice shows that social pedagogues are also useful at schools attended by higher number of pupils from marginalized Roma communities.

3 Conclusion

Cooperation of school and family is extremely important in general, but especially so in prevention of socio-pathological phenomena. When dealing with problem behaviour of pupils, it is absolutely necessary. Schools should try to intensify cooperation with the families of their pupils, inform them on the school environment and on pedagogical and vocational training employees of the school. Communication of the pedagogical and vocational training employees with parents should be emphatic but professional.

In communication with parents, it is important to use comprehensible language, avoid difficult questions and foreign words, speak calmly and soberly, not embarrassing the parents. Parents have the right to be informed on the education of their child, and to cooperate on it. It creates space for cooperation and communication of the school employees and parents. Teachers and vocational training employees maintain the autonomy of their work, but they can't do what parents say, they also can't criticise them. It is important to be aware of the potential barriers and obstacles in communication of teachers and parents (different intellectual potential, different values, not listening to each other, overestimating one's own authority – by both teachers and parents, etc.).

Special attention should be paid to the cooperation with families of children from socially disadvantaged environment. In cooperation with families, very important role is played by the class teacher. It would also be helpful to increase the number of vocational training employees at schools.

Nowadays in the school practice, class teachers are the ones who most often communicate with parents. They, after consultations with other professionals at school, present possible problem solutions to parents. However, all pedagogical and vocational training employees of the school can communicate with parents. Schools should establish clear rules of communication, e.g. determine the time for communication with parents, provide them with possibilities of cooperation that best suit their needs and possibilities.

Literature:

1. Bellová, S. – Siváková, G. – Tišťanová, K.: Devaluation acts of learners against teachers at Slovak schools. In: *AD ALTA – Journal of Interdisciplinary Research*. 2019, 1, pp. 12 – 14.
2. Ďurana, P. – Chlebková, D.: The impact of globalization on need of social pedagogues in schools. In: *CBU International Conference on Innovations in Science and Education*. 2017, pp. 587 – 592.
3. Emmerová, I.: Prevention of pupils' problem behaviour in school environment in the Slovak Republic. In: *The New Educational Review*. 2011, 2, pp. 162 – 172.
4. *Evalvačná správa z projektu PRINED – Projekt Inkluzívnej Edukácie. Záverečná evalvačná správa*. 2015. Bratislava: MPC, 2015, 136 p. ISBN 978-80-565-1415-3.
5. Hollá, K.: Cyberbullying as a negative result of cyber-culture of Slovak children and adolescents: selected research findings. In: *Journal of Language and Cultural Education*. 2016, 2, pp. 40 – 55.
6. Hrivíková, Z.: Activities performed by social pedagogues and prevention coordinators in primary schools. In: *Socialia 2015*. Hradec Králové: Gaudeamus, 2016, 99. 77 – 83. ISBN 978-80-7435-655-1.
7. Hutyrová, M. – Růžička, M. – Spěváček, J.: *Prevence rizikového a problémového chování*. Olomouc: Univerzita Palackého, 2013, 96 p. ISBN 978-80-244-3725-5.
8. Jablonský, T.: Cooperative learning as an innovative trend in education. In: *The New Educational Review*. 2009, 3-4, pp. 17 – 28.
9. Jablonský, T.: Empirical Application Dimensions of Cooperative Learning Usage at School. In: *The New Educational Review*. 2010, 1, pp. 239 – 247.
10. Kolaříková, M. – Petrová, A. – Urbanovská, E.: *Profesní připravenost učitelů základních škol v oblasti řešení rizikového chování a možnosti jeho prevence v Moravskoslezském kraji II. Psychologické aspekty*. Opava: Slezská univerzita, 2017, 190 p. ISBN 978-80-7510-236-2.
11. Kopčanová, D.: Predbežná analýza depistáže detí zo sociálne znevýhodňujúceho prostredia. In: *Komplexný poradenský systém prevencie a ovplyvňovania sociálnopatologických javov v školskom prostredí*. 2014, č. 4, pp. 28 – 39. ISBN 978-80-89698-02-8.
12. Kopecký, K. – Sztokowski, R.: Specifics of cyberbullying of teachers in Czech schools – A national research. In: *Informatics in Education*. 2017, 1, pp. 103 – 119.
13. Kraus, B.: Upbringing and socialization in the contemporary family. In: *The New Educational Review*. 2016, 4, pp. 40 – 49.

14. Lipnická, M.: *Poradenská činnosť učiteľa v materskej škole*. Praha: Portál, 2017, 104 p. ISBN 978-80-262-1179-2.
15. Moravec, Š. et al. *Zavedení pozice sociálního pedagoga do škol (studie proveditelnosti)*. Plzeň: Společnost Tady a teď, o.p.s., Demografické informační centrum, o.s., 2015, 120 p.
16. Niklová, M. – Novocký, M. – Dulovics, M.: Risk aspects of online activities in victims of cyberbullying. In: *European Journal of Mental Health*. 2019, 14, pp. 156 – 167.
17. Nociar A. Závěrečná správa z prieskumu TAD u žiakov ZŠ, študentov SŠ a ich učiteľov v roku 2018. Bratislava, Výskumný ústav detskej psychológie a patopsychológie, 2018, 87 p.
18. *Pokyn ministra č. 39/2017, ktorým sa vydávajú profesijné štandardy pre jednotlivé kategórie a podkategórie pedagogických zamestnancov a odborných zamestnancov škôl a školských zariadení*. Bratislava: Ministerstvo školstva, vedy, výskumu a športu SR, 2017. Available at: www.minedu.sk
19. Procházková, M. – Vítečková, M. – Gadusová, Z.: Implementation of primary prevention in primary and secondary schools in the Czech Republic. In: *Proceedings of ICERI 2016 Conference*. 2016, pp. 7739 – 7746. ISBN 978-84-617-5895-1.
20. Rahman, S. – Abdulah, Z.: Meta-Behavioural Skill: Students without Problem Behaviour vs. Students with Problem Behaviour. In: *The New Educational Review*. 2013, 3, pp. 99 – 109.
21. Ročné výkazy V12 MPSVR SR o vykonávaní opatrení sociálnoprávnej ochrany detí a sociálnej kurately. Available at: www.upsvr.gov.sk
22. Scholzová, C.: *Význam spolupráce rodiny a školy*. Banská Bystrica: Metodicko-pedagogické centrum, 2012, 30 p.
23. Stuchlíková, I. et al. *Zvládání emočních problémů školáků*. Praha: Portál, 2005, 176 p. ISBN 80-7178-534-2.
24. Zadell, R.: *Advantages & disadvantages of parent cooperation in schools*. 2017. Available at: www.ehow.co.uk
25. Zákon č. 245/2008 o výchove a vzdelávaní (školský zákon) v znení neskorších predpisov.
26. Zákon č. 317/2009 z 24. júna 2009 o pedagogických zamestnancoch a odborných zamestnancoch a o zmene a doplnení niektorých zákonov.
27. Zákon č. 138/2019 o pedagogických zamestnancoch a odborných zamestnancoch a o zmene a doplnení niektorých zákonov.

Primary Paper Section: A

Secondary Paper Section: AM

FOREIGN DIRECT INVESTMENTS AND THEIR IMPACT ON DEVELOPMENT OF ECONOMIC INDICATORS: EVIDENCE FROM SLOVAK REPUBLIC

^aMICHAL FABUS

School of Economics and Management of Public Administration in Bratislava, Slovak republic, Department of Economics and Finance, Furdekova 16, 851 04 Bratislava, Slovak republic email: ^amichal.fabus@vsemvs.sk

The paper is the output of an international scientific project IGA no. 2/2018 - M „Problems and Suggestions - Comparison of Commercial Environment between China - Slovakia and Facilitation of Trade and Investment“. (Funder: Internal Grant Agency VSEMvs, i.e. School of Economics and Management in Public Administration)

Abstract: The issues of foreign direct investment and their impact on the country's economy is still a much-discussed topic. On the example of the Slovak Republic, we will try to analyze the influence of FDI inflow on selected economic indicators. In addition to the FDI inflow, we will consider the unemployment rate, the average nominal wage, and GDP in Slovakia for selected indicators. Using the Pearson correlation coefficient and regression analysis using linear regression, we will analyze the significance of the interrelationships between variables based on data for 15 years (from 2003 to 2017).

Keywords: foreign direct investments, economic growth, average wage, unemployment, Pearson correlation coefficient, Slovak republic.

1 Introduction

There are several opinions and definitions of foreign direct investment (FDI) in the literature. Foreign direct investment refers to the purchase of foreign assets for control purposes. Under control, we understand the management of the company whose assets have been purchased (Dudas, 2010).

Foreign direct investment can also be defined as the longer-term interest of a resident entity in one country by a company located in another country. Longer-term interest is the existence of longer-term relationships and the significant influence of the investor on the management of the company. Direct investment represents both initial investment and all subsequent capital flows within companies. These features distinguish FDI from portfolio investment.

Portfolio investments are investments in a company where the investor does not interfere with the management of the company, but his interest is merely the appreciation of his share. In determining the existence of a direct investment relationship, the 10% share capital or enterprise voting power criterion is used in accordance with international standards (Dudas, 2010).

In addition to the above definitions, FDI is seen as an effective tool needed to boost the economy's performance. FDI inflows into countries have a positive impact on GDP developments, unemployment rates, labor productivity, the contribution of new technologies and production processes, know-how and increased domestic human capital skills.

The Slovak Republic is booming in investment. In the 1990s, developments in FDI area was lagging. In particular, the following political developments beginning 2000s, were quite rapid and thus the investment started to develop the economy of the country rapidly, making Slovakia one of the most developing countries in the euro area over the past ten years.

This paper aims to analyze the impact of FDI on the country's economic indicators. Based on the Pearson correlation coefficient r we first determined the intensity of the relationship, respectively, the strength of statistical dependence between FDI and variables - unemployment rate, average nominal wage and GDP in Slovakia. In the second step, we performed a regression analysis using linear regression, which tested the quality of the relationship between FDI and variables unemployment rate, average nominal wage and GDP in Slovakia. As for the time series of all 4 variables, we used the National Bank and the Statistical Office of Slovak republic data. The test period was 2003 to 2017, indicating that the number of variables for statistical testing was 15 altogether.

2 Literature review

In the past, goods exchange played a major role in the development of business activities, with changes in capital movements later. The international movement of capital has reached a rapid pace, globalization has facilitated this process of growth and expansion. It has brought simplification and acceleration of processes. International capital flows into different economies in different economies, including foreign direct investment (FDI). FDI plays a very important role in international business - it represents international capital movements and external sources of economic and economic growth of the economy (Dudas, 2010). Being also an additional source of funding FDI can be called the up-to-date driver for development (Kaminska, 2016). This is a very complex process, as there are different political, legal, economic, and cultural environments in each country. Historically, we can say that the first mention of FDI goes back to the end of the 1950s. In the 1970s and 1980s, the boom began to grow. Today, they are part of the economy of countries where the FDI indicator is one of the main indicators of the national economy.

FDI is defined as a long-term investment of a foreign direct investor in an enterprise resident in another country's economy, not in a foreign investor's home country. The relationship of foreign direct investment consists of a parent company and foreign affiliates, which together form a multinational corporation (Fabus, 2015). Under the constant share we understand the existence of the long-term nature of the direct investor and the direct investment enterprise, its significant contribution to the management of the business. The criterion that is in line with international standards to determine the existence of a direct investment is a 10% share of the core capital or voting rights in an enterprise.

In the theory of FDI motivation of multinational corporations, Dunning creatively divides FDI into resource motive, efficiency seeking, market seeking and strategic asset seeking four motives (Dunning, 2001), which becomes the basic paradigm for studying OFDI motivation and behavior.

FDI can have a significant impact on regional development. On the one hand, FDI tends to focus on advanced regions and thus increase regional disparities, on the other hand, it can be a significant exogenous impulse for the development of regions. FDI inflows alone do not provide for any equalization of regional disparities, but for developing countries it is one of the basic instruments for achieving economic growth. It is economic growth that is one of the basic conditions for improving equality and convergence of regional disparities (Blanc-Brude, et.al. 2014).

The issue of investment attractiveness determinants is currently a topic often dealt with in many publications of both Slovak and foreign authors. The significance of factors affecting investment attractiveness is dealt with for instance by A. Bevan (2000, 2004), S. Estrin (2000, 2004) and K. Meyer (2004), who divide these factors into two basic groups (political and economic factors) and differentiate between factors affecting host and domestic economies. S. Brakman and H. Garretsen (2008) seek the main reasons leading companies to foreign investments as well as ways how a foreign market can be entered. Other authors (e.g. Dudas 2010; Fabus 2017, 2018; Csabay, 2018) deal with individual factors and their impact on economic development, respectively economic growth, and motivation of investors, economic and political conditions created in a host country. If a foreign investor enters the market, it contributes to the formation of the host country's gross domestic product by generating a profit from which to pay taxes. Theoretical background of investment attractiveness and the theories of creation, respectively motivation of FDI creation and movement were based on leading foreign authors. The best known is J. H. Dunning (1979, 2001) and his eclectic theory based on three

categories of factors shaping the decision-making of investors. Dunning introduced a well-known OLI paradigm and motives which are essential in decision-making on investment, like advantages resulting from ownership and ownership rights, advantages resulting from information on human resources and new information and specific advantages resulting from a locality (Dunning, 1977, 1979, 2001). As far as Slovak authors are concerned, we can mention J. Tancosova (2013, 2014), who analyze determinants and location, and their significance in relation to an access to FDI, and T. Dudas (2010), who deals with the significance of workforce.

Among other things, foreign direct investment also supports the development of national economies, increases employment in the regions and has a positive impact on the trade balance. Foreign investors are entering new markets because of sales diversification. Similarly, due to a skilled and cheap labor force, either because of increased turnover or the opportunities of new markets. In terms of employment, FDI entering the host country has a significant impact on maintaining or increasing domestic employment, growth in labor skills and wage growth.

The wage level is considered by several authors to be one of the most important factors influencing the decision to invest in a large number of economic sectors in transition economies. Dunning (1979) argues that labor costs are a significant variable for foreign direct investment investors in 1970, and remains a significant variable over the 1990s, along with the existence of a skilled and skilled workforce. (Paul, et al., 2014)

Bobenič Hintošová, A., Bruothová, M., Kubíková, Z., & Ručinský R. (2018) have identified the level of gross wages and the share of labour force with achieved at least secondary education, as the most significant determinants with the positive effect on FDI inflows.

3 Methodology

The correlation is a statistical method that compares the dependencies between the two variables X and Y. It represents a value that examines whether it is just a random event, or that the values compared are dependent and to what extent. The correlation value is expressed numerically, ranging from 1, positive correlation, to -1, negative correlation. Thus, a positive correlation result is a direct dependence, while a negative correlation result is a dependency of the indirect. Thus, values ranging from -0.5 to +0.5 are defined as a weak linear dependence. The closer the resulting value of the compared phenomena to 0, the less dependency between the variables compared to each other. Thus, the correlation coefficient measures the magnitude and strength of the dependence between the two interval variables.

Pearson's correlation coefficient expresses the degree of dependence between two variables. The reader is called covariance. The calculation is feasible only for those variables that are specified at certain intervals. If the correlation between two variables changes as 0.1, this correlation is called trivial. If the correlation has reached 0.1-0.3, we know that there is a small correlation between the two variables, which also indicates a small dependence. The correlation value between 0.3 and 0.5 expresses the mean dependence if the correlation exceeds 0.5, then we are talking about a large dependency. The correlation of 0.7-0.9 represents a very high correlation and thus a high dependence of one variable from the other variable. If the correlation is greater than 0.9, we call it perfect dependence. However, when calculating the correlation, we must also consider whether we compare variables of a similar nature, otherwise the correlation is irrelevant (Hindls, 2007). The formula for calculating the Pearson correlation coefficient is as follows:

$$r_{XY} = \frac{s_{XY}}{\sqrt{s_x^2 \cdot s_y^2}},$$

$$s_{XY} = \frac{1}{n-1} \sum_{i=1}^n (x_i - \bar{x})(y_i - \bar{y}), \quad s_x^2 = \frac{1}{n-1} \sum_{i=1}^n (x_i - \bar{x})^2, \quad s_y^2 = \frac{1}{n-1} \sum_{i=1}^n (y_i - \bar{y})^2,$$

$$r_{XY} = \frac{n \cdot \sum_{i=1}^n x_i y_i - \sum_{i=1}^n x_i \cdot \sum_{i=1}^n y_i}{\sqrt{\left(n \cdot \sum_{i=1}^n x_i^2 - \left(\sum_{i=1}^n x_i \right)^2 \right) \cdot \left(n \cdot \sum_{i=1}^n y_i^2 - \left(\sum_{i=1}^n y_i \right)^2 \right)}}$$

Formula 1 Pearson correlation coefficient

The determination coefficient represents the increased value of the Pearson correlation coefficient. The value of this coefficient indicates in what size the variability of one variable determines the variability of the other variable. It is expressed as a percentage. For example, if $r = 4$, the coefficient of determination will be $r^2 = 0.16$; $0.16 \times 100 = 16\%$. This means that 16% of the variability of one and the other variable is determined together.

The Spearman coefficient is used for ordinal or interval variables that do not have a classical distribution. If we use interval variables to calculate, they must first be converted to ordinal variables. The value of the calculation results does not change and is expressed between -1 and 1.

Formula to calculate the Spearman coefficient:

$$R = 1 - \frac{6 \sum d_i^2}{n(n^2 - 1)}$$

Formula 2 Spearman coefficient

In this paper we are using basic statistical data from Statistical office of Slovak republic and Slovak National Bank from the period of 2003-2017. With this dataset we analyse FDI and economic indicators using the Pearson correlation coefficient, which examines the dependence between selected economic indicators of Slovak economy.

4 Empirical results and discussion

Using the Pearson correlation coefficient r we first determined the intensity of the relationship respectively. the strength of statistical dependence between FDI and variables - unemployment rate, average nominal wage and GDP in Slovakia. In the second step, we performed a regression analysis using linear regression, which tested the quality of the relationship between FDI and variables unemployment rate, average nominal wage and GDP in Slovakia. As for the time series of all 4 variables, we used the National Bank and the SO SR data. The test period was 2003 to 2017, indicating that the number of variables for statistical testing was 15.

The inflow of FDI generally contributes to the creation of new jobs and thus to the problem of unemployment. Unemployment in Slovakia started to decline in the same period when the first major foreign investments started to emerge in Slovakia.

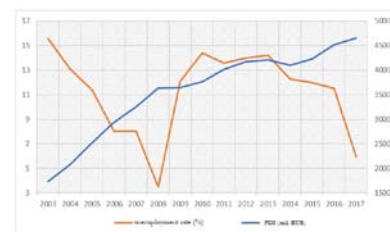


Figure 1 FDI inflow to Slovakia and unemployment rate in Slovakia in 2003 – 2017
Source: Authors' results

The results of the correlation analysis pointed to the fact that between FDI and the unemployment rate there is only a weak negative dependence (correlation coefficient $r = -0.177$) with p -value at $p = 0$,

528 > 0.05 which further indicates that it is statistically non-significant relationship, meaning there was no statistically significant relationship between the FDI inflow and the unemployment rate between 2003 and 2017, with a change in FDI inflows likely to result in a change in the unemployment rate. We can assume that this was mainly due to the fact that other economic factors are also affecting the development of unemployment and FDI is only one of them.

Correlations Marked correlations are significant at $p < ,05000$ N=15		
	FDI	Unemployment rate
FDI	1,0000 p=---	-,1770 p=,528
Unemployment rate	-,1770 p=,528	1,0000 p=---

Table 1 Result of correlation analysis between FDI and unemployment rate 2003 - 2017
Source: Authors' results

We examined the quality of variables - FDI and the change in the rate of unemployment in Slovakia through regression analysis and / or regression analysis. using the linear regression method, the time series being 2003 to 2017. Figure 2 shows the result of the regression analysis in which a very slightly decreasing trend line with the equation can be observed: unemployment rate = 13.758 - 0.00007 * FDI (ie unemployment rate of 13.758%, while FDI of EUR 1 million causes only a slight reduction of unemployment by 0.00007). Also, the view of data point distribution (data points are scattered unevenly around the regression line) indicates that the relationship between the variables being examined is very weak. In addition, the determination coefficient $r^2 = 0.0313$ (ie 3.13%) reaches a very low value, which means that the test value of this test is very low (this model explains only 3.13% of the relationship between the variables examined).

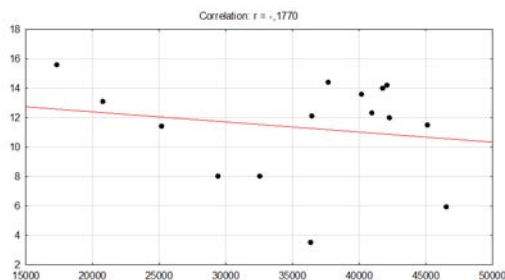


Figure 2 The relationship between FDI inflow and unemployment in Slovakia in 2003-2017
Source: Authors' results

An important positive effect of foreign direct investment is the economic growth expressed by the growth of gross domestic product, where GDP represents the value of goods and services expressed in monetary terms over a period of time in the territory of the state. This indicator is also used as an indicator for measuring the performance of the economy.

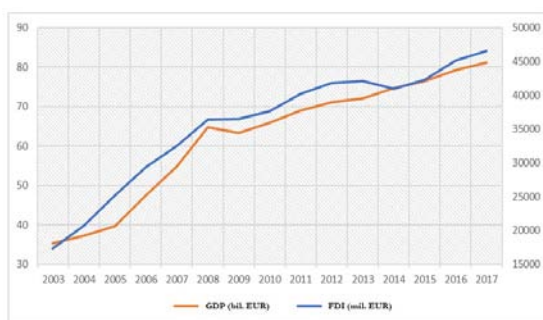


Figure 3 FDI inflow to Slovakia and GDP in 2003 – 2017
Source: Authors' results

In the case of the dependence of GDP and FDI in Slovakia, the correlation coefficient $r = 0.9865$, which indicates a strong, positive, statistically significant correlation between FDI and GDP variables in Slovakia in the period under review ($p = 0.000 < 0.05$), t. j. the inflow of investment from abroad has significantly affected the GDP growth in Slovakia.

The results of the regression analysis refer to a significantly increasing trend line with the GDP equation = $0.48269 + 0.00173 * FDI$. The regression coefficient $a_0 = 0.48269$ (the so-called level constant) represents the GDP value at zero inflow of FDI, the coefficient a_1 (the so-called regression line directive) indicates the change in GDP values corresponding to the unit change of FDI (ie GDP increases by 0,00173 bil. EUR with the inflow of 1 mil EUR = 1.73 mil. EUR).

It is also apparent from Figure 4 that the observation points are evenly distributed around the regression line, suggesting that the regression analysis's predictive power is high. Thus, we can say that the regression analysis confirmed expectations about the positive impact of FDI inflows on GDP growth in the period under review. Also, the determination coefficient $r^2 = 0.9732 = 97.32\%$ with a very high value confirms that the test value of this test is very high.

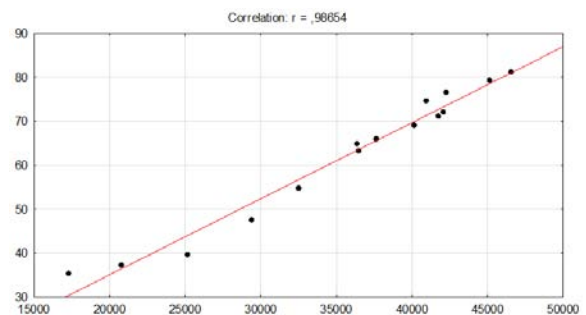


Figure 4 The relationship of FDI inflow and GDP in Slovakia in 2003-2017
Source: Authors' results

In the case of the last investigated dependence, the results of the correlation analysis also confirmed a strong, positive, statistically significant dependence between the examined pair of FDI variables and the average nominal wage in Slovakia ($r = 0.9901 \rightarrow 1$; $p = 0.0000 < 0.05$). Thus, the inflow of foreign investment into Slovakia was significantly affected by the increase in the average nominal wage in the period under review.

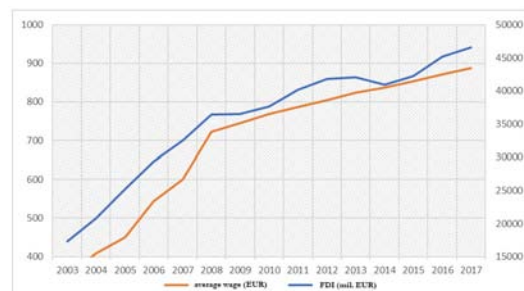


Figure 5 FDI inflow to Slovakia and average wage in Slovakia in 2003 – 2017
Source: Authors' results

The results of the regression analysis, respectively. linear regression with regression line equation: average wage = $0,02009 * FDI - 14,49$ speak of growing trend of average nominal wage depending on inflow of foreign investment in Slovakia (coefficient $a_1 = 0,02009$, which represents increase of average nominal wage by 0,02009 EUR for FDI of 1 mil EUR). As further seen from Figure 5, the data points are equally spaced around the regression line and point to the high repetition

capacity of the regression analysis (the determination coefficient $r^2 = 0.9803 = 98.03\%$, thus the model used explains up to 98.03% of the relationship between monitored variables).

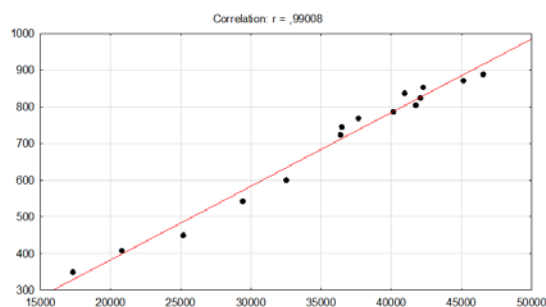


Figure 6 FDI inflow and average wage growth in Slovakia in 2003-2017

Source: Authors' results

5 Conclusion

In the paper we dealt with the relationship between FDI and Slovakia's economic growth represented by selected indicators. We wanted to find out how the inflow of FDI affects unemployment. Governments advocate that FDI is also beneficial in reducing unemployment. We do not agree with this statement, because our research has brought results that, with zero FDI inflows, the unemployment rate reaches 13.758%, while FDI of 1 mil. EUR only a slight reduction in unemployment of 0.00007. Also, the view of data point distribution (data points are scattered unevenly around the regression line) indicates that the relationship between the variables being examined is very weak. There are several studies that deal with empirical research into the relationship between GDP and FDI and confirm the results of our research. In the case of the dependence of GDP and FDI in Slovakia, the Pearson correlation coefficient reached 0.9865, which indicates a strong, positive, statistically significant correlation between FDI and GDP variables in Slovakia in the period under review. This means that the inflow of foreign investment has significantly affected the GDP growth in Slovakia in the period under review. There is a dependence where FDI inflows have a positive and important impact on GDP growth. Another relationship examined was the relationship between average nominal wages and FDI. Here, too, the hypothesis of dependence between the pair of variables examined was confirmed: FDI and the average nominal wage in Slovakia. Thus, the inflow of foreign investment into Slovakia was significantly affecting the increase in the average nominal wage in the period under review. The results of the regression analysis, respectively the linear regression with the regression line equation speaks of the growing average nominal wage trend depending on the inflow of foreign investment into Slovakia.

Literature:

1. Bevan, A., & Estrin, S. *The Determinants of Foreign Direct Investment in Transition Economies*. Centre for New and Emerging Markets, London Business School 2001. Retrieved from <http://deepblue.lib.umich.edu/bitstream/handle/2027.42/39726/wp342.pdf?sequence=3>
2. Bevan, A., Estrin, S., & Meyer, K. *Foreign investment location and institutional development in transition economies*. *International Business Review*, 13(1), 2004 43-64. Retrieved from <http://www.sciencedirect.com/science/article/pii/S0969593103001082>
3. Blanc-Brude, F., Cookson, G., Piesse, J., & Strange, R. *The FDI location decision: distance and the effects of spatial dependence*. *International Business Review*, 23(4), 2014, 797-810. <https://doi.org/10.1016/j.ibusrev.2013.12.002>
4. Bobenič Hintošová, A., Bruothová, M., Kubíková, Z., & Ručinský R. *Determinants of foreign direct investment inflows: A case of the Visegrad countries*. *Journal of International Studies*, 11(2), 2018. 222-235. doi:10.14254/2071-8330.2018/11-2/15
5. Brada, J. C., Drabek, Z., & Perez, M. F. *The effect of home-country and host-country corruption on foreign direct investment*. *Review of Development Economics*, 16(4), 2012. 640-663. <https://doi.org/10.1111/rode.12009>
6. Brakman, S., Garretsen, H. *Foreign direct investment and the multinational enterprise*. Association for evolutionary economics. 2008. Retrieved from http://mitpress.mit.edu/sites/default/files/titles/content/9780262026451_sch_0001.pdf
7. Dudas, T. *Priame zahraničné investície v slovenskej ekonomike* [Direct foreign investment in the Slovak economy]. Bratislava: Vydavateľstvo EKONOM. 2010 (in Slovak).
8. Dunning, J. H. *Explaining changing patterns of international production: in defence of the eclectic theory*. *Oxford Bulletin of Economics and Statistics*, 41(4), 1979. 269-295. <https://doi.org/10.1111/j.1468-0084.1979.mp4104003.x>
9. Dunning, J. H. *The Eclectic (OLI) Paradigm of International Production: Past, Present and Future*. *International Journal of the Economics of Business*, 8(2), 2001. 173-190. <https://doi.org/10.1080/13571510110051441>
10. Dunning, J. H. 'Trade, location of economic activity and the MNE: a search for an eclectic approach', in B. Ohlin, P.O. Hesselborn and P.M. Wijkmon (eds.) *The International Location of Economic Activity*, London: Macmillan, 1977. 395-418.
11. Fabus, M. *Impact of foreign direct investment on unemployment development in selected regions of Slovak Republic*. *Economic Annals-XXI* 155(11-12), 2015. pp. 63-66
12. Fabus, M. *Current development of business environment in Slovakia and Czech Republic*, *Entrepreneurship and Sustainability Issues*, 5(1): 127-137. 2017. [http://doi.org/10.9770/jesi.2017.5.1\(10\)](http://doi.org/10.9770/jesi.2017.5.1(10))
13. Fabus, M. *Business environment analysis based on the Global Competitiveness Index (GCI) and Doing Business (DB): case study Slovakia*, *Journal of Security and Sustainability Issues* 7(4): 831-839. 2018. [http://doi.org/10.9770/jssi.2018.7.4\(18\)](http://doi.org/10.9770/jssi.2018.7.4(18))
14. Fabus, M.; Csabay, M. *State aid and investment: case of Slovakia*. *Entrepreneurship and Sustainability Issues*, 6(2), 480-488. 2018. [http://doi.org/10.9770/jesi.2018.6.2\(1\)](http://doi.org/10.9770/jesi.2018.6.2(1))
15. Haviernikova, K., Kordos, M., Navickas, V. *The motivation of Slovak small and medium entrepreneurs towards cluster cooperation*, *Transformations in Business and Economics*, Vol. 17, Issue 3, 2018. pp. 91-101
16. Hindls, R. et al. *Statistics for Economists*. 2007. Praha: Professional Publishing (in Czech).
17. Kaminska T. *Is the 'Flying Geese' Paradigm useful to explain advancement in the European Union by means of FDI phenomenon?*, *Journal of International Studies*, Vol. 9, No 2, 2016. pp. 9-24. DOI: 10.14254/2071-8330.2016/9-2/1
18. Paul, A., Popovici, A.C., & Calin, C.A. *The attractiveness of CEE countries for FDI. A public policy approach using the topsis method*. *Transylvanian Review of Administrative Sciences*. Issue 42, 2014, pp. 156-180 <http://www.rtsa.ro/tras/index.php/tras/article/view/96/92>
19. Tancosova, J. *Foreign direct investments and their influence on the economic development of Slovakia*. *Economic Annals-XXI*, 3-4(1), 2013. 31-34. Retrieved from <http://soskin.info/ea/2013/3-4/zmist.html>
20. Tancosova, J. *Investment attractiveness of Slovak republic and its determinants*. *Economic Annals-XXI*, 3-4(1), 2014. 8-11. Retrieved from http://soskin.info/userfiles/file/2014/3-4_2014/1/Tancosova.pdf
21. Tvaronavičienė, M. *Toward efficient policy making: forecasts of vulnerability to external global threats*, *Journal of Security and Sustainability Issues*, 7(3), 2018. 591-600. [https://doi.org/10.9770/jssi.2018.7.3\(18\)](https://doi.org/10.9770/jssi.2018.7.3(18))
22. Slovak National Bank (Official website). *Statistical Data*. Retrieved from <http://www.nbs.sk>
23. Statistical Office of Slovak Republic (Official website). *Statistical Data*. Retrieved from <http://portal.statistics.sk>

Primary Paper Section: A

Secondary Paper Section: AH

RELATIONSHIP OF CORPORATE SOCIAL RESPONSIBILITY AND INNOVATION IN SMES: CASE STUDY IN SELECTED CEE COUNTRIES

^aGÁBOROVÁ, IVANA

Pan-European University, Faculty of Economics and Entrepreneurship, Temátnska 10, 851 05, Bratislava, Slovakia
email: *ivanagaborova3@gmail.com*

Abstract: CSR has grown in importance since the economic crisis of 2008. Businesses attempted to search for solutions of economic issues by trying to explore new ways of conducting their business, thus, the perception and efforts to exploit the potential of CSR concept changed dramatically. It might also be a way out of the upcoming crisis for many SMEs. Implementation of CSR via innovation or innovating via CSR might bring them more resilience in the upcoming unprecedented times. As shown by statistical analysis (structural equation modelling) of the empirical data from CEE region - Austria, Czech Republic and Slovakia (n=607), innovative SMEs don't need to explicitly concentrate on CSR – its specific activities or reporting. The answer for SMEs lies in business strategy, innovation and sustainable business model.

Keywords: Corporate Social Responsibility, innovation, sustainability, business strategy, SMEs

1 Introduction

Corporate Social Responsibility (CSR) has become over the recent years, especially after the crisis in 2008, while seeking for solutions of ever increasing economic, social and environmental issues a stable concept in business. Topic has drawn a lot of attention of researchers during the last two decades (Baumgartner, Ebner, 2010; Boucquet, et al. 2017; Christensen, et al., 2014; Gelbmann, 2010; Nidumolu et al., 2009; Porter, Kramer, 2011; Ramesh et al., 2019; Visser, 2010; Voegtlin, Greenwood, 2016). However, the importance of socially responsible way of doing business was already a topic of researchers much earlier in the 20th century (Arlow, Gannon, 1982; Barnard, 1958; Carroll, 1999; Davis, Blomstrom, 1975; Elkington, 1994). Thus, it can be stated that the notion itself is not new but the actual perception and application of CSR concept in business practice is different.

Nowadays, modern companies realize more and more the importance of the actual way they perform their business activities. The result is not the only thing that is important. The way how it was achieved has the same level of significance. Sensitivity of customers and stakeholders to these issues is increasing (Coombs, Holladay, 2015; Dawkins, Lewis, 2003; Guenster et al., 2011; El Ghoul et al. 2017; Kim, Krishna, Danesh, 2019) and in addition, due to the exponential growth of technologies, they have much easier and instant access to relevant information about business practices. CSR is not only a value added to distinguish the business entity from its competition but a necessity for survival. Several studies in the past already proved positive relationship of CSR on financial performance (Anser et al. 2017; Lenz et al., 2017; Lev et al., 2010; Margolis, Walsh, 2003; Price, Sun, 2017; Ruggiero, Cupertino, 2018). CSR plays a key role in keeping the business sustainable, maintaining the competitiveness and general advancement of companies (Guenster et al., 2011; Lu et al. 2019). Doing business responsibly and considering its impact is the way how to develop the business and keep it sustainable also from the long term perspective. In the contemporary management practice, the role of sustainable development comes more into focus and CSR is one of the ways how business can approach it proactively (Lu, et al., 2019).

Companies are gaining the ability to see CSR not only as unnecessary expense with no real impact but as a chance to bring their business to the next level. Perception of CSR as only a cost item that doesn't bring any sustainable effect and persisting fear of it (Baumgartner, Ebner, 2010; Hwang, Kandampully, 2015) is not valid anymore. On the contrary, it can bring many financial benefits, become crucial element in company strategy, contribute to risk management and be a valuable addition in building business relationships (Heal, 2005). In order to be able to fully exploit the benefits of CSR concept, it is crucial to

understand CSR as a business opportunity (Rexhepi et al. 2013) and make it an integral part of performed activities since the initial stage. It should be inseparable part of all business processes. Corporate social responsibility must be a way of doing business and not a partial goal. Proactive approach and being part of the business strategy is inevitable. Only reacting to already emerged situation and mitigating the negative consequences of performed business activities - reactive approach to CSR, is not the ideal way of the implementation of this concept. This way, it has a lower chance of exploiting its full potential.

In the past, majority of research regarding CSR has been targeted at large companies. However, small to medium enterprises can have even higher impact due to their number and significance in the economy (employment or share on GDP). Their sustainable and ethical practices are less visible but their impact is equally relevant and meaningful. For this reason, empirical research of this study was targeted at SMEs. In addition, CSR is still considered to be a domain of large companies (Jenkins, 2004) and in addition, there is still lack of empirical data on CSR in SMEs (Perrini, et al., 2007) – especially in the CEE region that has been explicitly chosen for this study.

Results of empirical research (Gáborová, 2020) imply that innovative SMEs can have very strong CSR awareness including proactive approach towards its implementation into its business operations while still not concentrating on performing CSR activities as such. These relationships between innovativeness and CSR came out of the statistical analysis of the empirical data collected via questionnaire survey. Chi-square test confirmed the existence of the association and its strength was further confirmed by means of Cramer's coefficient (n=607, selected CEE countries Austria, Czech Republic, Slovakia). This contribution aims to further investigate these relationships and confirm stated hypotheses by further statistical analysis through structural equation modelling (SEM).

This article is a contribution to scientific literature at both, theoretical and practical levels. Firstly, it looks at the issue of CSR from a different point of view and sees the solution of effective CSR implementation for SMEs in innovation and not in application of various models and structured approach in general. Secondly, article provides empirical data for currently less researched CEE region – specifically for Austria (AT), Czech Republic (CZ) and Slovakia (SK).

The rest of this article is organized into four chapters. In the second chapter, theoretical framework is explained and research questions and hypotheses are stated. Third chapter explains the methodology of research and in the fourth chapter, results of the statistical analysis of the empirical data were provided and discussed. In the last, fifth chapter of this contribution, main findings and conclusions are summarized.

2 Theoretical framework and hypotheses

CSR has become an important business agenda over the years and is continuously developing into a business trend of the current era with high potential to prevail also for the future. The question is in which form this will happen. Defensive or reactive CSR approach is slowly being replaced by more proactive compliance and managerial CSR in the direction of core strategic CSR (Middtun, 2009; Zadek, 2004). CSR has to become natural part of the business strategy and a core competency of top management. It cannot be 'just tolerated' because the company needs to have socially responsible public image.

2.1 Literature review

CSR concepts itself is very hard to define and measure. Results of the studies attempting to prove the relationships between CSR

concept and financial performance are still contradictory. Some proved positive but some studies also show negative relationship.

Table 1 Overview of research findings of relationships between CSR and financial performance

Year	Author	Positive relationship	Negative relationship	No relationship
1997	Posnikoff	✓		
1997	Wright, Ferris		✓	
1999	Teoh, et al.			✓
2003	Margois, Walsh	✓		
2010	Lev, Petrovits, Radhakishan	✓		
2011	Gossling		✓	
2015	Meyer			
2017	Answer et al.	✓		
2017	Lenz et al.	✓		
2017	Price, Sun	✓		
2017	Varadajan, Kaul	✓		
2017	Boucquet	✓		
2018	Rugiero, Cupertino	✓		

Source: author's own

As the empirical research on the relationship between CSR and financial performance of business entity lacks consistency in the scientific methodologies results also tend to be quite confusing and not enough conclusive. According to McWilliams and Siegel (2000) the methodologies used in the vast majority of published studies are too weak. Measures of CSR are too vague, inconsistent and not clearly defined (Wang, et al., 2016). This raises questions and doubts regarding the concept itself which could negatively contribute to the perception of CSR by managers. The fear that CSR might even compromise the profits is still prevalent (Hwang, Kandampully, 2015).

However, there are positive examples seen in the business practice that imply that it is possible to do business in responsible way without explicitly concentrating on it and in addition, also maintain good business results. Companies with direct proportion between CSR and business results have one thing in common and that is innovation. It serves as a mediator or as a driver (Anser, Zhang, Kanwal 2017; Boucquet 2017; Gáborová, 2020; Marin, Martin, Rubio, 2016; Ruggiero, Cupertino, 2018, Surocca et al., 2010). This assumption takes the importance of equation innovation = idea + realization into consideration (Schrage, 2004). Innovation is not what company produces but what the customers are willing to buy and use. Innovation takes a crucial role in this process as any business idea can only be transformed into innovation if it is successful on the market. CSR cannot be omitted in this process as both customers and business stakeholders are nowadays sensitive to these issues (Tur-Porcar, 2018; Yoo, Lee, 2018). Actual necessity of innovation and its role in the successful business leads to the assumption that companies, especially SMEs can engage in CSR without having a conscious and structured approach to it.

Another contribution to currently prevalent unstructured approach to CSR in SMEs is the absence of the need to disclose and report on CSR to such an extent as large companies do. The less disclosure, the less structured approach is needed. Large companies, due to its high visibility, stricter legal obligations or need of reporting and disclosure mostly need to apply different methodology than small to medium enterprises. SMEs can afford more flexible approach and can find their own way of CSR concept implementation easier. Large companies are more legally bound, since 2018, non-financial reporting has become mandatory for public interest companies with more than 500 employees (European Commission, Non-financial reporting, 2017). This forces them into more structured methodologies and a necessity to use pre-defined metrics that can be reported or benchmarked easily.

SMEs, unlike large companies, have more freedom in getting to the required results but the requirements on them from customers or stakeholders are very similar. However, SMEs see their CSR from different angle and have different nature and content (Dias et al., 2019; Morsing, Perrini, 2009). What works for large companies, such as various complicated model

applications, is not suitable for small to medium enterprises. SME is not a "little big company" (Tilley, 2002) and can implement the practices of large companies only in different extent (Morsing, Perrini, 2009). SMEs can engage in CSR in many different ways with meaningful results. What cannot be overlooked is the fact that CSR legislation is more directed at large companies than SMEs which means their motivation for conducting socially responsible business is driven more by internal motivational factors than external and the need to bring visible results for the business itself (Arend, 2014; Moneva, Hernandez-Pajares, 2018; Nejati, Amran 2009; Santos, 2011). Research presented in this article, supported by statistical evaluation of the empirical evidence implies that indeed SMEs don't necessarily have to engage in structured CSR activities, use pre-defined metrics or apply specifically targeted policies and still achieve good results in their CSR.

2.2 Hypotheses

This scientific contribution aims to answer the following research questions arising from the above mentioned literature review and assumptions done based on the experience from business operations of SMEs:

1. Is there a direct proportion between high CSR engagement of SMEs and structured approach to it?
2. Do innovative SMEs that use pre-defined metrics engage more in CSR?
3. Does regular conducting of CSR activities influence level of CSR engagement in innovative SME?
4. Does implementation of targeted CSR policies significantly influence level of CSR engagement in innovative SME?

Research was based on the empirical data collected via questionnaire survey in selected CEE countries, namely Austria, Czech Republic and Slovakia. This region was selected for research from few reasons: knowledge of the region and SME market of the author, lack of empirical data on this topic from selected countries and recent formation of new geopolitical cooperation cluster in CEE region called S3 or Slavkov Triangle (fomed by Austria, Czech Republic and Slovakia in 2015).

Based on the research questions, three hypotheses were formed in order to validate the necessity of structured approach to CSR including specifically pre-defined CSR metrics usage, realization of CSR activities and implementation of targeted CSR policies. CSR is considered to originate in large companies as they are more exposed to attention from both general public and from the media (Dias et al., 2017; Jenkins, 2004). Small to medium enterprises are crucial contributors to the economy. They are flexible innovators who can help recover the economy especially in the times of economic crisis. This flexibility helps them to integrate CSR into their core processes while still having some drawbacks in PR or reporting of CSR whereas large companies often exceed the expectations in reporting and promotion but face difficulties in implementing CSR into many of their core business processes (Baumann-Pauly, et al., 2013; Lepoutre, Heene, 2006). Being less effective in promotion of CSR doesn't mean that it is less effective or meaningful for the wellbeing of the whole society.

H1: Innovative SMEs can be highly socially responsible despite applying unstructured approach to CSR.

By validating H1, necessity of structured approach to CSR in SMEs is to be questioned. Results of statistical evaluation of empirical data of the initial study (Gáborová, 2020) show that there is a significant relationship between innovation performance and CSR of SMEs. However, few exceptions were discovered. Statistical testing via chi-square and Cramer's coefficient imply that there is no association between regular conducting of CSR activities to mitigate social or environmental impacts of business operations and planning and monitoring of CSR through pre-defined metrics with innovativeness of SMEs. Survey was performed in three selected CEE countries (AT, CZ, SK). Results were collected via questionnaire survey consisting

of 47 questions and a final sample was 607 respondents (n=607) (Gáborová, 2020).

This contribution aims to look closer at this issue. Goal is to verify the implications of previous study and see if the outcome would be different – if indeed implementation of pre-defined metrics, usually with the purpose of detailed and extensive reporting and regular conducting of CSR activities do significantly influence the relationship of innovativeness and CSR of SMEs.

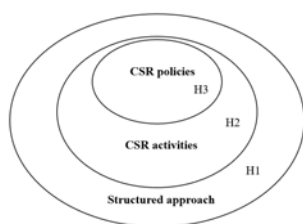
H2: Correlation between innovativeness of SME and conducting CSR activities is low.

The goal of confirming the second hypothesis is to prove that innovative SME can demonstrate high CSR engagement also without having to conduct specific CSR activities, mostly with the purpose to mitigate the impacts of their business operations on either environment or social impacts on the community where the enterprise operates. Moreover, confirming H2 is supposed to demonstrate the need of the CSR to be included in the strategy and that a successful and innovative enterprise has socially responsible way of doing business incorporated into their nature – core values and business strategy.

H3: There is no need for innovative SME to apply specific CSR policies in order to have high CSR engagement.

Companies tend to apply various policies with regards to CSR such as anti-corruption policies, procurement policies or implementing code of conducts. Confirming H3 is supposed to show that for innovative SMEs with CSR incorporated in their business strategy, implementing special CSR policies can be obsolete.

Figure 1 Illustration of hypothesis development



Source: author's own

3 Methodology of research

Getting reliable and trustworthy information on both CSR and innovation is not easy. In SMEs, it is even more problematic as they are not disclosing such a level of information as large companies do. For this reason, questionnaire survey was chosen as the most feasible method of collecting empirical data. For sure, surveys have its limitations, such as non-response, insufficient knowledge of the studied subject by respondents, clarity of questions, cultural differences of respondents in researched countries, truthfulness or relevance of the respondent's answers. However, despite these limitations, questionnaire survey has been considered as the most appropriate method of data collection for the purpose of this study.

3.1 Questionnaire

Questionnaire consisted of 47 questions divided into four main sections. Section A – General (subject identification, questions 1- 5), section B – Innovation (questions 6 – 21), section C – CSR (questions 22 – 44) and section D – Enterprise maturity (questions 45 - 47). Section B, C and D (all questions besides subject identification questions) were measured by Likert scale with five points, namely: 1 strongly disagree, 2 disagree, 3 neutral, 4 agree, 5 strongly agree.

Questionnaire attempts to cover all important topics on innovation, CSR and enterprise maturity so that the collected data are able to provide clear and structured input that can be further statistically evaluated.

3.2 Sample selection and data collection

Validity of the questionnaire was tested in a pilot study on a sample of 30 respondents (randomly selected from all three countries) that were excluded from the final sample. After the initial quality test of the questionnaire, only minor changes were done.

Questionnaire was distributed to the managers of randomly selected SMEs in three selected CEE countries – Austria, Czech Republic and Slovakia. Final sample consisted of 607 responses (n=607).

Table 2 Structure of respondents (n=607)

Country	Small enterprises (10-49 employees)	Percentage (%)	Medium enterprises (50-249 employees)	Percentage (%)	Sample size/country
Austria	143	70.79	59	29.21	202
Czech Republic	140	69.31	62	30.69	202
Slovakia	145	71.43	58	28.57	203
Total	428	70.51	179	29.49	607

Source: author's own

Responses were collected during the six months period between January and June 2019. Survey has been targeted at small to medium enterprises. Due to insufficient complexity of CSR activities necessary for the purposes of this research, micro enterprises with 0 to 9 employees were excluded.

As for the structure of respondents in terms of industry, nearly all industries were covered (based on NACE coding), however, vast majority came from the manufacturing field, wholesale and retail, trade; repair of motor vehicles and motorcycles and information and communication industries.

Table 3 Structure of respondents - industry

Industry	Percentage of respondents AT	Percentage of respondents CZ	Percentage of respondents SK
Manufacturing	22.8%	22.3%	25.1%
Wholesale and retail trade; repair of motor vehicles and motorcycles	20.3%	20.8%	24.1%
Information and communication	12.9%	11.4%	13.3%

Source: Gáborová, 2020

3.3 Statistical Analysis of empirical data

In order to statistically evaluate empirical data structural equation modelling (SEM) was used. This technique was chosen as a method of analysis of structural relationships between pre-set variables and constructs. It offers certain level of flexibility that was necessary for the purposes of this article – to test the suggested model (Hooper, et al. 2008; Kline, 2005).

Statistical analysis of collected empirical data from three countries of CEE region was processed in R software environment.

4 Results and Discussion

In order to validate three stated hypotheses, structural model was created and evaluated. Structural model was built based on the questionnaire, specifically on questions from sections B, C and D, as section A primarily serves for subject identification. The same model is used for statistical evaluation of empirical data in all three researched countries – Austria (AT), Czech Republic (CZ) and Slovakia (SK).

Model consists of three main constructs: innovation-oriented CSR, proactive innovation and innovation management.

Four items were excluded from the model (three from the first construct, one from the second construct) due to low loading values. Those were specifically items – Q12 (innovation culture tolerating failure), Q33 (CSR activities mitigating impact of business activities on local community), Q37 (CSR activities mitigating impact of business activities on the environment) and Q42 (predefined metrics usage). These items showed very low loading values (Q12: 0.539, Q33: 0.434, Q37: 0.385, Q42: 0.396). Item Q44 (anticorruption policies) was excluded as correlation between variables Q44 and Q43 (internal code of conduct) was nearly 1.0.

In the first step, quality of model fit has been evaluated. Chi-square/degrees of freedom with values less than 2 (Tabachnick and Fidell, 2007) show good fit, Comparative Fit Index CFI and Tucker-Lewis Index TLI greater than 0.95 demonstrate very good fit (Hu and Bentler, 1999). CFI index is used by many authors in structural equation modelling as it is affected by sample size the least (Fan et al., 1999; Hooper et al. 2008). RMSEA has values lower than 0.05 which supports the validity of the created model. Cut-off value for considering a good fit is set at 0.06 (Hu and Bentler, 1999). To be able to state a good fit of the model SRMR should be lower than 0.08 (Kline, 2005). It can be stated that the model is good fitting and consistent with the data – conditions as described above were met. Table 4 consists of data recommended by Kline (2005).

Table 4 – Quality of model fit

Country	AT	CZ	SK
Chi-square/ Degrees of freedom	1.493	1.277	1.580
Comparative Fit Index (CFI)	0.996	0.998	0.984
Tucker-Lewis Index (TLI)	0.995	0.998	0.984
RMSEA	0.050	0.037	0.054
90% confidence interval for RMSEA - lower	0.043	0.029	0.047
90% confidence interval for RMSEA - upper	0.056	0.045	0.060
Size of confidence interval for RMSEA	0.013	0.016	0.013
P value (H0: RMSEA<=0.50)	0.542	0.998	0.174
SRMR	0.034	0.028	0.052

Source: author’s own – based on empirical research

Validation of the intensity of influence of an item (question of the questionnaire) on the construct was performed as the next step. As it can be seen from table 5, all values are > 0.7 (recommended value by Hooper et. al. 2008), which is a minimum required absolute value so that the influence of an item on a construct can be considered as positive and valid.

Table 5 Intensity of the influence of items on constructs

Construct	Item	Loading		
		AT	CZ	SK
Innovation-oriented CSR	Q19 Process innovation	0.950	0.935	0.853
	Q20 Value associated with process innovation	0.938	0.937	0.862
	Q21 Marketing innovation	0.866	0.844	0.566
	Q22 Sustainability	0.958	0.970	0.920
	Q23 Transparency of supply chain	0.926	0.869	0.820
	Q24 Transparency of procurement process	0.944	0.893	0.884
	Q25 Effectivity of risk management	0.812	0.907	0.702
	Q26 Impact on local community	0.976	0.943	0.796
	Q27 Employee satisfaction and loyalty	0.966	0.960	0.901
	Q28 Customer satisfaction and loyalty	0.937	0.949	0.933
	Q29 Adherence to health and safety regulations	0.924	0.931	0.859
	Q30 Open and responsible	0.971	0.944	0.910

Proactive innovation	communications				
	Q31 Talent management	0.909	0.921	0.819	
	Q32 Diverse workforce	0.930	0.939	0.678	
	Q34 Environmental impacts of products/services	0.950	0.959	0.866	
	Q35 Adherence to environmental regulations	0.904	0.908	0.852	
	Q36 Environmental impact of innovation activity	0.927	0.967	0.911	
	Q38 Integration of sustainable practices into strategy	0.927	0.960	0.884	
	Q39 CSR as part of the organizational culture	0.906	0.949	0.901	
	Q40 Mission, vision, values	0.939	0.944	0.906	
	Q41 CSR as part of organizational strategy	0.902	0.939	0.918	
	Q43 Internal code of conduct	0.882	0.915	0.583	
	Q45 Business model	0.919	0.930	0.905	
	Q46 Profitability	0.974	0.962	0.860	
	Q47 Business strategy	0.959	0.950	0.889	
	Innovation management	Q6 Business model innovation	0.862	0.856	0.705
		Q7 Frequency of business model innovation	0.835	0.842	0.762
		Q11 Involvement of top management on innovation	0.932	0.911	0.803
		Q13 Introduction of new products	0.973	0.960	0.902
		Q14 Significance of new products introduction	0.922	0.971	0.939
		Q15 Increase in sales	0.996	0.964	0.900
Q16 R&D expenditure		0.867	0.872	0.845	
Q17 R&D investments vs. revenue		0.842	0.863	0.801	
Q18 Innovation with respect to society and environment		0.978	0.954	0.950	
Q10 Idea management		0.845	0.933	0.789	
Q8 Open innovation	0.898	0.927	0.950		
Q9 Business collaboration	0.993	0.875	0.645		

*Values of all loadings are statistically significant (p-values of test statistics are 0.000) at the significance level alpha = 0.05
Source: author’s own – based on empirical research

Those loading values that are closest to 1 can be considered as the highest. All loading values in the model used in this article are positive which means they significantly impact the corresponding constructs. If negative values would also emerge, absolute value of loading would be taken into consideration. In this study that was not the case.

Overall, it can be stated that the results are considerably homogenous, especially for Austria and Czech Republic. Slovakia has slightly lower loading values in general but there is no significant deviation in the pattern what has been crucial for the purposes of this research.

When taking closer look at the loading values of the first construct, innovation-oriented CSR, the highest values, meaning the strongest influence of an item on the construct can be seen in the area of process innovation and in the added value associated with the process innovation (Q19, Q20), sustainability (Q22), impact on local community (Q26), employee and customer satisfaction and loyalty (Q27, Q28), open and responsible communication (Q30), profitability (Q46) and business strategy (Q47). High, and interestingly homogenous loading values can also be seen in the area of CSR being part of the organizational culture (Q39), mission, vision, values (Q40), CSR as part of the organizational strategy (Q41) and the business model (Q45).

On the other hand, lower values can be seen in all tested countries in the area of marketing innovation (Q21), risk management (Q25) and internal code of conduct (Q43). Those are seen based on the results of the statistical analysis as marginal activities that SMEs in the tested CEE region do not consider to be crucial for their business operations and results.

When taking closer look at the second construct – proactive innovation, involvement of top management on innovation (Q11), introduction of new products and its significance (Q13, Q14), increase in sales (Q15) show the highest level of intensity of influence. On the other hand, R&D expenditure and its impact on revenue (Q16-17) show lower level of intensity. The answer to this could be the third construct – innovation management, where it can be seen that SMEs put the highest emphasis on open innovation as innovating via open innovation rather than own investments into R&D is more flexible, faster and more cost efficient. What is very interesting, is the gradual drop of influence of the item Q9 – business collaboration. The highest intensity of influence of this item on the third construct can be seen in Austria (0.993). In Czech Republic, it is slightly lower (0.875) but can still be considered as significant. However, loading value of this item in Slovakia fell down below the cut-off value 0.7, it is only 0.645. This could be explained by the maturity of the markets itself and still prevailing competitive rather than collaborative way of doing business in the post communistic countries (Czech Republic and Slovakia). Proving the significance and validity of these relationships leads to a conclusion that the areas of innovation and CSR are two strongly interconnected fields, especially in SMEs where the single business aspects have to be more in line with each other and the structure as such is very fragile. Especially, at the times of economic crisis SMEs can be more vulnerable (Kolasa et al. 2010; Ferrando et al. 2014), however, there are certain studies that show contradictory results and see the SMEs as the ones who can possibly grow and move the economy (Moscarini, Postel-Vinay 2012). Time will show how the upcoming crisis will affect SMEs and if their importance in the economy proves to be crucial. Nevertheless, innovation and CSR will remain crucial topics and inevitable core competencies for SMEs to remain competitive. In the next step of the statistical analysis of empirical data, reliability analysis confirmed the homogeneity of the constructs (see table 6).

Table 6 Reliability analysis

Factor	Items	AT	CZ	SK
Innovation oriented CSR		Reliability of the factor (Cronbach's alpha for the construct 0.99)	Reliability of the factor (Cronbach's alpha for the construct 0.99)	Reliability of the factor (Cronbach's alpha for the construct 0.99)
	Q19	0.99	0.99	0.97
	Q20	0.99	0.99	0.97
	Q21	0.99	0.99	0.97
	Q22	0.99	0.99	0.97
	Q23	0.99	0.99	0.97
	Q24	0.99	0.99	0.97
	Q25	0.99	0.99	0.97
	Q26	0.99	0.99	0.97
	Q27	0.99	0.99	0.97
	Q28	0.99	0.99	0.97
	Q29	0.99	0.99	0.97
	Q30	0.99	0.99	0.97
	Q31	0.99	0.99	0.97
	Q32	0.99	0.99	0.97
	Q34	0.99	0.99	0.97
	Q35	0.99	0.99	0.97
	Q36	0.99	0.99	0.97
	Q38	0.99	0.99	0.97
	Q39	0.99	0.99	0.97
Q40	0.99	0.99	0.97	
Q41	0.99	0.99	0.97	
Q43	0.99	0.99	0.97	
Q45	0.99	0.99	0.97	
Q46	0.99	0.99	0.97	
Q47	0.99	0.99	0.97	
Proactive innovation		Reliability of the factor (Cronbach's alpha for the construct 0.97)	Reliability of the factor (Cronbach's alpha for the construct 0.97)	Reliability of the factor (Cronbach's alpha for the construct 0.94)
	Q6	0.96	0.97	0.94
	Q7	0.96	0.97	0.94
	Q11	0.96	0.97	0.94
	Q13	0.96	0.96	0.94
	Q14	0.96	0.96	0.93
	Q15	0.96	0.96	0.93
	Q16	0.96	0.97	0.94
	Q17	0.96	0.97	0.94
	Q18	0.96	0.96	0.93
Innovation management		Reliability of the factor (Cronbach's alpha for the construct 0.91)	Reliability of the factor (Cronbach's alpha for the construct 0.91)	Reliability of the factor (Cronbach's alpha for the construct 0.81)
	Q10	0.89	0.89	0.69
	Q8	0.87	0.84	0.74
	Q9	0.84	0.90	0.78

Source: author's own – based on empirical research

Cronbach's alpha for each item is smaller than Cronbach's alpha for the construct. To make the model valid, values of Cronbach's alpha for each item has to be lower than values of Cronbach's alpha for the corresponding construct. If this condition wouldn't be met, item would have to be excluded so that the functionality of the model is reached.

Table 7 Reliability – Cronbach's Alpha

Construct	AT	CZ	SK
Innovation oriented CSR	0.99	0.99	0.99
Proactive innovation	0.97	0.97	0.94
Innovation management	0.91	0.91	0.81

Source: author's own – based on empirical research

Values of the constructs are higher than 0.9 besides innovation management construct for Slovakia (0.81 – see table 7). These values of Cronbach's alpha can be considered as high what proves the reliability of the model.

AVE is the average of square roots of loadings of items within the factor. Values of AVE should be higher than 0.5. As it can be seen from table 8 – condition was met. Each AVE value for all three researched countries have values higher than 0.5.

Table 8 Convergent validity AVE

Construct	AT	CZ	SK
Innovation oriented CSR	0.8622	0.8713	0.7136
Proactive innovation	0.8351	0.8312	0.7206
Innovation management	0.8357	0.8320	0.6473

Source: author's own – based on empirical research

Correlation among constructs defined in the model – Innovation oriented CSR, Proactive innovation and Innovation management are high (see table 9) and significant at the level of significance alpha 0.05 (p-values 0.000).

Table 9 Correlation coefficients

Country	Correlation		
	AT	CZ	SK
Innovation oriented CSR			
Proactive innovation	0.949	0.977	0.912
Innovation management	0.899	0.937	0.862
Proactive innovation			
Innovation management	0.942	0.949	0.903

Source: author's own – based on empirical research

These correlations demonstrate the valid and significant dependence of the two areas – innovation and CSR and further confirm the assumption stated in this study that innovative SMEs can be highly aware and engaged in CSR without explicitly concentrating its business resources on it and implementing some kind of structured approach as it can be seen in large companies. Thus, *H1: Innovative SMEs can be highly socially responsible despite applying unstructured approach to CSR* can be considered as supported.

Second hypothesis, *H2: Correlation between innovativeness of SME and conducting CSR activities is low* can also be considered as supported as items Q33 and Q37 measuring significance of regular conducting of CSR activities with the purpose of mitigating negative impacts of business activities on either community or environment and pre-defined metrics usage Q42 were excluded from the model due to low loading values (Q33: 0.434, Q37: 0.385, Q42: 0.396). Such low values mean there is significant impact of these items on the corresponding construct of the model.

Similar reasoning was used to confirm the third hypothesis, *H3: There is no need for innovative SME to apply specific CSR policies in order to have high CSR engagement*. Item 44 (Q44)

was excluded from the model as correlation between variables Q44 and Q43 was nearly 1.0. Item Q44 anti-corruption policies and item Q43 internal code of conduct have very high correlation – meaning topic of anti-corruption is already covered by internal code of conduct. Having a closer look backwards on the first construct (Q43), loading values for this item are among the lowest. For Austria, it has one of the three lowest values, for Slovakia it even got below cut-off value of 0.7 (only 0.583). In the Czech Republic, loading value could be considered high enough (0.915) but it is still the 5th lowest out of 25 items in the first construct. For the abovementioned reasons, H3 can be also considered as confirmed.

Table 10 – Summary of results of hypothesis testing

Hypothesis	Result	
H1	Supported	High correlation coefficients among all three constructs of the model.
H2	Supported	Items measuring explicit CSR activities were excluded due to low loading values.
H3	Supported	Item measuring implementation of special CSR policy and implementation of internal code of conduct were proved to be less significant.

Source: author's own

5 Conclusion

SMEs have a unique status in the economy of any state. In the studied CEE region (Austria, Czech Republic and Slovakia) they represent more than 99% of all existing enterprises, create more than 80% of jobs and are substantial contributors to GDP. However, their nature itself is slightly different than those of large companies. They are more flexible but also more fragile to turbulences on the market so their approach and way of doing business also has to be different. Whatever works for large companies doesn't have to work for SMEs. They need easy, straightforward and effective solutions for all the areas of the business. CSR is not an exception. Setup of complicated models, implementation and development of pre-defined metrics, vast reporting and in general, structured approach to CSR might be an asset but is very costly and time consuming, thus, can be considered as ineffective for SMEs who usually have neither the resources nor the time to apply it. However, this doesn't mean SMEs cannot be comparably responsible business entities. Consequently, route of SMEs to sustainable and responsible business doesn't lead via complicated models but through innovation.

In order to stay competitive and survive on today's demanding, turbulent and ever changing markets, SMEs have to be innovative. There is no other choice. Innovation can only work if the equation $\text{Innovation} = \text{Idea} + \text{Realization}$ (Schrage, 2004) is kept. Only such a product or service can be considered an innovation that market (customers and stakeholders) will accept. The pressure from customers and stakeholder on CSR is increasing. The result still remains important but the way of achieving it is not left behind (Guenster et al., 2011; El Ghoul et al., 2017; Kim, Krishna, Danesh, 2019).

Innovation and CSR are two interconnected variables that cannot exist one without another. As shown by statistical analysis of the empirical data in this study, innovative SMEs don't need to explicitly concentrate on CSR – its specific activities, policies, metrics, reporting or code of conducts. The answer for SMEs is in the business strategy, innovation and sustainable business model. This way, CSR can be strategic in its core and what is the most important, also proactive not just reactive. In the upcoming potentially deepest economic crisis in human history, this will be even more true. Innovation will be the key for survival more than ever before. Implementation of CSR via innovation and innovating via CSR might bring SMEs who are very fragile in its nature more resilience, more potential business opportunities, offer more flexibility to industries and lead to a more collaborative business environment.

Literature:

- Anser, K. M., Zhang, Z., Kanwal, L. (2017). Moderating effect of innovation on corporate social responsibility and firm performance in realm of sustainable development. *Corporate Social Responsibility and Environmental Management*, 25(5), 799-806. doi: 10.1002/csr.1495
- Arend, R. J. (2014): Social and Environmental Performance at SMEs: Considering Motivations, Capabilities, and Instrumentalism. *Journal of Business Ethics*, 125(4), 541-561. doi: 10.1007/s10551-013-1934-5
- Arlow, P., Gannon, M. (1982): Social Responsiveness, Corporate Structure, and Economic Performance. *Academy of Management*, 7(2), 235 – 241.
- Baden, D. A., Harwood, I. A., Woodward, D. G. (2009): The effect of buyer pressure on suppliers in SMEs to demonstrate CSR practices: An added incentive or counter-productive? *European Management Journal*, 27(6), 429-441.
- Barnard, C. (1958): Elementary Conditions of Business Morals. *California Management Review*, 1(1), 1-13.
- Baumgartner, R. J., Ebner, D. (2010): Corporate sustainability strategies: sustainability profiles and maturity levels. *Sustainable Development*, 18(2), s. 76-89.
- Bocquet, R., Le Bas, CH., Mothe, C., Poussing, N. (2017): CSR, Innovation, and Firm Performance in Sluggish Growth Contexts: A Firm-Level Empirical Analysis. *Journal of Business Ethics*, 146(1), 241-254.
- Carroll, A.B. (1999): Corporate Social Responsibility: Evolution of a Definitional Construct. *Business & Society*, 38(3), 268-295.
- Christensen, L. J., Mackey, A., Whetten, D. (2014): Taking Responsibility for Corporate Social Responsibility: The Role of Leaders in Creating, Implementing, Sustaining, or Avoiding Socially Responsible Firm Behaviors. *Academy of Management Perspectives*, 28(2), 164–178.
- Coombs, W. T., Holladay, S. (2015): CSR as crisis risk: Expanding how we conceptualize the relationship. *Corporate Communication*, 20(2), 144-166.
- Davis, K., Blomstrom, R. L. (1975): *Business and society: Environment and responsibility* (3rd ed.). New York: McGraw-Hill. ISBN 0070155240
- Dawkins, J., Lewis, S. (2003): CSR in stakeholder expectations and their implication for company strategy. *Journal of Business Ethics*, 44(2), 185-193.
- Dragulescu, A., Cole Arendt, C. (2018): *xlsx: Read, Write, Format Excel 2007 and Excel 97/2000/XP/2003 Files. R package version 0.6.1.* <<https://CRAN.R-project.org/package=xlsx>>.
- El Ghoul, S., Guedhami, O., Kim, Y. (2017): Country-level institutions, firm value, and the role of corporate social responsibility initiatives. *Journal of International Business Studies*, 48, 360-385.
- Elkington, J. (1994): Towards the sustainable corporation – win-win-win business strategies for sustainable development. *California Management Review*, 36(2), 90-100.
- EUROPEAN COMMISSION (2017): Non-financial reporting. <https://ec.europa.eu/info/business-economy-euro/company-reporting-and-auditing/company-reporting/non-financial-reporting_en>.
- Fan, X., Thompson, B., Wang, L. (1999): Effects of Sample Size, Estimation Methods, and Model Specification on Structural Equation Modeling Fit Indexes. *Structural Equation Modeling*, 6(1), 56-83.
- Ferrando, A., Marchica, M.T., Mura, R. (2014): Financial Flexibility Across the Euro Area and the UK (January 20, 2014). ECB Working Paper No. 1630. <https://ssrn.com/abs/tract=2381833>
- Gáborová, I. (2020): Influence of Innovation Activities on CSR of SMEs in Selected CEE Countries. *AD ALTA: Journal of Interdisciplinary Research*, 10(1), 70-81.
- Gelbmann, U. (2010): Establishing Strategic CSR in SMEs: an Austrian CSR Quality Seal to Substantiate the Strategic CSR Performance. *Sustainable Development*, 18(3), 90-98.
- Gossling, T. (2011): *Corporate Social Responsibility and Business Performance. Theories and Evidence about Organizational Responsibility*. London: Edward Elgar Publishing. ISBN 978-0857-9323-89.
- Guenster, N., Baurer, R., Derwall, J., Koedijk, K. (2005): The Economic Value of Corporate Eco-Efficiency. *European Financial Management*, 17(4), 679-704.

23. Heal, G. (2005): Corporate Social Responsibility: An Economic and Financial Framework. The Geneva Papers on Risk and Insurance - Issues and Practice, 30(3), 387-409.
23. Hooper, D., Coughlan, J., Mullen, M. R. (2008): Structural Equation Modelling: Guidelines for Determining Model Fit. *Electronic Journal of Business Research Methods*, 6(1), 53-60.
24. Hu, L., Bentler, P. M. (1999): Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling: A Multidisciplinary Journal*, 6(1), 1-55.
25. Hwang, J. Y., Kandampully, J. (2015): Embracing CSR in pro-social relationship marketing program: understanding driving forces of positive consumer responses. *Journal of Services Marketing*, 29(5), 344-353.
26. Jenkins, H. (2004): A critique of conventional CSR theory: an SME perspective. *Journal of General Management*, 29(4), 37-57.
27. Kim, S., Kirshna, A., Danesh, G. (2019): Economics or ethics? Exploring the role of CSR expectations in explaining consumers' perceptions, motivations, and active communication behaviors about corporate misconduct. *Public Relations Review*, 45(1), 76-87.
28. Kline, R. B. (2005): Principles and Practice of Structural Equation Modeling (2nd Edition ed.). New York: The Guilford Press. ISBN 978-1-57230-690-5.
29. Kolasa, M., Rubaszek, M., Tagliani, D. (2010): Firms in the great global recession: The role of foreign ownership and financial dependence. *Emerging Markets Review*, 11(4), 341-357.
30. Lenz, I., Wetzels, H. A., Hammerschmidt, M. (2017): Can Doing Good Lead to Doing Poorly? Firm Value Implications of CSR in the Face of CSI. *Journal of the Academy of Marketing Science*, 45(4), 677-697.
31. Lev, B., Petrovits, C., Radhakrishnan, S. (2009): Is doing good good for you? How corporate charitable contributions enhance revenue growth. *Strategic Management Journal*, 31(2), 182-200.
32. Lepoutre, J., Heene, A. (2006): Investigating the impact of firm size on small business social responsibility: a critical review. *Journal of Business Ethics*, 67(3), 257-273.
33. Lu, J., Ren, L., Lin, W. et al. (2019): Policies to Promote Corporate Social Responsibility (CSR) and Assessment of CSR Impacts. *Business Administration and Management*, 22(1), 82-98.
34. Margolis, J. D., Walsh, J. P. (2003): Misery loves companies: Rethinking social initiatives by business. *Administrative Science Quarterly*, 48(2), 268-305.
35. McWilliams, A., Siegel, D. (2000): Corporate social responsibility and financial performance: correlation or misspecification? *Strategic Management Journal*, 21(5), 603-609.
36. Middtun, A. (2009): Strategic CSR Innovation: Serving Societal and Individual Needs. Research report 2/2009. BI Norwegian School of Management. Department of Innovation and Organizational Management. <https://biopen.bi.no/bitstream/handle/11250/94093/2009-02-middtun.pdf?sequence=1&isAllowed=y>.
37. Meyer, M. (2015): Positive Business: Doing Good and Doing Well. *Business Ethics. A European Review*, 24(22), s. 175-197.
38. Moscarini, G., Postel-Vinay, F. (2012): The Contribution of Large and Small Employers to Job Creation in Times of High and Low Unemployment. *American Economic Review*, 102(6), 2509-2539.
39. Moneva, J. M., Hernandez-Pajares, J. (2018): Corporate social responsibility performance and sustainability reporting in SMEs: an analysis of owner-managers' perceptions. *International Journal of Sustainable Economy*, 10(4), 405-420.
40. Morsing, M., Perrini, F. (2009): CSR in SMEs: do SMEs matter for the CSR agenda? *Business Ethics: A European Review*, 18(1), 1-6.
41. Nejat, M., Amran, A. (2009): Corporate social responsibility and SMEs: exploratory study on motivations from a Malaysian perspective. *Business Strategy Series*, 10(5), 259-265.
42. Nidumolu, R., Prahlad, C., Rangaswami, M. (2009): Why Sustainability is Now the Key Driver of Innovation. *Harvard Business Review*, 87(2), 57-64.
43. Perrini, F. (2006): SMEs and CSR theory: evidence and implications from an Italian perspective, *Journal of Business Ethics*, 67(3), 305-316.
44. Porter, M., Kramer, M. (2011): Creating Shared Value. *Harvard Business Review*, 89(1-2), 62-77.
45. Posnikoff, J. F. (1997): Disinvestment from South Africa: They did well by doing good. *Contemporary Economic Policy*, 15(1), 76-86.
46. Price, J., Sun, W. (2017): Doing good and doing bad: The impact of corporate social responsibility and irresponsibility on firm performance. *Journal of Business Research*, 8(C), 82-97.
47. Ramesh, K., Saha, R., Goswami, S. et al. (2019): Consumer's response to CSR activities: Mediating role of brand image and brand attitude. *Corporate Social Responsibility and Environmental Management*, 26(2), 377-387.
48. R CORE TEAM (2019): R: A language and environment for statistical computing. R Foundation for Statistical Computing, Vienna, Austria. <<https://www.R-project.org/>>.
49. Revelle, W. (2018): psych: Procedures for Personality and Psychological Research, Northwestern University, Evanston, Illinois, USA, <https://CRAN.R-project.org/package=psych> Version = 1.8.12.
50. Rexhepi, G., Kustishi, S., BEXHETI, G. (2013): Corporate Social Responsibility (CSR) and Innovation – The drivers of business growth? Second International Conference on Leadership, Technology and Innovation Management 2012, 75, 532-541.
51. Rosseel, Y. (2012): lavaan: An R Package for Structural Equation Modeling. *Journal of Statistical Software*, 48, č. 2, s. 1-36. <<http://www.jstatsoft.org/v48/i02/>>.
52. Ruggiero, P., Cupertino, S. (2018): CSR Strategic Approach, Financial Resources and Corporate Social Performance: The Mediating Effect of Innovation. *Sustainability*, 10(10), 3611.
53. Santos, M. (2011): CSR in SMEs: strategies, practices, motivations and obstacles. *Social Responsibility Journal*, 7(3), 490-508.
54. Schrage, M. (2004): Michael Schrage on Innovation. *Magazine Ubiquity*. <<https://ubiquity.acm.org/article.cfm?id=1040565>>.
55. Surroca, J., Tribo, J. A., Waddock, S. (2010): Corporate responsibility and financial performance: The role of intangible resources. *Strategic Management Journal*, 31(5), 463-490.
56. Tabachnick, B.G., Fidell, L.S. (2007): Using Multivariate Statistics (5th ed.). New York: Allyn and Bacon. ISBN: 978-0-205-45938-4
57. Tilley, F. (2002): Small firm environmental ethics: how deep do they go? *Business Ethics: A European Review*, 9(1), 31-41.
58. Toeh, S. H., Welch, I., Wazzan, C. P. (1999): The effect of socially activist investment policies on the financial markets: Evidence from the South African boycott. *Journal of Business*, 72(1), 35-89.
59. Tur-Porcar, A., Roig-Tierno, N., Llorca Mestre, A. (2018): Factors affecting entrepreneurship and business sustainability. *Sustainability* 2018, 10(2), 452.
60. Varadarajan, R., Kaul, R. (2017): Doing Well by Doing Good Innovations: Alleviation of Social Problems in Emerging Markets through Corporate Social Innovations. *Journal of Business Research*, 86(1), 225-233.
61. Visser, W. (2010): The age of responsibility CSR 2.0 and the new DNA of business. *Journal of Business Systems, Governance and Ethics*, 5(3), 7-22.
62. Voegtlin, C., Greenwood, M. (2016): Corporate social responsibility and human resource management: A systematic review and conceptual analysis. *Human Resource Management Review*, 26(3), 181-197.
63. Wang, H., Tong, L., Takeuchi, R., George, G. (2016): Corporate Social Responsibility: An Overview and New Research Directions. *Academy of Management Journal*, 59(2), 534-544.
64. Wright, P., Ferris, S. (1997): Agency conflict and corporate strategy: The effect of divestment on corporate value. *Strategic Management Journal*, 18(1), 77-83.
65. Yoo, D., Lee, J. (2018): The Effects of Corporate Social Responsibility (CSR) Fit and CSR Consistency on Company Evaluation: The Role of CSR Support. *Sustainability* 2018, 10(8), 2956.
66. Zadek, S. (2004): The Path to Corporate Responsibility. *Harvard Business Review*, 82(12), 125-132.

Primary Paper Section: A

Secondary Paper Section: AE, AH

PRACTICES FOR ENSURING RELIGIOUS SECURITY: PSYCHOLOGICAL AND LEGAL ASPECTS

^aYULIA VIKTOROVNA GAVRILOVA, ^bALEXEY P. ALBOV, ^cZHANNA ROBERTOVNA GARDANOVA, ^dMARINA ANATOLEVNA ZHIRONKINA

^a*Plekhanov Russian University of Economics, 36 Stremmyanny Lane, Moscow, 117997, Russian Federation*

^b*Russian Customs Academy, 4 Komsomolsky Ave., Lyubertsy, Moscow region, 140015, Russian Federation*

^c*Pirogov Russian National Research Medical University, 1 Ostrovityanova Str., Moscow, 117997, Russian Federation*

^d*Plekhanov Russian University of Economics, 36 Stremmyanny Lane, Moscow, 117997, Russian Federation*
e-mail: julia.voitsuk@yandex.ru

Abstract: Today, it is important to understand that normative conflicts are at the root of the destruction of the existing system of religious security. The essential features of normative conflicts lie in the contradictions between parts of a separate system of norms and values, or between normative value systems of a different nature, but included in one dominant culture. The authors determine that to ensure religious security, it is necessary to minimize the destructive effects of normative conflicts through the removal of contradictions. The study proposes a classification of practices that make it possible to remove the severity of normative conflicts, including in the sphere of the "secular" – "religious" segments. Based on the principles of the anthropological approach, conflict functionalism, and marginal anthropology, the authors identify a system of authoritarian and humanistic practices of religious security. The authoritarian type of practice includes stigmatization and legal protection of the feelings of believers. Humanistic practices should include tolerance, nonviolence, and calls for a peaceful resolution of conflicts. The classification of religious security practices is based on the interpretation of the concept of norm represented by two paradigms: classical and nonclassical. The authors conclude that all types of religious security practices are actively used in the modern world.

Keywords: mental health, aggression, empathy, authoritarian practices, humanistic practices, religions, religious consciousness, normative conflicts, rule of law.

1 Introduction

Modern society is characterized by the presence of a large number of heterogeneous communities and social groups with their systems of values, worldview guidelines, and norms. Within the framework of a particular society, such a variety of normative systems aggravates the contradictions between individuals and social groups, leading to confrontations, clashes, and even wars based on the inconsistency of group cultural norms. Particularly irreconcilable positions in such conflicts are held by adherents of systems of norms and values of a religious and secular nature, which actualizes the task of ensuring religious security as one of the aspects of national security.

The scientific discourse is characterized by fragmented ideas about religious security. The provision of religious security is considered by researchers mainly in the aspects of countering political and religious extremism and terrorism as types of deviant behavior [1], removal of interfaith tensions [2], functioning of religious syncretism in cross-border regions [3], prevention of the destructive influence of nontraditional religious movements [4] and discrimination, as well as restrictions on religious freedom [5]. Moreover, in many studies, there is a bias towards the analysis of measuring and predicting the spread of Islam [6, 7] and antireligious legislation as a mechanism for ensuring religious security [6, 8].

The problem of ensuring religious security concerns all countries. At present, the leading practices for ensuring religious security are, on the one hand, civic, patriotic, spiritual, and moral education as a mechanism of value identification and, on the other, social control of deviations from norms, including legal authorization. At the same time, such an aspect of religious security as minimizing the negative effects of normative conflicts, which are based on the contradictions of moral and aesthetic values and legal norms, is on the periphery of researchers' attention. Traditionally, the safety of society was associated with the conscious and purposeful observance of the majority of generally accepted norms, as well as predictability of the behavior of the majority [9, p. 186]. However, in the

conditions of the "mobility" of norms and renewal of the normative order, the concept of security, including religious, requires its rethinking, first, in terms of studying the system of religious security practices.

2 Methods

The theoretical and methodological basis of the study is the anthropopractic approach developed in the works of J.R. Wikse, B. Root, T. Burrow, and D. Bohm [10-13]. This approach allows considering social and religious security not only as a concept, but as a practice. Based on the principles of conflict functionalism by L.F. Coser [14] and the marginal anthropology of J.M. Cooper and M.A. Czaplicka [15-17], we believe that the problem of religious security needs additional philosophical research, taking into account the demarcation of the normal and abnormal and the assessment of functionality and dysfunctionality of normative conflicts.

By the practices of religious security, we mean the established (both at the level of trends and rare case) ways of creating conditions that ensure stability and preservation of the religious system within a certain paradigm in understanding the norm. From the position of antireductionism, it is proposed to abandon the reduction of marginality and relativity of norms to negative and destructive, the threat to security, and the practice of religious security to neutralize such threats.

The material for the analysis was provided by individual cases describing normative conflicts, which corresponds to the methodology of qualitative philosophical and conflictological research.

3 Results and Discussion

Normative conflicts lie at the root of the violation of religious security. They are the result of contradictions between different parts of a single normative system or between different normative value systems of one dominant culture. To remove contradictions and minimize conflict factors, various religious security practices are used. At present, in accordance with the existing paradigms of interpreting the concept of norm, opposite practices and religious security are being built.

The classical paradigm of understanding the norm (Aristotle, Thomas Aquinas, G. Hegel, etc.) corresponds to authoritarian practices of religious security, which include: stigmatization and legal protection of the feelings of believers. The analysis of these practices deserves special attention.

Stigmatization is a violation of the identification of religious groups, communities, or individuals, expressed in the public by "labeling" them, endowed with negative connotations in public discourse. Stigmatization is most commonly used in multiconfessional societies where there is one dominant religious system that is considered historically traditional for the given society. Recognizing the right to be able to adhere to any religion, representatives of the dominant religion "label" adherents of other religious cults and teachings. This is largely due to the fact that stigmatization was originally embedded in the normative value systems of religions, which recommend and encourage people to renounce infidels, publicize their unwanted apostate deeds, and label them as "apostate", "henchman of the devil", "antichrist". For example, in the books of the New Testament, the Bible says: "Whoever makes a practice of sinning is of the devil, for the devil has been sinning from the beginning" [18, pp. 181-182], "and every spirit that does not confess Jesus is not from God. This is the spirit of the antichrist" [18, p. 182]. Unfortunately, situations often arise in which religious groups or individual believers fall under stigmatization without any action/incentive. This is especially true of adherents of new religious movements and adherents of autochthonous

cults, who are often called pagans and idolaters. Practices of stigmatization have a negative impact on the mental health of believers, cause psychological problems, form personality complexes and the perception of “oneself” as an outcast, and contribute to the destruction of social groups.

Legal protection of the feelings of believers is a fairly widespread practice of ensuring religious security. The legislation governing the activities of religious organizations in society is an integral component of the legal and regulatory system of many secular states. The regulation of interactions between the secular and religious segments of society, as well as the extracult activities of religious organizations, is of particular importance, first of all, for polyconfessional societies, since it is designed to maintain the stability of the space for the coexistence of many confessions with their specific systems of norms and values. However, legislation is often on the side of the historically traditional religion for a particular region. This violates the constitutional principle of freedom of conscience and religion. Examples of this are laws on granting citizenship to immigrants of certain religions, state protection and state funding of religious buildings and structures of religion traditional for a particular country, while buildings and structures of other religions are not subject to state guardianship [19], legislation of several countries, providing for punishment for insulting the feelings of believers, which discriminates against atheists.

It should be noted that not only representatives of the atheistic worldview, but also adherents of new religious movements and cults, including those of a syncretic nature, suffer from this kind of legislation. For example, by decision of the Supreme Court of the Russian Federation in 2016, the activities of Jehovah’s Witnesses were banned, and the religious organization “Soiuz sotvortsev sviatoi Rusi” (Union of Cocreators of Holy Russia) and “Saentologicheskaja tserkov Moskvy” (The Church of Scientology of Moscow) were liquidated [5].

In general, authoritarian practices of religious security are characterized by the priority of national security over the security of the individual, the idea that some authority over the individual is the source of norms and the guarantor of their observance. Mechanisms of this kind to ensure religious security are based on traditional, conservative systems of norms and values. Their essence is itself conflictogenic, since it is based on the opposition “ours is good, and someone else’s is bad”.

The nonclassical paradigm in the understanding of the norm (S. Freud, F. Nietzsche, M. Foucault) leads to the emergence of humanistic practices of religious security: tolerance and a call for a peaceful resolution of conflicts.

The *essence* of the practice of tolerance lies in a tolerant/nonaggressive attitude towards the presence of a variety of forms of social behavior.

The practice of tolerance must be viewed in an individually psychological and socially oriented aspect. The line between these aspects is thin and rather arbitrary.

The individual psychological content of tolerance for otherness is characterized by the psychological sensations of individuals, arising based on mental processes and states of an individual. This is, first of all, the psychological depression of an individual due to feelings of pity, empathy, and a sense of involvement in the experiences of another person. Empathic experiences are based on natural prerequisites – the instinct of caring for others and the instinct of mutual assistance perform the most important functions of the development and preservation of society. N.D. Subbotina rightly notes: “society could not exist in the absence of qualities in people that are opposite to aggression and selfishness – altruism, empathy and instinctive concern for loved ones. These features, as well as aggression, have a natural prerequisite” [20, p. 58]. Therefore, minimization of the danger of normative conflicts in society is sometimes carried out due to the unconscious desire of individuals to protect another person

or at least not to harm them, which to a certain extent stabilizes society.

The individual psychological content of the practice of tolerance can, to a certain extent, explain the withdrawal from the conflict, the suppression of the conflict by representatives of different normative value systems: representatives of different religions or believers and nonbelievers.

The social level of the practice of tolerance is represented by religious tolerance, largely based on the moral and legal provision of religious security. Religious tolerance presupposes tolerant relationships between believers of different confessions, tolerant attitude towards representatives of other religions in situations of lack of contacts between believers of different religious traditions, recognition of their right to religious activities of a different nature. However, there is no talk of adopting the normative system of another religion. In contrast to the secular understanding of tolerance, which allows the acceptance of “alien” values and worldview guidelines in view of the relativity of any ideals and truths. Religious tolerance, as professor A.Iu. Grigorenko writes, “only means the absence of statements or actions that could be regarded as derogatory or offensive for representatives of another religious tradition and would be aimed at infringing on the rights and freedom of religion and worship (closing churches, banning missionary activities, etc.)” [21]. The important point is that religious tolerance has found its consolidation in legal norms (*Dignitatis humanae* (Declaration on Religious Freedom) 1965, *Declaration on the Elimination of All Forms of Intolerance and Discrimination Based on Religion or Belief* 1981, etc.).

The growth of aggression and hatred in society testifies to the need for calls for tolerance and prevention of conflicts that split society.

The practice of calling for a peaceful resolution of conflicts is currently being used quite actively. The call to end conflicts between warring parties and eliminate differences between different worldview systems, is an essential element of peacemaking service in traditional religions. In Christianity, the Bible indicates the need for peacemaking: “Blessed are the peacemakers, for they shall be called sons of God” [18, p. 89]. The very same facts of conflict are considered as sinful behavior. However, some researchers assess the normative conflicts in the world as constructive, signaling the problems of society [2, 22], while criticizing the widespread in society perceptions of protesters as traitors.

In general, the specificity of the humanistic practices of religious security lies in their nonviolent nature, the recognition of the well-being of the individual as the only criterion for a normative assessment.

4 Conclusion

In the 21st century, the world remains religious; moreover, the number of new religious movements is increasing and religious and esoteric teachings appear, aimed at personal, individualistic spirituality. This inevitably entails the formation of new normative-value systems of a specific nature, exacerbating the problem of opposition and rivalry between their adherents. In such conditions, the religious segment of society is increasingly drawn into a series of normative conflicts. Conflicts of this kind are cyclical (they subside and flare up again), characterized by a protracted nature, and difficult to resolve. To minimize normative conflicts in modern world practice, authoritarian and humanistic methods of ensuring religious security are used.

Practices of an authoritarian nature arise under the dominance of the classical paradigm of understanding the “norm”. They are characteristic of the authoritarian level of government (government bodies, religious clerks) and carriers of traditional religious consciousness. The implementation of this type of religious security practice is ambiguous and often leads to the aggravation of conflicts.

Humanistic practices of religious security arise in line with the nonclassical interpretation of the norm. Mostly, they are realized by the bearers of the religious consciousness of a “new type” with sufficiently “flexible boundaries” for interpreting the normativity of a particular system. The humanistic essence of the practice of religious safety lies in the proclamation of free thought, in respect for individuality in the choice of rules and regulations.

In general, authoritarian and humanistic practices describe radicalism and moderation in the process of ensuring religious security.

Literature:

1. Mkrtumova, I., Dosanova, A., Karabulatova, I., Nifontov, V. The use of communication technologies to oppose political-religious terrorism as an ethnosocial deviation in the contemporary information-digital society. *Central Asia and the Caucasus*. 2016; 17(2):54-61.
2. Zhukov, A.V. Religioznaia bezopasnost kak predmet nauchnogo diskursa v postsovetsoi Rossii [Religious Security as a Subject of Scientific Discourse in Post-Soviet Russia]. *Historical, Philosophical, Political and Law Sciences, Culturology and Study of Art. Issues of Theory and Practice*. 2017; 12(86):66-71 (in Russian).
3. Gavrilova, Y., Shchetkina, I., Liga, M., Gordeeva, N. Religious syncretism as a sociocultural factors of social security in cross-border regions. *Mental Health, Religion and Culture*. 2018; 21(3):231-245.
4. Salikhov, N.R., Mustaev, R.Sh., Misbakhov, A.A. Religioznaya bezopasnost. *Vestnik NCBZhD*. 2012; 3(13):31-36 (in Russian).
5. Samygin, S.I. Religioznaia bezopasnost obshchestva v kontekste obespecheniia religioznoi svobody i protivodeistviia religioznomu ekstremizmu [Religious Safety of the Society in Terms of Providing the Religious Freedom and Counter Religious Extremism]. *Gumanitarii iuga Rossii [Humanitarians of the South of Russia]*. 2017; 6(4):167-179. Available from: DOI: 10.23683/2227-8656.2017.4.16 (in Russian).
6. Beller, J., Kröger, C. Religiosity, religious fundamentalism, and perceived threat as predictors of Muslim support for extremist violence. *Psychology of Religion and Spirituality*. 2018; 10(4):345–355. Available from: DOI: 10.1037/rel0000138
7. Green, T.H.: *The fear of Islam: an introduction to Islamophobia in the West*. Minneapolis: Fortress Press, 2019. 363 p.
8. Heene, P.S., Klocek, J. Taming the Gods: How Religious Conflict Shapes State Repression. *Journal of Conflict Resolution*. 2019; 63(1):112-138. Available from: DOI: 10.1177/0022002717728104
9. Flier, A.Ia. Kultura kak faktor natsionalnoi bezopasnosti [Culture as a Factor of National Security]. *ONS [Social Sciences and Contemporary World]*. 1998; 3:181-187 (in Russian).
10. Burrow, T.: *The Social Basis of the Unconscious*. London: Kegan Paul, Trench, Trübner & Co., Ltd., 1927.
11. Bohm, D.: *The Deeper Structure of Thought*. Unpublished MS, 1988. p. 289.
12. Ruth, B.: *Patterns of Culture*. Boston: Houghton Mifflin, 1959. p. 10, 48.
13. Wikse, J.R. Practical anthropology: studying our social neurosis. Available from: http://towardsocialsanity.net/practical_anthropology.htm
14. Coser, L.F.: *The Functions of Social Conflict*. Glencoe, Illinois: The free press, 1956.
15. Cooper, J.M. The South American Marginal Cultures. In: *Proceedings of the VIII American Scientific Congress*, Vol. 2. Washington; 1942. p. 147-160.
16. Czaplicka, M.A.: *Aboriginal Siberia. A Study in Social Anthropology*. With a Preface by R.R. Marett. Elibron Classics, 2002. 430 p.
17. Czaplicka, M.A.: *The Turks of Central Asia in History and at the Present Day*. Wentworth Press, 2019. 244 p.
18. Bibliia. Knigi sviashchennogo pisaniiia Vetkhogo i Novogo Zaveta. Kanonicheskie [The Bible. Books of the Holy Scriptures of the Old and New Testaments. Canonical]. Moscow: Russian Bible Society, 2005. 1217 p. (in Russian).
19. Pew Research Center. *A closer look at changing restrictions on religion*. Available from: <https://www.pewforum.org/essay/a-closer-look-at-changing-restrictions-on-religion/>
20. Subbotina, N.D. Estestvennye i sotsialnye sostavliaiushchie empatii i altruizma [Natural and Social Constituents of Empathy and Altruism]. *Gumanitarnyi vektor [Humanitarian Vector]*. 2011; 2(26):58-66 (in Russian).
21. Grigorenko, A.Iu. Religiia i tolerantnost. Spetsifika religioznoi tolerantnosti [Religion and Tolerance. Specificity of Religious Tolerance]. *Electronic journal “RONO”*. 2014; 23. Available from: https://www.sites.google.com/a/shko.la/ejr_ono_1/vypuski-zurnala/vypusk-23-maj-2014/tema-nomera-no23-osnovy-religioznyh-kultur-i-svetskoj-etiki-kak-novyy-resurs-duhovno-nravstvennogo-razvitiia-i-vospitania-ucasihsa/religia-i-tolerantnost-specifika-religioznoj-tolerantnosti (in Russian).
22. Milstein, G., Manierre, A., Yali, A.M. Psychological care for persons of diverse religions: A collaborative continuum. *Professional Psychology: Research and Practice*. 2010; 41(5):371–381. Available from: DOI: 10.1037/A0021074.

Primary Paper Section: A

Secondary Paper Section: AA, AG, AN

EFFECTS OF QUANTITATIVE EASING ANNOUNCEMENTS ON EQUITIES: EU EVIDENCE

^aLEOS SAFAR, ^bJOZEF GLOVA, ^cALENA ANDREJOVSKA
^dJAKUB SOPKO

Technical University of Košice, Letná 9, 04001 Košice, Slovak republic

*email: ^aleos.safar@tuke.sk, ^bjozef.glova@tuke.sk,
^calena.andrejovska@tuke.sk, ^djakub.sopko@tuke.sk*

This research was supported by VEGA project No. 1/0430/19.

Abstract: In this paper we examine effects of the Quantitative easing (QE) related statements made by the European Central Bank (ECB) on major equity indices in the Europe (EU). We consider days, when announcements had been made, as events for the event-study. We approach this methodology with aim to calculate excess returns on particular announcement day for representative indices in the old continent. Admitting complexity of those statements, and difficulty to isolate effects linked only to QE related information, we analysed statements individually, to be able to extrapolate deviations more accurately. Results indicate positive excess returns (above average performance over previous 60 days) on indices in average following especially information linked to prolongation or expansion of existing QE programme.

Keywords: Quantitative easing, Quantitative tightening, Equity markets, Event-study.

1 Introduction

Once the crisis fully took place in 2007 and 2008, respectively, standard monetary policy instruments become inadequate, or performed scantily, which lead central banks to introduce non-standard measures in order to fulfil their mandate (for purposes of this research, we will be dealing only with high profile form of unconventional monetary policy (UMP) - so called quantitative easing or QE). Reason for this decision lies upon the fact that the QE is the most significant instrument among the other UMP's instruments considering volume and spectrum of assets included (de Haan et al., 2015).

The main objective of this work is to determine manner and magnitude in which information about high profile instrument of unconventional monetary policy – QE – affected equity markets in after-crisis period. We accept broad evidence of large and persistent effects of the QE on the fixed income securities, and various effects on macroeconomic indicators, hence we contribute to existing literature by attempt to quantify effects of the QE on the equity markets in the EU from short-term perspective. We argue, that proper explanation and examination of relationship between the QE linked information and the equity markets should reflect to profitable positioning or effective hedging during possible next periods, where such instruments should take place.

Delivorias (2015) describes QE simply as “an unconventional form of monetary policy where a central bank creates new money to buy financial assets, like government bonds.” The term – QE – was firstly used in line with Japan's situation that followed real-estate bubble burst, and deflationary pressures in 1990s. With interest rates at the zero-lower bound (ZLB), the Bank of Japan (BoJ) decided to boost cash reserves of banks by purchasing particular assets – government bonds – from banks. Main idea was, that providing cash to banks will support lending across the market and consequently extenuate deflationary pressures, after banks will achieve required level of cash reserves. Logically, balance sheet of the BoJ expanded significantly. Analogically, similar programmes were introduced by the Bank of England (BoE), the Federal Reserve (FED), and the ECB.

Compared to the FED, the ECB reacted to crisis moderately, considering volumes of purchases and scale of assets included, also with respect to timing of launching the QE, which was delayed significantly in comparison to the FED (see e.g. Hausken and Ncube, 2013). Even though, there were early programmes operated by the ECB, which are recognized as unconventional monetary policy instruments. First UMP programme – long-term refinancing operation (LTRO) – started in early 2008 and was followed by other programmes such as

outright monetary transactions (OMT), covered bond purchase programme (CBPP), targeted long-term refinancing operation (TLTRO) and asset backed purchase programme (ABPP), while those were all oriented on very specific assets, subjects or transactions, therefore, their effects in macro point of view were limited. However, in this paper we specifically aim to investigate the effects caused by announcements linked to these particular programmes regarding to initial (short-term) markets reaction.

After years of running above stated programmes, Governing Council of the ECB realized that there is no sign of substantial recovery, with subdued inflation and very moderate pace of economic growth. Considering the experience from the BoJ, the BoE, and the FED, the ECB finally approached the asset purchase programme (APP). After a severe drop in inflation rates and medium-term inflation expectations during 2014 (Urbschat and Watzka, 2017; Mestan et al., 2020), the APP was announced on 22nd January, 2015, and started officially in March 2015 with expected duration to September 2016, as of monthly pace of purchases at €60 billion (bn), €1.1 trillion (tn) in total. The APP is part of package of measures that also includes TLTRO and includes all purchase programmes under which the private sector securities and the public sector securities are purchased to address the risks of a too prolonged period of low inflation over the medium term. The APP consists of corporate sector purchase programme (CSPP), public sector purchase programme (PSPP), asset-backed securities purchase programme (ABSPP) and third covered bond purchase programme (CBPP3).

Instead of following given outlook for duration of this programme, governing council announced in March 2016 extending “size and duration” of the programme to €80 bn monthly of asset purchases till December 2016, because of “subdued inflationary pressures, and moderate pace of economic growth”. Again, in December 2016 Mario Draghi announced extending the programme till December 2017, with decreasing volume of purchases to €60 bn (from April 2017 onwards), because of same reasons. Even this deadline was extended, with the QE continuing till September 2018 with tapered monthly pace of €30 bn. On the meeting in the June 2018 Governing Council of the ECB decided to keep €15 bn of monthly purchases from September 2018 to December 2018, and finally, quit the programme. In order to examine market reactions strictly to policy announcements, further easing in extremely volatile market environment after the COVID-19 is excluded from our sample.

Additionally, we consider gradual tapering and normalization of monetary policy along with shrinking the bank's balance sheet as an inevitable consequence of the QE. We argue, that tapering and balance sheet unwinding (quantitative tightening – QT) linked effects should be taken into consideration as effects of consequences of the QE.

2 Literature review

We find across the existing literature, that mainstream research examining the QE implications is oriented on bond yields. To be more concrete, common ground among the authors is, that the QE lowered both government and corporate bonds' yields persistently and significantly. Especially Joyce et al. (2012) provides the wide-spectral and deep literature analysis. After describing “base point” from which the UMP is launched, authors explain impact of the QE on the domestic demand, the equities and the yields in theory. Authors also contribute to consensus found among other studies, that the QE is effective with respect to lowering long-term yields (Gagnon et al., 2011; Ihrig et al., 2012). On the other hand, Xing (2018) express some warning, that “persistently low long-term bond yields increase the probability and magnify the impacts of balance sheet crises.” Kiley (2018) then suggests, that such declines in long-term interest rates further stimulated spending and supported the

economic recovery and limited the fall in the inflation (see also Engen et al., 2015).

Broader study of Hausken and Ncube (2013) examines both effects of the QE on the interest rates and the yields and the broader economic effects using event-study and Bayesian Vector Autoregression (BVAR) models. Results of event studies from Japan, the United Kingdom (UK), the United States (US) and the EU are in line with others – the QE caused significant drop in sovereign yields, affecting the whole yield curve. In addition, authors provide evidence, that the FED and the BoE were more effective in lowering yields compared to the BoJ and the ECB. Authors argue, that in general for all four mentioned areas, effects of the QE on the gross domestic product (GDP) were rather limited, or insignificant. On the other hand, in order to push the inflation higher, the QE is effective tool in ZLB terms according to the BVAR results presented in this study.

Considering now only the ECB's QE, in general we find similar results (lowering yields along the whole yield curve) compared to the US, although the magnitude of the effects is lower. This is in our point of view caused by less developed and less interconnected capital and credit markets in Europe compared to the US (Suchy and Safar, 2017). We also argue that effects and implications of the ECB's QE are less examined (in comparison to the FED's QE programmes) because of shorter duration of the programme. On the other hand, before the QE was launched, there were other narrower-scale programmes, which are commonly included in studies dealing with the QE.

Andrade et al. (2016) analyse – in line with other studies – effects of the ECB's APP on sovereign yields, additionally explaining implications to macroeconomy. Using "New Area – Wide Model" authors came to conclusion, that announcement of the QE programme reduced significantly and persistently sovereign long-term bond yields. To add on, authors present that share prices of the banks with more sovereign bonds in their portfolios soared – which is in line with portfolio rebalancing channel theory, taking into account reducing risk of duration. Study also provides some insights about effects on economy in the Euro area. Using weighted average least squares (WALS) and Bayesian model averaging (BMA), Afonso and Jalles (2017) contributes by assessing the determinants of sovereign bond yield spreads in the period from 1999 to 2016 with respect to unconventional monetary policy measures. Besides identifying such baseline determinants, authors point out that the CBPP reduced yield spreads in all Euro area countries examined, particularly in between 2011 and 2013. Authors express conclusion, that long-term refinancing operations contributed to reducing the yield spreads in most countries.

Urbschat and Watzka (2017) studied the short-term financial markets reaction after APP press releases, analysing the development of bond yields and spreads around these releases estimating the different asset price channels by quantifying the cumulative decrease of spreads using event regressions for several Euro area countries. According to authors, effects in yields and spreads reduction were most pronounced for the initial announcement on the PSPP but declined afterwards for additional announcements. They conclude that rather modest effects from the portfolio rebalancing are present (for all countries examined).

On the other hand, Boermans and Vermeulen (2018) investigates whether the ECB's PSPP affected Euro area investors' demand for bonds by using granular securities holdings data. Empirical results of this study show that the PSPP did not affect the coefficients of bond demand functions among the Euro area investors. This suggests that investors' preferred habitat for certain bonds remained stable over the period 2013-2016 despite the QE programme.

Gambetti and Musso (2017) describes the transmission channels and provide empirical evidence of the macroeconomic impact of the APP. Evidence from this study (using Vector Autoregression – VAR model) suggests that the QE had significant upward

effect on both real GDP and inflation in Euro area during first two years. Considering time frame, impact on real GDP appears to be stronger in the short-term, while impact on inflation appears to be more significant in the medium-term according to authors. Such results find some support in Hutchinson and Smets (2017), where main focus is put on successfulness of reaction function and the way it is communicated, besides examining reactions of the GDP and inflation to monetary policy "package". Results suggest, that policy package absenting, inflation on average, would be almost half a percentage point lower than currently projected in each year over 2016–2019.

From different perspective of view, Blattner and Joyce (2016) examines how shocks to the net supply of government bonds affect the Euro area term structure of interest rates and the wider economy. Authors use the BVAR model, while results provide evidence of significant lowering of Euro area 10-year bond yields. According to the results, authors argue that the QE propped up both the inflation and the output gap in the Euro area.

Considering spillovers of the ECB's QE, Falagiarda et al. (2015), describes effects of the QE announcements on non-eurozone members' (Czech Republic, Hungary, Poland and Romania) bond yields. Authors present results of their event-study suggesting strong spillover effect via the portfolio rebalancing and signaling channels (excluding Hungary) which is in line with conclusions in studies examining the FED's QE spillovers.

However, considering the QE effects on the equity markets, we find veer limited literature background. We point out study of Henseler and Rapp (2018) where authors are interested in the question of which businesses benefited from the ECB's QE stimulus, using the event-study, focusing on substantial cross-sectional variation in a sample of 2,625 non-financial firms in the Eurozone. Results show that the announcement returns are positively correlated with leverage and negatively with size (authors find it consistent with the credit channel). Furthermore, the announcement returns are negatively correlated with the market-to-book ratio, suggesting different exposures of the value and growth stocks. These patterns are more pronounced once the programme initiation announcements are only examined according to this study. Authors also argue, that only "few existing studies analyse aggregate portfolios or even stock indices and report mixed results." For example Rogers et al. (2014) find positive announcement returns for the German equity market. Fratzscher et al. (2017) confirms that for banking sector and country indices and Haitma et al. (2016) for the Eurostoxx50. In contrast, Hosono and Isobe (2014) find negative returns for both the Eurostoxx Banks and Stoxx600. To sum up, equity markets related research examining effects of the QE is rather scarce, with only very limited sample examined.

3 Empirical Analysis

Based on literature linked to the QE, we find event-studies as most used methodological approach. Papers most related to the event-studies assume that the surprise part can be measured from the excess movements in asset prices in a particular window around the announcement time of the policy decision. Within this method it is therefore assumed that the monetary policy shock is fully captured within some time-window around the chosen event. If this assumption does not hold, the method may be biased (Rigobon and Sack, 2004). Too narrow window may cause that part of the reaction to the announcement news would be missed, too wide window on the other hand may contaminate the announcement with other news. That is why several papers (see e.g. Kholodilin et al., 2009; Sondermann et al., 2009; Hayo and Niehof, 2011 or Rogers et al., 2014) apply the heteroscedasticity-based identification approach of Rigobon and Sack (2004). This approach is robust considering endogeneity and omitted variables problems – therefore relies on weaker assumptions than the event-study approach. Rosa (2011) then provides evidence, that the event-study estimates (of the response of asset prices to monetary policy) contain a significant bias. But more importantly, Rosa (2011) also concludes that

“this bias is fairly small” and the “approach tends to outperform” with respect to the heteroscedasticity-based estimator for both small and large sample sizes, adding, that “in general the event-study methodology should be preferred”.

To examine short-term market reactions, i.e. effects of announcements on the equity markets, we use standard event-study methodology to determine excess returns (see e.g. MacKinlay, 1997). Abnormal (excess) returns will be analysed at the same time point (day) as announcement is released¹ using average returns (Brown and Warner, 1985) calculated from previous sixty days (Sosvilla-Rivero and Fernández-Fernández, 2015)²:

$$A_{AD} = R_{AD} - \bar{R}_t \quad (1)$$

$$\bar{R}_t = \frac{1}{60} \sum_{t-60}^{t-1} R_t \quad (2)$$

Where the A_{AD} represents the excess return on the announcement day (AD) of particular index, the R_{AD} is the return of particular index on the announcement day (calculated as the difference between the closing prices on the announcement day and the previous day, divided by the close price of the previous day – expressed in percentage points), the R_t represents the average return of particular index in the previous sixty days before the announcement day (expressed in percentage points). For purposes of examining the short-term QE information-related effects on the equity markets, we consider the A_{AD} (expressed in percentage points) as the key indicator. This indicator provides us with information how the daily return on index deviate on particular day, after the announcement is made, from its average performance during the previous sixty trading days. Even though the persistency of these effects can be questioned, undoubtedly we get solid information about the sentiment brought to the market participants by the ECB, in order to find out if such a policy is positive or negative impulse for the equities, which we consider as a main advantage of this methodology.

Here we would like to point out, that despite event-study is widely used among authors with respect to the QE (e.g. Henseler and Rapp, 2018; Curcuro et al., 2018; Urbschat and Watzka, 2017; Bauer et al., 2014; Wright, 2012; Swanson, 2011; Gagnon et al., 2011; Joyce et al., 2010; Gregova et al., 2020). Thornton (2017) argues that the event-study approach with announcements used as an events cannot provide statistically significant information about persistence and durability of effects caused on bond yields (or other assets) by those announcements, therefore this approach cannot be used to examine effectiveness of the whole QE in its complexity. We agree with Thornton (2017), that persistence of such effects cannot be examined via this methodology, nevertheless, from daily and intraday perspective it provides valuable knowledge about possible changes of “sentiment” of market participants.

For purposes of this research we used daily close prices of main equity indices representing the Europe’s equity markets. As pointed out by Kontonikas et al. (2013), the problem of endogeneity should be less of a concern when daily data are used within an event-study framework. Haitsma et al. (2016) adds, that monetary policy is unlikely to be affected by changes in asset returns on the same day, meaning that the likelihood that results are contaminated by reverse causality going from the equity prices to changes in the monetary policy is minimal (see also Fratzscher et al., 2017). Furthermore, one-day windows are unlikely to be contaminated by other pieces of news.

We are specifically interested in the aspects of using this methodological approach as they pertain to determine whether

information related to unconventional monetary policy (or the QE), provided by monetary authority, has positive or negative impact on equity markets via examining returns on benchmark indices on announcement days.

Despite wide research done on the QE topic, we consider the equity markets reactions to the QE related events/information undiscovered robustly. In general, literature coverage is scarce as Shah et al. (2018), Kiley (2014) or Rosa (2012), hence we find it beneficial to examine properly the sentiment brought to the markets by central banks’ announcements. Such empirical analysis could provide us with valuable knowledge with respect to establishing profitable positions, or, on the other hand help to hedge against expected losses based on anticipated market reactions.

Main input (besides daily close prices of particular indices) for this analysis would be identification of the QE related announcements. For this purpose, we examined content of each monetary policy linked release from 2008 onwards from the ECB. Such press releases, central bankers’ speeches or conferences are held mostly in the afternoon, which gives markets’ participants several hours to adjust, and price-in announced information until the markets are closed.

For the EU, we used daily close prices of main equity indices as representatives of the European equity markets (CAC, DAX, Eurostoxx50, FTSEMIB, Stoxx600), while returns/changes were calculated as percentage points³. In the Europe, index CAC is a free float market capitalization weighted index reflecting the performance of the 40 largest and most actively traded shares listed on Euronext Paris, DAX is a total return index of 30 selected German blue-chip stocks traded on the Frankfurt Stock Exchange, Eurostoxx50 is leading blue-chip index for the Eurozone, providing blue-chip representation of supersector leaders in the region, covering 50 stocks from 11 Eurozone countries, FTSEMIB consists of the 40 most liquid and capitalized stocks listed on the Borsa Italiana and Stoxx600 represent 600 large companies in Europe, covering more than 90% of market cap in the Europe. Descriptive statistics of indices used we present in Tab. 1:

¹ Announcements are released usually in the afternoon, while markets close several hours later, which gives market participants enough time to absorb information contained in particular announcement.

² Sosvilla-Rivero & Fernández-Fernández (2015) uses previous six weeks (30 days) as a timeframe for calculating average returns. We argue that doubling that time to approximately one quarter (twelve weeks) provides more appropriate information with respect to “average” returns.

³ Returns on announcement days were removed from sample so average returns were calculated without contamination of excess returns on announcement days.

Tab. 1: The EU indices – descriptive statistics

	Obs.	Mean	Median	St. Dev.	Kurt.	Skew.	Min.	Max.	Sum
CAC	2820	0.01%	0.03%	1.46%	6.7723	0.1827	-9.04%	11.18%	20.00%
DAX	2820	0.02%	0.06%	1.42%	6.5652	0.1664	-7.16%	11.40%	62.96%
Eurostoxx50	2820	0.00%	0.00%	1.47%	6.1834	0.1041	-8.62%	11.00%	-0.70%
FTSEMIB	2820	-0.01%	0.03%	1.69%	4.6137	-0.0262	-12.48%	11.49%	-26.02%
Stoxx600	1476	0.02%	0.05%	0.96%	4.5893	-0.5153	-7.03%	4.20%	27.58%

Source: Own elaboration. Data retrieved from Investing.com

In Tab. 2 we present announcements considered as events for the European markets, compiled of every single press release of the ECB from 2008 to 2019Q1, where type of meeting or announcement is shown in second column, with date of announcement in first column. Third column refers to which particular UMP programme is event/announcement linked, with short description highlighting most important part of such

announcement. Tab. 2 consists only of announcements linked to UMP and its' programmes, including also predecessors of the APP (recognized as the QE) which started in 2015. Since previous programmes are also identified as nonstandard or unconventional monetary policy instruments and represents assets purchases to some extent, we added them to our study, in order to increase robustness of this analysis.

Tab. 2: The ECB's announcements

Date	Event	Description
13.12.2018	ECB Press Release	"Regarding non-standard monetary policy measures, the net purchases under the asset purchase programme (APP) will end in December 2018. At the same time, the Governing Council is enhancing its forward guidance on reinvestment. Accordingly, the Governing Council intends to continue reinvesting, in full, the principal payments from maturing securities purchased under the APP for an extended period of time past the date when it starts raising the key ECB interest rates, and in any case for as long as necessary to maintain favourable liquidity conditions and an ample degree of monetary accommodation."
14.06.2018	ECB Press Release	"The Governing Council anticipates that, after September 2018, subject to incoming data confirming the Governing Council's medium-term inflation outlook, the monthly pace of the net asset purchases will be reduced to €15 bn until the end of December 2018 and that net purchases will then end. The Governing Council expects the key ECB interest rates to remain at their present levels at least through the summer of 2019 and in any case for as long as necessary to ensure that the evolution of inflation remains aligned with the current expectations of a sustained adjustment path."
25.01.2018	ECB Press Release	"Regarding non-standard monetary policy measures, the Governing Council confirms that the net asset purchases, at the new monthly pace of €30 bn, are intended to run until the end of September 2018, or beyond, if necessary, and in any case until the Governing Council sees a sustained adjustment in the path of inflation consistent with its inflation aim."
26.10.2017	ECB Press Release	APP expanded, monthly pace reduction from €60 bn/m to €30 bn/m from 1/2018.
15.12.2016	ECB Press Release	ABSPP change: "The Governing Council of the European Central Bank (ECB) decided yesterday that the Asset-Backed Securities Purchase Programme (ABSPP) should be fully implemented by national central banks rather than relying on the support from external managers."
08.12.2016	ECB Press Release	APP extended to December 2017, monthly pace reduction from €80 bn/m to €60 bn/m from 4/2017.
10.03.2016	ECB Press Release	ECB announces new series of targeted longer-term refinancing operations (TLTRO II) + ECB adds corporate sector purchase programme (CSPP) to the asset purchase programme (APP) and announces changes to APP – APP expanded to €80 bn from April.
09.11.2015	ECB Press Release	Public sector purchasing programme (PSPP) – "As of 10 November 2015, the PSPP issue share limit will be set at 33% per ISIN. This higher issue limit allows for a significant increase in the purchasable amount both for outstanding and for newly issued PSPP eligible securities."
23.09.2015	ECB Press Release	Asset backed securities purchase programme (ABSPP) – Technical details – "The Governing Council of the European Central Bank (ECB) decided to increase the proportion of purchases by national central banks rather than external managers in the Asset-Backed Securities Purchase Programme, as announced when the programme was first launched."
22.01.2015	ECB press conference MPD-GC	Asset purchase programme (APP) initial announcement.
30.10.2014	ECB Press Release	Technical details - ECB appoints executing asset managers for the ABSPP – "The purchases under the ABSPP are expected to start in November 2014, following the approval by the Governing Council of a legal act on the implementation of the programme."
02.10.2014	ECB Press Release	ABSPP + CBPP - technical details – "programmes will last at least two years".
18.09.2014	ECB Press Release	"The European Central Bank has today allotted €82.6 bn to 255 counterparties in the first of eight targeted longer-term refinancing operations (TLTROs) to be conducted between September 2014 and June 2016. The programme is designed to enhance the functioning of the monetary policy transmission mechanism by supporting bank lending to the real economy."
03.07.2014	ECB Press Release	Long-term refinancing operation (LTRO) – technical details – "For banks that exhibited positive eligible net lending in the twelve-month period to 30 April 2014, the benchmarks are always set at zero."
04.06.2014	ECB Press Release	In pursuing its price stability mandate, the Governing Council of the ECB has today announced measures to enhance the functioning of the monetary policy transmission mechanism by supporting lending to the real economy. In particular, the Governing Council has decided: 1. To conduct a series of targeted longer-term refinancing operations (TLTROs) aimed at improving bank lending to the euro area non-financial private sector, excluding loans to households for house purchase, over a window of two years. 2. To intensify preparatory work related to outright purchases of asset-backed securities (ABS).
06.12.2012	ECB press conference MPD-GC	LTRO + MRO.
31.10.2012	ECB Press Release	Covered bond purchase programme 2 (CBPP2).
06.09.2012	Governing Council Press Release	Announcement of the ECB short-term sovereign bond purchase program (Outright Monetary Transactions, OMT). No purchases were conducted within this program as of July 2014.
02.08.2012	ECB press conference	Outright monetary transactions (OMT).
26.07.2012	M. Draghi speech	M. Draghi promised to do "whatever it takes to save the euro." This speech triggered the expectations of ECB intervention in the sovereign markets.
08.12.2011	Governing Council Press Release	Announcement of the three-year longer-term refinancing operations (LTROs). ECB banks were given the opportunity to obtain all liquidity needed for the period of three years at the interest rate fixed at the average rate of the main refinancing operations over the life of the operation.
06.10.2011	Governing Council Press Release	Announcement ECB covered bond purchase programs (CBPP2) designed to purchase covered bonds, i.e., securities issued by credit institutions backed by mortgages and public-sector debt.
07.08.2011	Governing Council Press Release	Reactivation of SMP announced on Sunday, August 7, 2011, when the Spanish and Italian sovereign bond markets came under tension.
30.06.2010	Governing Council Press Release	CBPP / LTRO.
10.05.2010	Governing Council Press Release	Announcement of the longer-term sovereign bond purchase program (Securities Markets Programme, SMP). The ECB Governing Council decided to launch the SMP in the midst of the Greek crisis on Sunday, May 9, 2010. A related press release was published the next day.
07.05.2009	Governing Council Press Release	Announcement of ECB covered bond purchase program (CBPP1) designed to purchase covered bonds, i.e., securities issued by credit institutions backed by mortgages and public-sector debt.
15.10.2008	Governing Council Press Release	Announcement of the fixed-rate full-allotment (FRFA) procedure: Long-term Refinancing Operations (LTRO).
13.10.2008	Governing Council Press Release	Announcement of the fixed-rate full-allotment (FRFA) procedure: US dollar funding.
08.10.2008	Governing Council Press Release	Announcement of the fixed-rate full-allotment (FRFA) procedure: Main Refinancing Operations (MRO).
28.03.2008	Governing Council Press Release	Long-term refinancing operation (LTRO).

Note: MPD-GC – Monetary Policy Department, Governing Council; Similar announcements used as events regarding UMP could be found in Szczerbowski (2015) or Sosvilla-Rivero & Fernández-Fernández (2015).

Source: Own elaboration. Information retrieved from the ECB.

4 Results and discussion

In Tab. 3 we present calculated excess returns for main indices of Germany (DAX), France (CAC), Italy (FTSEMIB), Eurostoxx50 and Stoxx600 on ECB announcement days presented in Tab. 2. We point out, that in Tab. 3 are excess returns calculated both for the UMP programmes before the QE started same as for the announcements regarding the QE after January 2015.

From these results, we would like to point out several remarks. Firstly, if we are considering "index movements" above or below one standard deviation of performance over reference period as a strong magnitude reaction, we can conclude, that in period before the QE (started by announcement on 22.01.2015) market reactions were more volatile than in period after the QE started. We put this conclusion in the context of decreasing volatility in the markets all over the world after crisis.

With respect to reactions in late 2018 and, in general, hard and soft data revised down across the globe along with other geopolitical tensions drove also sentiment among the European equity markets. Especially indicators such as inflation expectations and growth expectations were revised down (by the OECD, the ECB or the IMF), and beaten more than expected in several EU countries, which put some pressure on the ECB and its projected policy, especially with regards to future rates-hiking path and the policy normalization. However, for the ECB, we did not record any significant policy change-related announcement in particular timeframe. Further in Tab. 4 we provide some descriptive overview of calculated excess returns. Average reactions over the whole reference period (2008-2019Q1) are in slightly positive range, although we do not consider it as a significant information linked only to the QE.

Tab. 3: Excess returns on the ECB's announcements

Date	CAC	DAX	Eurostoxx50	FTSEMIB	Stoxx600
13.12.2018	-0.10%	1.77%	0.26%	0.72%	0.02%
14.06.2018	1.33%	3.28%	1.34%	1.26%	1.86%
25.01.2018	-0.26%	-0.89%	-0.36%	0.34%	-0.40%
26.10.2017	1.41%	1.28%	1.21%	1.54%	1.03%
15.12.2016	0.93%	0.98%	1.08%	1.89%	0.82%
08.12.2016	0.75%	1.66%	1.28%	1.49%	1.18%
10.03.2016	-1.64%	-2.19%	-1.39%	-0.26%	-1.56%
09.11.2015	-1.49%	-1.58%	-1.44%	-1.84%	-1.06%
23.09.2015	0.21%	0.65%	0.29%	0.26%	-0.23%
22.01.2015	1.37%	1.08%	1.47%	2.37%	1.50%
30.10.2014	0.74%	0.35%	0.42%	0.15%	0.56%
02.10.2014	-2.80%	-1.89%	-2.76%	-3.91%	-2.39%
18.09.2014	0.78%	1.47%	1.07%	0.12%	0.99%
03.07.2014	1.03%	1.15%	1.14%	0.98%	0.90%
04.06.2014	1.01%	0.11%	0.82%	1.43%	0.36%
06.12.2012	0.27%	1.04%	0.40%	-0.71%	-
31.10.2012	-0.83%	-0.36%	-0.49%	0.08%	-
06.09.2012	2.87%	2.70%	3.19%	4.03%	-
02.08.2012	-2.73%	-2.23%	-2.70%	-4.59%	-
26.07.2012	4.13%	2.82%	4.35%	5.82%	-
08.12.2011	-2.63%	-2.18%	-2.60%	-4.44%	-
06.10.2011	3.71%	3.51%	3.46%	3.87%	-
07.08.2011	-4.35%	-4.74%	-3.40%	-2.14%	-
30.06.2010	0.64%	0.33%	1.01%	0.83%	-
10.05.2010	9.69%	5.18%	10.40%	11.41%	-
07.05.2009	-4.58%	-3.39%	-4.23%	-3.17%	-
15.10.2008	-1.08%	-1.68%	-1.37%	-1.63%	-
13.10.2008	-6.48%	-6.07%	-6.12%	-4.95%	-
08.10.2008	11.51%	11.82%	11.36%	11.88%	-
28.03.2008	-6.16%	-5.64%	-6.26%	-5.46%	-

Note: Bold labelled are excess returns above standard deviation of daily returns, excess returns below standard deviation of daily returns are shown in *italics*. Stoxx600 data set is available only from 2013 onwards.

Source: Own elaboration. Daily data from 2008Q1 to 2019Q1 retrieved from Investing.com.

Considering now only period from 2015 onwards (Tab. 5), we face again slightly positive reactions on every index in average: CAC +0.25%, DAX +0.60%, Eurostoxx50 +0.37%, FTSEMIB +0.78% and Stoxx600 +0.36%, which is well above the average daily returns over reference period⁴ (CAC +0.0169%, DAX

+0.0145%, Eurostoxx50 +0.0033%, FTSEMIB +0.0181% and Stoxx600 +0.0048%). Results suggest, that regarding the QE announcements made after the January 2015, indices reacted positively (6 situations out of 10 on CAC, with average upside +0.65%, 7 situations out of 10 on DAX, Eurostoxx50 and Stoxx600 with average upside +0.96%, +0.87% and +0.66%, respectively, while FTSEMIB increased in 8 out of 10 situations with average gain +0.55%).

Tab. 4: Descriptive overview of the EU indices' excess returns

Descriptive overview	CAC	DAX	Eurostoxx50	FTSEMIB	Stoxx600
Std. Dev. overall	1.41%	3.01%	1.43%	2.51%	0.95%
Average excess return	0.24%	0.28%	0.38%	0.58%	0.27%
Number of positive returns	17	18	18	19	11
Positive returns (Ratio)	57%	60%	60%	63%	73%
Average upside on pos. ret.	2.49%	2.29%	2.48%	2.66%	0.86%
Number of negative returns	13	12	12	11	4
Negative returns (Ratio)	43%	40%	40%	37%	27%
Average downside on neg. ret.	-2.84%	-2.83%	-2.89%	-3.15%	-1.35%

Note: Std. Dev. refers to standard deviation of daily excess returns over examined period.

Source: Own elaboration.

We add on, that the ECB only approached closing of its APP programme in December 2018. Hence, we find only two tapering, policy normalizing or tightening-related announcements from the ECB in our sample. First was made on 25th January 2018, where M. Draghi announced reduced monthly pace of purchases from €60 bn to €30 bn, suggesting possible end of the QE in September 2018. After this particular announcement, we faced negative, however muted, reactions (except from FTSEMIB): CAC -0.26%, DAX -0.89%, Eurostoxx50 -0.36%, Stoxx600 -0.40%. Relative mild reactions' magnitude could be consequence of already partially priced in information by equities and other asset classes. We consider this as a result of clear, foreseeable and stable communication from the ECB, therefore clear understanding of the ECB's reaction function by market participants.

Tab. 5: Descriptive overview of the EU indices' excess returns – 2015 onwards

Descriptive overview (22.01.2015 onwards)	CAC	DAX	Eurostoxx50	FTSEMI	Stoxx600
Average excess return	0.25%	0.60%	0.37%	0.78%	0.36%
Number of positive returns	6	7	7	8	7
Positive returns (Ratio)	60%	70%	70%	80%	70%
Average upside on pos. ret.	0.65%	0.96%	0.87%	0.55%	0.66%
Number of negative returns	4	3	3	2	3
Negative returns (Ratio)	40%	30%	30%	20%	30%
Average downside on neg. ret.	0.87%	1.55%	-1.06%	-1.05%	-1.01%

Source: Own elaboration.

On the other hand, this announcement was followed by announcement made on 14th June 2017, where another prolonging of programme came, with additional dovish remarks towards rate hiking. Whatever anticipated this prolonging-related information was, initial reactions overall were highly positive (again, in line with our assumption, that prolonging or expanding current programme cause positive reactions on equities): CAC +1.33%, DAX 3.28%, Eurostoxx50 1.34%, FTSEMIB +1.26%, Stoxx600 +1.86%. The second tapering related announcement came on 13th December 2018. Besides announcing, that the QE programme will end, which was, by the way already widely expected, some significant, sentiment maintaining remarks came along, such as: "Accordingly, the Governing Council intends to continue reinvesting, in full, the principal payments from maturing securities purchased under the APP for an extended period of time past the date when it starts raising the key ECB interest rates..." Initial reactions were therefore mixed (CAC -0.10%, DAX +1.77%, Eurostoxx50 +0.26%, FTSEMIB +0.72%,

⁴ Considering period from 2015 to 2018.

Stoxx600 +0.02%). We put this into context with market expectations, and again, understanding of reaction function. Several studies approached more sophisticated methods to identify only announcements considered as an unconventional monetary policy “surprises”, in order to examine only movements and reactions on such days (see e.g. Hutchinson and Smets, 2017). Hence, there are some announcements that need individual approach. On 2nd December 2012, the OMT programme was announced, which was followed by initial negative reactions, however for next three days were significantly positive from indices examined perspective. We argue this is in line with portfolio rebalancing channel, same as the situation on 8th August 2011 after reactivation of SMP (announced on Sunday, 7th August 2011), when the Spanish and Italian sovereign bond markets came under tension, and investors rebalanced their portfolios towards the programme linked assets. Another announcement that caused significant portfolio rebalancing, was made on 7th May 2009, when CBPP1 was announced, therefore we faced sell-offs in equities. Besides these announcements, followed by significant sell-offs in equities, we identified, that even initial reactions on some announcement days⁵ were negative, further trading days brought significant positive returns. Consequently, we separated excess returns on announcement days containing information about announcing, expanding or prolonging the QE (25 announcement days, 13 for Stoxx600, respectively⁶).

Tab. 6: Excess returns on announcing, expanding or prolonging the QE

Date	CAC	DAX	Eurostoxx50	FTSEMIB	Stoxx600
14.06.2018	1.33%	3.28%	1.34%	1.26%	1.86%
26.10.2017	1.41%	1.28%	1.21%	1.54%	1.03%
15.12.2016	0.93%	0.98%	1.08%	1.89%	0.82%
08.12.2016	0.75%	1.66%	1.28%	1.49%	1.18%
10.03.2016	-1.64%	-2.19%	-1.39%	-0.26%	-1.56%
09.11.2015	-1.49%	-1.58%	-1.44%	-1.84%	-1.06%
23.09.2015	0.21%	0.65%	0.29%	0.26%	0.23%
22.01.2015	1.37%	1.08%	1.47%	2.37%	1.50%
30.10.2014	0.74%	0.35%	0.42%	0.15%	0.56%
02.10.2014	-2.80%	-1.89%	-2.76%	-3.91%	-2.39%
18.09.2014	0.78%	1.47%	1.07%	0.12%	0.99%
03.07.2014	1.03%	1.15%	1.14%	0.98%	0.90%
04.06.2014	1.01%	0.11%	0.82%	1.43%	0.36%
06.12.2012	0.27%	1.04%	0.40%	-0.71%	-
31.10.2012	-0.83%	-0.36%	-0.49%	0.08%	-
06.09.2012	2.87%	2.70%	3.19%	4.03%	-
26.07.2012	4.13%	2.82%	4.35%	5.82%	-
08.12.2011	-2.63%	-2.18%	-2.60%	-4.44%	-
06.10.2011	3.71%	3.51%	3.46%	3.87%	-
30.06.2010	0.64%	0.33%	1.01%	0.83%	-
10.05.2010	9.69%	5.18%	10.40%	11.41%	-
15.10.2008	-1.08%	-1.68%	-1.37%	-1.63%	-
13.10.2008	-6.48%	-6.07%	-6.12%	-4.95%	-
08.10.2008	11.51%	11.82%	11.36%	11.88%	-
28.03.2008	-6.16%	-5.64%	-6.26%	-5.46%	-
Average	0.77%	0.71%	0.87%	1.05%	0.34%
NoPR	17	17	17	17	10
PosRatio	68%	68%	68%	68%	77%

Note: NoPR – Number of Positive Returns; PosRatio – Ratio of positive returns.

Source: Own elaboration.

Tab. 6 indicates that each index remained in positive range in average, while in 68% of observed announcement days CAC, DAX, Eurostoxx50 and FTSEMIB returned positively, Stoxx600 in 77% of observed announcement days, respectively. Considering now only period starting in January 2015, we present similar table (Tab. 7) with group of announcing, prolonging or expanding the QE programmes linked information:

Tab. 7: Excess returns on announcing, expanding or prolonging (2015 onwards)

Date	CAC	DAX	Eurostoxx50	FTSEMIB	Stoxx600
14.06.2018	1.33%	3.28%	1.34%	1.26%	1.86%
26.10.2017	1.41%	1.28%	1.21%	1.54%	1.03%
15.12.2016	0.93%	0.98%	1.08%	1.89%	0.82%

⁵ 10th March 2016, 30th October 2014, 31st October 2012, 2nd August 2012, 8th December 2011.

⁶ Announcements described individually above, that caused significant portfolio rebalancing and therefore sell-offs in equities, we consider as unprecedented, hence we do not add them to Group 1 announcements.

08.12.2016	0.75%	1.66%	1.28%	1.49%	1.18%
10.03.2016	-1.64%	-2.19%	-1.39%	-0.26%	-1.56%
09.11.2015	-1.49%	-1.58%	-1.44%	-1.84%	-1.06%
23.09.2015	0.21%	0.65%	0.29%	0.26%	0.23%
22.01.2015	1.37%	1.08%	1.47%	2.37%	1.50%
Average	0.36%	0.65%	0.48%	0.84%	0.50%
NoPR	6	6	6	6	6
PosRatio	75%	75%	75%	75%	75%

Note: NoPR – Number of Positive Returns; PosRatio – Ratio of positive returns.

Source: Own elaboration.

From Tab. 7 we see, that in 75% of observed announcement days, each index remained in positive range. We add on, that both announcements⁷ when we faced negative reactions, were followed by at least two consequent days of significant gains in each index. Again, we explain it as a rebalancing towards other, programme-linked, assets. Results from January 2015 onwards are again in line with theory that that the equity indices tend to react positively on announcing, prolonging or expanding the QE programmes linked information. We find similar results in study examining equities in the United States regarding the QE of the FED (Safar and Sinicakova, 2019). Still literature coverage of examining equities reaction to the ECB's QE is scarce in general, therefore possibility to put our results in comparison with other authors is rather limited. On the other hand, original assumption is partially in line with Henseler and Rapp (2018), who suggests that positive reactions to the QE follow only regarding leveraged companies, however we examined not only non-financial companies as the authors did. Our results support conclusion of Shah et al. (2018), that the role of QE in explaining excess returns is important in the short-run. On the other hand, having only two announcements linked to tapering, quitting the QE or policy normalizing, we cannot verify assumption, that indices tend to react negatively to such type of information.

Individual analysis of specific announcements, and reactions that followed brought us to the conclusion, that after the announcement containing initial information about a new programme, we can expect sell-off in equities, which is caused by rebalancing the portfolios towards assets directly linked to the programme being announced, or similar assets. Strong effects found in the EU regarding programme initiation announcements we consider in line with Henseler and Rapp (2018). This, even from the short-term perspective, supports the portfolio rebalancing channel, broadly discussed and examined in literature from long-term perspective (see e.g. Hausken and Ncube, 2013; Krishnamurthy and Vissing-Jorgensen, 2011; Joyce et al., 2011; Gertler and Karadi, 2011).

Additionally, we observe decreasing volatility of reactions (see e.g. Ghosh and Sagar, 2017; Xing, 2018), especially after the “whatever it takes” speech by Mario Draghi in 2012. Strong commitment from the ECB depressed the volatility, and improved communiqué helped market participants to understand the ECB's reaction function more accurately. Concluding such necessity of the reaction function communiqué, we find also in Hutchinson and Frank (2017). The signalling channel, we consider as very important both from long-term perspective (Hausken and Ncube, 2013; Bhattarai et al., 2015; Bernanke et al., 2004; Eggertsson and Woodford, 2003) and short-term perspective – if we take into account the market participants' expectations, that the short-term interest rates (yields respectively) will remain low in the future (based on the forward guidance), we can observe bidding down yields on long-term securities, and also pushing up equity prices (mainly because of future earnings expectations). However, regarding tapering, or policy normalization linked information, we get mixed results, and we have only two such announcements yet, therefore we cannot provide significant results. Mixed equity index reactions we put in context of, *inter alia*, combination of well reaction function understanding on the one hand, and unprecedented character of such move on the other.

⁷ On 9th November 2015 P5PP share limit per ISIN was increased, and on 10th March 2016 TLTROII was announced.

5 Conclusion

From short-term, European market participants' reactions perspective, we approached most representative equity indices on daily basis along with using the ECB's announcements in our event-study. Despite the fact, that event-study is very common and popular among the authors, we contribute to existing literature as one of the first attempts to use this methodology in order to explain equity markets' participants sentiment changes brought to markets by the central banks' announcement. Our results show, that announcement of continuance, expanding or extending the QE programmes cause positive equity markets reactions. On the other hand, initial announcements about intended non-standard monetary policy instruments cause portfolio rebalancing towards assets that are subject of direct matter from the intended programme's perspective, however those initial reactions are overwhelmed by positive returns during next periods – supporting portfolio rebalancing theory. Additionally, we argue, that the QE decreased volatility also in the equity markets over the reference period (see e.g. Dondoni et al., 2018; Bhansali and Harris, 2018). Obtained results should serve as guidance for positioning in environment where the QE will be applied. However, inevitable policy normalization or quantitative tightening should be examined in the future, along with other less significant equity indices.

Literature:

- Afonso, A., & Jalles, J. T. (2019). Quantitative easing and sovereign yield spreads: Euro-area time-varying evidence. *Journal of International Financial Markets, Institutions and Money*, 58, 208-224.
- Andrade, P., Breckenfelder, J. H., De Fiore, F., Karadi, P., & Tristani, O. (2016). The ECB's asset purchase programme: an early assessment.
- Bauer, M. D., Rudebusch, G. D., & Wu, J. C. (2014). Term premia and inflation uncertainty: empirical evidence from an international panel dataset: comment. *The American Economic Review*, 104(1), 323-337.
- Bernanke, B., Reinhart, V., & Sack, B. (2004). Monetary policy alternatives at the zero bound: An empirical assessment. *Brookings papers on economic activity*, 2004(2), 1-100.
- Bhansali, V., & Harris, L. (2018). Everybody's Doing It: Short Volatility Strategies and Shadow Financial Insurers. *Financial Analysts Journal*, 74(2), 12-23.
- Bhattarai, S., Eggertsson, G. B., & Gafarov, B. (2015). *Time consistency and the duration of government debt: A signalling theory of quantitative easing* (No. w21336). National Bureau of Economic Research.
- Blattner, T. S., & Joyce, M. A. (2016). Net debt supply shocks in the euro area and the implications for QE.
- Boermans, M., & Vermeulen, R. (2018). *Quantitative easing and preferred habitat investors in the euro area bond market* (No. 586). Netherlands Central Bank, Research Department.
- Brown, S. J., & Warner, J. B. (1985). Using daily stock returns: The case of event studies. *Journal of financial economics*, 14(1), 3-31.
- Curcuro, S. E., Kamin, S. B., Li, C., & Rodriguez, M. (2018). International Spillovers of Monetary Policy: Conventional Policy vs. Quantitative Easing.
- Delivorias, A. (2015). The ECB's Expanded Asset Purchase Programme: Will Quantitative Easing Revive the Euro Area Economy. *European Parliamentary Research Service Briefing, European Parliament*.
- Dondoni, A., Montagna, D., & Maggi, M. (2018). VIX Index Strategies: Shorting Volatility As a Portfolio Enhancing Strategy. Available at SSRN 3104407.
- Draghi, M. (2014). Monetary policy communication in turbulent times. Speech at the Conference De Nederlandsche Bank 200 years: central banking in the next two decades. Amsterdam, 24 April 2014.
- ECB (13th December 2018). Monetary Policy Decisions. *Press Release*. Retrieved from: <https://www.ecb.europa.eu/press/pr/date/2018/html/ecb.mp181213.en.html>
- Eggertsson, G. B., & Woodford, M. (2003). "The Zero Bound on Interest Rates and Optimal Monetary Policy," *Brookings Papers on Economic Activity*, Vol. 34, pp. 139-235.
- Engen, E., Laubach, T., & Reifschneider, D. (2015). The macroeconomic effects of the Federal Reserve's unconventional monetary policies.
- Falagiarda, M., McQuade, P., & Tirpák, M. (2015). *Spillovers from the ECB's non-standard monetary policies on non-euro area EU countries: evidence from an event-study analysis* (No. 1869). ECB Working Paper.
- Fratzschler, M., Lo Duca, M., & Straub, R. (2017). On the international spillovers of US quantitative easing. *The Economic Journal*, 128(608), 330-377.
- Gagnon, J., Raskin, M., Remache, J., & Sack, B. (2011). The financial market effects of the Federal Reserve's large-scale asset purchases. *International Journal of Central Banking*, 7(1), 3-43.
- Gambetti, L., & Musso, A. (2017). The macroeconomic impact of the ECB's expanded asset purchase programme (APP).
- Gertler, M., & Karadi, P. (2011). A model of unconventional monetary policy. *Journal of Monetary Economics*, 58(1), 17-34.
- Ghosh, S., & Saggi, M. (2017). Volatility spillovers to the emerging financial markets during taper talk and actual tapering. *Applied Economics Letters*, 24(2), 122-127.
- Haitzma, R., Unalmis, D., & de Haan, J. (2016). The impact of the ECB's conventional and unconventional monetary policies on stock markets. *Journal of Macroeconomics*, 48, 101-116.
- de Haan, J., Oosterloo, S., & Schoenmaker, D. (2015). *Financial Markets and Institutions*. Cambridge Books.
- Hausken, K., & Ncube, M. (2013). Quantitative Easing and its Impact in the US, Japan, the UK and Europe.
- Hayo, B., & Niehof, B. (2011). *Identification through heteroscedasticity in a multicountry and multimarket framework: The effects of European Central Banks on European financial markets* (No. 24-2011). Joint discussion paper series in economics.
- Henseler, K., & Rapp, M. S. (2018). Stock market effects of ECB's Asset Purchase Programmes: Firm-level evidence. *Economics Letters*, 169, 7-10.
- Hosono, K., & Isobe, S. (2014). *The Financial Market Impact of Unconventional Monetary Policies in the US, the UK, the Eurozone, and Japan* (No. ron259).
- Hutchinson, J., & Smets, F. (2017). Monetary Policy in Uncertain Times: ECB Monetary Policy Since June 2014. *The Manchester School*, 85, e1-e15.
- Ihrig, J., Klee, E., Li, C., Schulte, B., & Wei, M. (2012). Expectations about the Federal Reserve's balance sheet and the term structure of interest rates.
- Joyce, M., Lasaosa, A., Stevens, I., & Tong, M. (2010). The financial market impact of quantitative easing.
- Joyce, M., Lasaosa, A., Stevens, I., & Tong, M. (2011). The financial market impact of quantitative easing in the United Kingdom. *International Journal of Central Banking*, 7(3), 113-161.
- Joyce, M., Miles, D., Scott, A., & Vayanos, D. (2012). Quantitative easing and unconventional monetary policy – an introduction. *The Economic Journal*, 122(564).
- Kholodilin, K., Montagnoli, A., Napolitano, O., & Siliverstovs, B. (2009). Assessing the impact of the ECB's monetary policy on the stock markets: A sectoral view. *Economics Letters*, 105(3), 211-213.
- Kiley, M. T. (2014). The response of equity prices to movements in long-term interest rates associated with monetary policy statements: before and after the zero lower bound. *Journal of Money, Credit and Banking*, 46(5), pp.1057-1071.
- Kiley, M. T. (2018). "Quantitative Easing and the "New Normal" in Monetary Policy," Finance and Economics Discussion Series 2018-004. Washington: Board of Governors of the Federal Reserve System, <https://doi.org/10.17016/FEDS.2018.004>.
- Kontonikas, A., MacDonald, R., & Saggi, A. (2013). Stock market reaction to fed funds rate surprises: State dependence and the financial crisis. *Journal of Banking & Finance*, 37(11), 4025-4037.

38. Krishnamurthy, A., & Vissing-Jorgensen, A. (2011). *The effects of quantitative easing on interest rates: channels and implications for policy* (No. w17555). National Bureau of Economic Research.
39. MacKinlay, A. C. (1997). Event studies in economics and finance. *Journal of economic literature*, 35(1), 13-39.
40. Mestan, M., Kralik, I., Zofaj, M., Karkosiakova, N., & Kabasinskas, A. (2020). Projections of pension benefits in supplementary pension saving scheme in Slovakia. *Central European Journal of Operations Research*, 1-26. DOI: <https://doi.org/10.1007/s10100-019-00669-2>
41. Rigobon, R., & Sack, B. (2004). The impact of monetary policy on asset prices. *Journal of Monetary Economics*, 51(8), 1553-1575.
42. Rogers, J. H., Scotti, C., & Wright, J. H. (2014). Evaluating asset-market effects of unconventional monetary policy: a multi-country review. *Economic Policy*, 29(80), 749-799.
43. Rosa, C. (2011). The Validity of the Eventstudy Approach: Evidence from the Impact of the Fed's Monetary Policy on US and Foreign Asset Prices. *Economica*, 78 (311), 429-439.
44. Rosa, C. (2012). How unconventional are large-scale asset purchases?. The impact of monetary policy on asset prices. Federal Reserve Bank of New York, Staff Report No. 560.
45. Safar, L., & Sinicakova, M. (2019). Quantitative easing effects on equity markets—event study evidence from the US. *Economics and Management*.
46. Shah, I., Schmidt-Fischer, F., & Malki, I. (2018). The portfolio balance channel: an analysis on the impact of quantitative easing on the US stock market (No. 74/18).
47. Sondermann, D., Bohl, M. T., & Siklos, P. L. (2009). The euro area stock market channel: Does one size fit all?. *Finance Research Letters*, 6(4), 230-235.
48. Sosvilla-Rivero, S., & Fernández-Fernández, N. (2016). Unconventional monetary policy and the dollar–euro exchange rate: further evidence from event studies. *Applied Economics Letters*, 23(12), 835-839.
49. Suchy, E. & Safar L. (2017). Disparities in capital markets of the EU and the US In: *European Financial Systems 2017*. - Brno: Masaryk University, 2017 P. 350-358.
50. Swanson, E. T. (2011). Let's twist again: a high-frequency event-study analysis of operation twist and its implications for QE2. *Brookings Papers on Economic Activity*, 2011(1), 151-188.
51. Szczerbowicz, U. (2015). The ECB unconventional monetary policies: have they lowered market borrowing costs for banks and governments?. *International Journal of Central Banking*, 11(4), 91-127.
52. Thornton, D. L. (2017). Effectiveness of QE: An assessment of event-study evidence. *Journal of Macroeconomics*, 52, 56-74.
53. Gregorova, E., Valaskova, K. Adamko, P., Tumpach, M., Jaros, J. (2020). Predicting Financial Distress of Slovak Enterprises: Comparison of Selected Traditional and Learning Algorithms Methods. *Sustainability*, 12(10).
54. Urbschat, F., & Watzka, S. (2017). Quantitative Easing in the Euro Area-An Event Study Approach.
55. Wright, J. H. (2012). What does monetary policy do to long-term interest rates at the zero lower bound? *The Economic Journal*, 122(564).
56. Xing, V. (2018). Yield Curve Flattening a Symptom of Ineffective Policy Tightening.

Primary Paper Section: A

Secondary Paper Section: AH, AD

UTILISATION OF TECHNOLOGIES AND INNOVATIONS IN LOGISTICS OF AUTOMOTIVE ENTERPRISES

*KLAUDIA GUBOVÁ

University of Economics in Bratislava, Faculty of Business Management, ^aDepartment of Production Management and Logistics, Dolnozemska cesta 1, 852 35 Bratislava, Slovak Republic
email: *klaudia.gubova@euba.sk*

The article is a partial output of research project VEGA No. 1/0375/20 „New dimension in the development of production management and logistics under the influence of Industry 4.0 in enterprises in Slovakia“.

Abstract: In the thriving enterprise, logistics ensures continuous flow and speed of all processes, from the moment of obtaining materials, through their processing up till the product delivery for acceptable price to the customer. The fulfillment of these requirements is not easy and requires a sophisticated logistics system involving the use of innovations that help improve and streamline processes such as transport, transfer, handling, storage, management of packaging. The main objective of the paper is based on the study of theoretical knowledge and the implementation of a questionnaire survey, to determine and analyse the utilisation of selected technologies and innovations in logistics of automotive enterprises.

Keywords: logistics technologies, logistics innovations, Supply chain management, Cross-docking, logistics outsourcing

1 Introduction

In today's dynamically developing world there are many economic, social, technical and political changes. Their nature and extent is determined by factors influenced by economic development and economic growth. As a result of globalization, there is a sharp increase in competition. Globalization of markets and business brings the same prerequisites for access to information, resources and technology. We see that the "world" is getting smaller and distances are minimized by information and communication technologies (Richnák, 2015a).

In today's revolutionary conditions, logistics technologies are a prerequisite for efficient results in business management in the form of economy and efficiency. Their use and continuous improvement must be one of the necessary management activities in the enterprise. Nowadays we are witnessing a different theoretical understanding of logistics technologies and the use of a wide range of technologies by enterprises (Richnák, 2020b). Entrance of internet and dynamic technics expansion supported growth of space for service innovations. Nowadays, the biggest competitive strength is hidden in information. Information moves the world of innovations. Innovation is an enormous power, an important factor for survival, growth and business prosperity. Innovation is now recognized as the key to bridging the gap between technology and business strategy. Innovations are fundamental source of economic growth in society. Sources of innovation are considered to be human activities, thinking, changes in intellectual character, changes in human knowledge, those are new inventions, discoveries, knowledge in scientific-technological development. Term used to name all these processes is invention (Leščišin, 1979). Innovation is defined as „every change in the organism (product, service, technology, organisational structure, etc.) in the company which tends to its new stage (Molnár, 2015). Theory of innovation was established before World War I by J. A. Schumpeter, who clarified reasons why businesses innovate and what are the reasons for technological changes. His explanation was supported by studies and he reasoned as follows: „ The reason is an achievement of regular income, as new materials, technical means, technological advancements and processes represent certain advantage for businesses. Result of innovative processes, activities are lower expenses created by higher productivity resulting from process innovation, in cases of patents of innovated product, company might achieve monopoly position, which enables them to determine higher price (Heřman and Hezina and Zeman, 2002).

Recently, there have been significant changes and advances in logistics. Its competences within the company have gradually

expanded and have taken on more and more activities, thus beginning to fulfill an essential role in the management of the company. Globalization, economic changes, turbulent development of information and communication technologies, automation of production, development of industrial revolutions, especially the Fourth Industrial Revolution contributed to the new form of logistics (Richnák, 2019c).

2 Literature Review

Effective Supply Chain Management (SCM) has become a potentially valuable way of securing competitive advantage and improving organizational performance since competition is no longer between organizations, but among supply chains.

The main aim of Supply Chain Management is an integration and management of supply chain which represents all organisations and activities connected with the flow and transformation of goods from material to final customer. In supply chain we can find material and information flows. Within Supply Chain Management businesses cooperate via effective business systems with an objective to decrease logistics expenses, disbursements, investments while satisfying needs of final consumers (Handfield and Nichols, 2002).

Effective design and management of supply chain networks can cut costs and enhance customer value. The supply chain can be a sustainable source of advantage in today's turbulent global marketplace, where demand is difficult to predict and supply chains need to be more flexible as a result. The real competition today is not between companies, but between supply chains. The winning approach to supply chains is an integrated perspective that takes account of networks of relationships, sustainability and product design, as well as the logistics of procurement, distribution and fulfilment. Supply Chain Management is a network of facilities that produce raw materials, transform them into intermediate goods and then final products, and deliver the products to customers through a distribution system. The management of the supply chain and the roles of various actors involved differ from industry to industry and company to company. As a result Supply Chain Management (SCM) has become a vital issue for manufacturers, professionals and researchers. It is felt that to manage the supply chain effectively entire structure of supply chain must be understood properly (Shukla and Garg and Agarwal, 2011).

Cross docking is a distribution system where products are not stored, but they are translated and delivered as quickly as possible. It was first used by large business chains, later expanded into the food and automobile industries. It is currently being extended to other sectors. It has several different forms. It has several different forms. Different forms of Cross docking cause content and scope differences in the definition because they relate to the distribution chain or focus on the cross-docking center (Richnák, 2018d).

Implementing a cross-docking warehouse for perishable product distribution improves food distribution, reduces the cycle time of the delivery and improves customer service level. "Cross docking is a warehousing strategy that involves movement of material directly from the receiving dock to the shipping dock with a minimum dwell time in between. Cross docking can effectively bring substantial reductions in the transportation cost without increasing the inventories while simultaneously maintaining the level of customer service. Cross docking can also lead to the reduction of order cycle time, thereby improving the flexibility and responsiveness of the distribution network (Apte and Viswanathan, 2010).

Rajesh (2009) defines cross-docking as distribution process, where products are not stored, but they are reloaded and dispatched further as quickly as possible. At first it was employed by big business chains, later it spread into food and

automobile industry. Currently it is widely spread within other industries as well.

With the help of cross-docking, it is possible to transport goods that allow easy and fast handling, have the same shape and are sufficiently packaged. By means of a standardized handling technique, it is possible to flow as quickly as possible from receipt to the next dispatch, which is why boxes and pallets are used in handling. It is possible to transport with the help of cross docking mainly goods with constant demand, or its small change, it is, for example, drugstores, food, beverages and other consumer goods, which are intended primarily for retail (Richnák, 2014e).

In cross-docking, shipments typically spend less than 24 hours in a cross-dock. The purpose of cross-docking includes reducing inventory costs, increasing inventory turns, consolidating transportation, increasing throughput and reducing operation costs associated with eliminating unnecessary handling and storage. It also offers a way to increase inventory velocity (Li et al., 2012). Vendor-managed inventory (VMI) is a collaborative strategy between a buyer and supplier to optimize the availability of products at minimal cost. Overall, inventory management cost plays a significant role in reducing supply chain cost. Specifically in the fast-moving consumer goods (FMCG) sector, inventory–turnover ratio needs to be very high to compete in the global market. Throughout the supply chain, VMI is used to cut inventory-related costs and keep inventory levels low. VMI helps organizations to reduce the inventory-associated costs by shifting the responsibility of managing and replenishing inventory to vendors (Singh, 2013). J. Van Belle and P. Valckenaers and D. Cattrysse (2012) described “as the process of unloading freight from inbound vehicles and loading these goods into outbound vehicles, with minimal handling and with little or no storage in between one of the most popular logistical strategies.

Dupaľ and Richnák (2017) point out new trends in the sale of products, such as online shopping or adapting production according to customer requirements, increasing the share of logistics in the success or failure of the company. Logistics is the area in which a company can gain a competitive advantage.

In cross-docking, goods are first classified as per the demand at the respective destinations and then are reloaded into the corresponding outbound transport vehicles. This strategy has several advantages such as reduction in total inventory costs and lead time, enhanced customer service levels and improvement in the supplier relationships. Cross-docking centres are dynamic environments where products arrive, are regrouped, and leave the same day (Vis and Roodbergen, 2008).

Today, the logistic outsourcing is developing in an industrial environment marked by a strong commercial uncertainty (Wang and Yeung and Zhang, 2011). Business Process Outsourcing (BPO) is a program that has become popular in the past decade. It involves contracting with external suppliers to perform work previously done in-house. Much of the motivation has been to reduce the cost of performing the activity and reducing the investment in resources to perform the activity internally. Outsourcing, especially offshore outsourcing, has become one of the most discussed business activities during the first decade of the twenty-first century (Crandall and Crandall, 2015).

Stankovský and Cibulka (2011) say that logistics outsourcing is enhanced especially in fields of acquisition, distribution and reverse logistics. Acquisition and distribution covers mainly utilisation of transportation services. The reason is mainly growth of transportation complexity, only number of businesses is capable to operate their own fleet and appertaining personnel. Outsourcing of reverse logistics regards management of waste management, utilisation of leftover stock, recycling materials from returned non-functional products and repairs of repairable non-functional products. Within reverse logistics processes, to a certain degree, it is also possible to secure entering production materials, while they take part in roles of acquisition logistics. By outsourcing logistics activities, companies can achieve

economies of scale and thereby reduce financial risks. The investment in logistics assets, the example of the platforms, necessarily requires a considerable amount of agent, which implies a high financial risk. The reduction in the costs of logistics outsourcing comes mainly from the best use of capacity and the best allocation of capital (Kalinzi, 2016).

3 Methodology and data

The main objective of the paper is based on the study of theoretical knowledge and the implementation of a questionnaire survey, to determine and analyse the utilisation of selected technologies and innovations in logistics of automotive enterprises in Slovakia.

The questionnaire survey was attended by 80 automotive enterprises operating in Slovakia. Large enterprises in the automotive industry obtained the largest share of 39.8%. Medium-sized enterprises dominated in the automotive industry with a share of 37.2%. Small enterprises were represented with a share of 23%.

Table 1: Structure enterprises by business size

Business size	Percentage
Small	23%
Medium-sized	37.2%
Large	39.8%

Source: *own processing*

The objective of the paper was achieved using several research methods. In the processing and comparison in the theoretical part of the paper, we used literature search, analysis and synthesis, induction and deduction, comparison and scientific abstraction. In the Results and discussion chapter, we used the query, sorting method and elimination method.

On the basis of the main objective of paper was determined and tested following hypothesis:

H₀: There is no statistically significant dependence on the level of significance $\alpha = 0.05$ between the use of cross-docking and the improvement of distribution logistics.

H₁: There is a statistically significant dependence on the level of significance $\alpha = 0.05$ between the use of cross-docking and the improvement of distribution logistics.

Calculated testing characteristics (Chi-square = 11.98) was compared with 95 percentile χ^2 – division with $(r - 1) \cdot (s - 1) = (3 - 1) \cdot (3 - 1) = 4$ degree of freedom $\chi^2_{0.95}(4) = 9.487729$.

Based on the hypothesis testing, we conclude that there is a statistically significant dependence on the level of significance $\alpha = 0.05$ between the use of cross-docking and the improvement of distribution logistics, thus accepting the H₁ hypothesis and rejecting the H₀ hypothesis.

4 Results and discussion

From the results of the survey, we would like to point out that enterprises operating in the automotive industry use new technologies and innovations in logistics with a share of 82%. Only 18% of automotive enterprises do not use new technologies and innovations in logistics. The reasons given were a lack of funds and a lack of qualified staff. Based on Table 2, we can see the percentages of the use of new technologies and innovations in logistics according to the size of automotive enterprises. Large enterprises use new technologies and innovations in logistics with a share of 77.8%. Medium-sized enterprises use technologies and innovations in logistics with a share of 16.6%. Small enterprises in the automotive industry use technologies and innovations with a share of 5.6%. New technologies and innovations in logistics are not used by small enterprises with a share of 72.6%. Large enterprises do not use technologies and innovations with only a share of 7.6%.

Table 2: Utilisation/non-utilisation of technologies and innovations

	Small enterprises	Medium-sized enterprises	Large enterprises	Total
Utilisation of technologies and innovations	5.6%	16.6%	77.8%	100 %
Non-utilisation of technologies and innovations	72.6%	19.8%	7.6%	100 %

Source: *own processing*

Based on the results of the questionnaire survey, automotive enterprises with the largest percentage of 65.8% use supply chain management. Respondents with share of 19.2% use cross-docking. The small enterprises use logistics outsourcing with share of 15%. In terms of the size of automotive enterprises, the use of selected technologies and innovations is different. Large enterprises use supply chain management with a share of 60.9%, cross-docking with a share of 53.2% and logistics outsourcing with a share of 41.8%. Medium-sized enterprises from the automotive industry use supply chain management with a share of 35.9%, cross-docking use with a share of 39.5% and logistics outsourcing with a share of 48.4%. Small enterprises from the automotive industry use supply chain management with a share of 3.2%, they use cross-docking with a share of 7.3% and logistics outsourcing with a share of 9.8%. The individual percentages are shown in Table 3.

Table 3: Technologies and innovations in logistics according to the business size

	Small enterprises	Medium-sized enterprises	Large enterprises	Total
Supply chain management	3.2%	35.9%	60.9%	100 %
Cross-docking	7.3%	39.5%	53.2%	100 %
Logistics outsourcing	9.8%	48.4%	41.8%	100 %

Source: *own processing*

Enterprises from the Slovak automotive industry that operate in production use supply chain management with a share of 78.6%. Enterprises providing services in automotive use supply chain management with a share of 13.2%. Trade enterprises use supply chain management with a share of 8.2%. Cross-docking achieved the largest percentage in trade (49.7%). In production, cross-docking has a share of 42.9% and in services it has a share of 7.4%. Logistics outsourcing is mainly used by production enterprises with a share of 68.8%. Enterprises providing services in automotive use logistics outsourcing with a share of 16.8%. Trade enterprises use logistics outsourcing with a share of 14.4%.

Table 4: Technologies and innovations in logistics according to business activities

	Production	Trade	Service	Total
Supply chain management	78.6%	8.2%	13.2%	100 %
Cross-docking	42.9%	49.7%	7.4%	100 %
Logistics outsourcing	68.8%	14.4%	16.8%	100 %

Source: *own processing*

Selected technologies and innovations in logistics of enterprises from the automotive industry were related according to business logistics fields. We can see from Table 5 that supply chain management is used in production logistics with a share of 62.3%. The use of logistics outsourcing also obtained a high percentage (60.8%) in this logistics. Cross-docking is used in production logistics with a share of 23.3%. The use of supply chain management dominates in procurement logistics with a share of 17.8%. Logistics outsourcing is used with a share of 11.2%. Automotive enterprises use cross-docking in procurement logistics with a share of 4.1%. In distribution logistics, the use of cross-docking with a share of 72.6% predominates. Logistics outsourcing is used by automotive enterprises with a share of 28% in distribution logistics. Supply chain management is the least used in distribution logistics with a share of 19.9%.

Table 5: Technologies and innovations in logistics according to business logistics fields

	Production logistics	Procurement logistics	Distribution logistics	Total
Supply chain management	62.3%	17.8%	19.9%	100 %
Cross-docking	23.3%	4.1%	72.6%	100 %
Logistics outsourcing	60.8%	11.2%	28%	100 %

Source: *own processing*

For respondents, we noted that the most common value (5) recorded supply chain management. Cross-docking reached a mode value 0. Logistics outsourcing achieved a value of mode 0. The highest value of the average (2.57) achieved supply chain management. Cross-docking achieved the smallest average value of 1.45. Supply chain management achieved a median value of 4. Logistics outsourcing obtained a median value of 1. Values are the most concentrated by supply chain management, the standard deviation reached value of 2.19. Values are the least concentrated by cross-docking, the standard deviation of this technology achieved value of 1.53.

Table 6: Descriptive statistics

	Mean	Median	Mode	Variance	Standard deviation
Supply chain management	2.57	4	5	4.80	2.19
Cross-docking	1.45	0	0	2.35	1.53
Logistics outsourcing	1.79	1	0	4.08	2.02

Source: *own processing*

The use of technologies and innovations in logistics also affects logistics processes. Table 7 shows the percentages for selected logistics processes. We can see from Table 7 that the use of technologies and innovations in automotive enterprises affects transport with the largest percentage (29%). Logistics processes also achieved high percentage values in inventory management (27%) and in customer service (23%). Material handling affects enterprises with a share of 14%. Enterprises operating in Slovakia in the automotive industry are influenced by packing with a share of 7%.

Table 7: Logistics processes

	Percentage
Customer service	23%
Inventory management	27%
Transport	29%
Material handling	14%
Packing	7%

Source: *own processing*

Table 8 summarizes the mean, median, mode, variance and standard deviation. Enterprises most often marked the value 5 in inventory management. Customer service achieved a mode value of 4. Material handling obtained a value of mode 3. Value of median 4 was reached in customer service. The median value (3) was reached in inventory management and material handling. Table 8 shows that values are the most concentrated by customer service. The standard deviation obtained value 1.96. Values are the least concentrated by packing, where the standard deviation obtained 0.95. Customer service achieved the maximum value of the average 3.06. Packing obtained the minimum value of average 1.93.

Table 8: Descriptive statistics

	Mean	Median	Mode	Variance	Standard deviation
Customer service	3.06	4	4	3.84	1.96
Inventory management	2.95	3	5	3.57	1.89
Transport	2.58	1	0	3.39	1.84
Material handling	2.36	3	3	2.76	1.66
Packing	1.93	0	2	1.10	0.95

Source: *own processing*

5 Conclusion

In Slovakia, automotive industry has the biggest representation on a market, representing „an engine“ of the Slovak economy for several years. Strength of automotive industry is reflected in the decreasing unemployment rate in Slovakia. The current news

regarding construction of new enterprises in Slovakia state that demand for qualified workforce in logistics keeps growing, as new businesses have not only their own logistics, but many of them utilise the growing network of logistics centres.

Technologies and innovations in logistics activities are situated in the middle of dynamic changes and enterprises must managed and followed them continuously during common daily routines. It has a significant impact on performance and effectiveness of production. World has changed dramatically in a relatively short time, and businesses focus on management of supplier chains. In approximately last three decades, since the phrase „management of supplier chain“ appeared for the first time, we have witnessed an important trend of globalised supplier chains, while activities which used to be performed internally are now ordered externally, being accompanied by a dramatic growth of changes in business environment, which creates higher level of uncertainty in demand and offer.

The results of the survey show that automotive enterprises in Slovakia use 82% of technologies and innovations in logistics. With large enterprises dominating with the share of 77.8%. Automotive enterprises with the largest percentage of 65.8% use supply chain management. The small enterprises use logistics outsourcing with the share of 15%. Enterprises from the automotive industry that operate in production use supply chain management with the share of 78.6%. Automotive enterprises operating in services use at least cross-docking with the share of 7.4%. The use of cross-docking predominates in the distribution logistics of automotive enterprises with the share of 72.6%. The small enterprises use cross-docking in procurement logistics with the share of 4.1%. The importance and position of distribution logistics and the use of cross-docking were also confirmed by the tested hypothesis. At the level of significance $\alpha = 0.05$ is a statistically significant dependence between the use of cross-docking and the improvement of distribution logistics. The use of technologies and innovations in automotive enterprises is influenced by transport by the largest percentage (29%). The small enterprises operating in Slovakia in the automotive industry are affected by packing with the share of 7%.

The proper functioning of small and medium-sized enterprises, which represent great potential, is important for the proper development of the economy, but their operation faces many pitfalls, which include, in particular, inadequate financial conditions for their development (Richnák, 2016f). Today's dynamic business environment brings with it a range of logistics technologies. Every enterprise has to realise that its competitive advantage in the market is not only lowering production costs and improving product quality, but also focusing on the employees themselves, so it is important to choose a logistics technology that not only increases productivity but also helps development of motivation and creativity of employees (Richnák, 2019g).

Literature:

1. APTE, M. U., VISWANATHAN, S.: Effective cross docking for improving distribution efficiencies. [online]. 2010, vol. 3, no. 3, pp. 291–302. *International Journal of Logistics Research and Applications*. ISSN 1469848. [viewed 2020-05-11]. Available from: <https://doi.org/10.1080/713682769>
2. CRANDALL, R. E., CRANDALL, W.: *How Management Programs Can Improve Performance Selecting and Implementing the Best Program for Your Organization*. Charlotte, North Carolina: Information Age Publishing, Inc. 2015. 575 p. ISBN 978-1-62396-980-6.
3. DUPAL, A., RICHNÁK, P.: Vybrané trendy a koncepcie v procesnej orientácii podnikovej logistiky. *Ekonomika a manažment: vedecký časopis Fakulty podnikového manažmentu Ekonomickej univerzity v Bratislave*. Bratislava: Fakulta podnikového manažmentu Ekonomickej univerzity v Bratislave, 2017, 14(3), 8-19. ISSN 2454-1028.
4. HANDFIELD, B. R., NICHOLS, L. E., Jr.: *Supply Chain Redesign: Transforming Supply Chains into Integrated Value*

- Systems*. 1st edition. New Jersey : FT Press, 2002. p. 400. ISBN 978-0768682212.
5. HEŘMAN, J., HEZINA, M., ZEMAN, K.: *Průmyslové inovace*. 1st Edition. Praha: Skripta VŠE, 2002. 122 p. ISBN 80-245-0434-0.
6. Kalinzi, Ch.: Outsourcing (Logistics) Services and Supply Chain Efficiency – A Critical Review of Outsourcing Function in Mukwano Group of Companies. [online]. 2016, pp. 1-22. *Journal of Outsourcing and Organizational Information Management*. ISSN 2155-4846. [viewed 2019-08-20]. Available from: <https://doi.org/10.5171/2016.937323>
7. LEŠČIŠIN, M.: *Organizácia a riadenie výroby priemyselných podnikov*. Bratislava : ALFA, 1979. 488 p. ISBN 63-557-85.
8. LI, Z., WEI, H., CHENG, H. S., CHONG, Ch. Ch.: A solution for cross-docking operations planning, scheduling, and coordination. [online]. 2012, vol. 5, no. 2, p. 111. *Journal of Service Science and Management*. ISSN 1940-9907. [viewed 2020-02-14]. Available from: <https://doi.org/10.4236/jssm.2012.52014>.
9. MOLNÁR, P.: *International Business I., Innovation management*. Vol. 2. Nitra: ForPress Nitrianske tlačiarne, 2014. 126 p. ISBN 978-80-89731-18-3.
10. RAJESH, R.: *Supply Chain Management for Retailing*. 1st Edition. New York: Tata McGraw Hill Education Private Limited, 2009. p. 444. ISBN 9780070145047.
11. RICHNÁK, P.: Globalization and its impact on the present concepts in company management. *Globalization and its socio-economic consequences. Part 2: proceedings: 15th International scientific conference: 7th-8th October 2015, Rajcke Teplice, Slovak Republic*. Zilina: University of Zilina, Faculty of operation and economics of transport and communications, Department of economics, 2015a, 608-616. ISBN 978-80-8154-145-2.
12. RICHNÁK, P.: Modern Logistics Technologies in the Conditions of Slovak Enterprises. *Current Problems of the Corporate Sector 2020: 17th International Scientific Conference*. Paris: Édition Diffusion Presse Sciences, 2020b, pp.1-12. ISSN 2261-2424.
13. RICHNÁK, P.: Nové smery rozvoja v logistike. *Journal of Innovations and Applied Statistics: vedecký internetový časopis*. Košice: Katedra hospodárskej informatiky a matematiky PHF EU, 2019c, 9(2), 95-103. ISSN 1338-5224.
14. RICHNÁK, P.: The Impact of Globalization on the Development of Modern Concepts in Business Logistics. *Manažment v teórii a praxi: online odborný časopis o nových trendoch v manažmente*. Košice: Katedra manažmentu PHF EU, 2018d, 14(1), 20-25. ISSN 1336-7137.
15. RICHNÁK, P.: Cross docking. *Vedecké state Katedry manažmentu výroby a logistiky 2014: zborník vedeckých stať*. Bratislava: Vydavateľstvo EKONÓM, 2014e, [1-7]. ISBN 978-80-225-3996-8.
16. RICHNÁK, P.: Klastre a klastrové iniciatívy ako nástroj zvyšovania konkurencieschopnosti podnikateľských subjektov. *Scientia Iuventa 2016: zborník príspevkov z medzinárodnej doktorandskej konferencie: Banská Bystrica, Slovensko, 21.4.2016*. Banská Bystrica: Belianum, 2016f, 428-436. ISBN 978-80-557-1084-6.
17. RICHNÁK, P.: Usage of Logistics Technologies in Slovak Enterprises. *LOGI – Scientific Journal on Transport and Logistics*. Warsaw: De Gruyter, 2019g, 10(2), 94-104. ISSN 2336-3037.
18. SHUKLA, R. K., GARG, D., AGARWAL, A.: Understanding of supply chain: a literature review. [online]. 2011, vol. 3, no. 3, pp. 2059–2072. *International Journal of Engineering Science and Technology*. ISSN 2215-0986. [viewed 2020-03-18]. Available from: http://homepages.stm.artin.edu/fac_staff/dconant/mba631/notes/mba631-supplychainmanagement.pdf
19. SINGH, K. R.: Analyzing the factors for VMI implementation: A framework. [online]. 2013, vol.14, no. 1, pp. 169–186. *Global Business Review*. ISSN 09730664. [viewed 2020-03-14]. Available from: <https://doi.org/10.1177/0972150912466476>
20. STANKOVSKÝ, P., CIBULKA, V.: Logistický outsourcing - zdroj zvyšovania konkurencieschopnosti podniku. In: Fórum

manažéra: teória a prax v riadení podniku. ISSN 1336-7773, 2011, no. 1, p. 42.

21. VAN BELLE, J., VALCKENAERS, P., CATTRYSSSE, D.: Cross-docking: State of the art. [online]. 2012, vol. 40, no. 6, pp. 827–846. *Omega journal, Elsevier*. ISSN 0305-0483. [viewed 2020-04-07]. Available from: <https://doi.org/10.1016/j.omega.2012.01.005>

22. VIS, F. A. I., ROODBERGEN, K. J.: Positioning of goods in a cross-docking environment. [online]. 2008, vol. 54, no. 3, pp. 677–689. *Computers & Industrial Engineering*. ISSN 0360-8352. [viewed 2020-03-18]. Available from: <https://doi.org/10.1016/j.cie.2007.10.004>

23. WANG, L., YEUNG, J. H. Y., ZHANG, M.: The impact of trust and contract on innovation performance: The moderating role of environmental uncertainty. [online]. 2011, vol. 134, no. 1, pp. 114-122. *International Journal of Production Economics*. ISSN 0925-5273. [viewed 2020-01-12]. Available from: <http://www.sciencedirect.com/science/article/pii/S0925527311002714>

Primary Paper Section: A

Secondary Paper Section: AE

CRIMINAL OFFENCES RELATED TO CORRUPTION IN THE SLOVAK REPUBLIC AND THE UNITED STATES OF AMERICA – COMPARISON STUDY

^aJOZEF ČENTÉŠ, ^bNATÁLIA HANGÁČOVÁ

Comenius University in Bratislava, Šafárikovo nám. č. 6,
P.O.BOX 313, 810 00 Bratislava, Slovakia
email: ^ajozef.centesh@flaw.uniba.sk,
^bhangacova.natalia@gmail.com

The present research was supported by the Slovak Research and Development Agency under contract no. APVV-19-0102 Efektívnosť prípravného konania - skúmanie, hodnotenie, kritériá a vplyv legislatívnych zmien/ The efficiency of pre-trial proceedings – research, evaluation, criteria and influence of legislative changes. The present research was supported also by the Grant for PhD. students and young scientists of the Comenius University no. UK/406/2020 Carousel fraud II.

Abstract: Corruption is a phenomenon which influences functioning of state, government, economy, society as a whole, including the private sector. Therefore, authors decided to focus on criminal offences related to corruption defined in criminal codes of the Slovak Republic and the United States of America. The aim of this article is to underline similarities and differences between these two jurisdictions. The Slovak Republic and the United States of America differ in many aspects, starting with history, economy and at last but not least both countries have different legal systems. The United States of America is a common law country, whereas the Slovak Republic is a continental law country. The United States of America is democratic country for over 100 years, on the other hand communism was present in the Slovak Republic until 1989.

Keywords: corruption, criminal responsibility

1 Introduction

Based on ideas incorporated in international documents regarding corruption, it is necessary to point out the negative social aspects of corruption. Corruption threatens the rule of law, democracy and human rights; undermines good governance, decency and social justice. It distorts competition; prevents economic development; threatens stability of democratic institutions and moral foundations of society. Corruption is able to undermine trust in government and breed public distrust. Corruption is not anymore, a national issue, but rather a transnational phenomenon that affects every civilized society and every economy. Corruption also leads to inequality where rich and powerful people have advantage over the rest of the population. Therefore, its prevention and control require international cooperation. In fact, rapid exchange of information and movement of funds are inherent at the global level. The European community is even more influenced by the dynamic and free movement of people, goods, capital and services. The Stockholm programme – an open and secure Europe serving and protecting citizens 2010/C115/01 (“Stockholm programme”) in section 4.4.5. states: “*The Union must reduce the number of opportunities available to organised crime as a result of a globalised economy, in particular during a crisis that is exacerbating the vulnerability of the financial system, and allocate appropriate resources to meet these challenges effectively.*”

For these reasons, an effective fight against corruption is not possible without a comprehensive and multidisciplinary approach. Corruption is often associated with other forms of crime, such as organized crime, which is linked to serious economic crime, including misappropriation of the European Union financial interests. It is also a well-known fact that bribery is a phenomenon widespread in international business operations, including trade and investment, and therefore raises serious moral and political concerns, undermines effective corporate governance, and distorts international competition conditions. Effective tool of combating corruption is undoubtedly the efficient national criminal law. National criminal law can broadly sanction corruption in its entirety, while responding to conventions that take into account international legal aspect of corruption. Leading international conventions regarding corruption are United Nations Convention against Corruption, The United Nations Declaration Against Corruption and Bribery in International Commercial Transactions, United Nations Convention against Transnational

Organized Crime and the Protocols, Inter-American Convention Against Corruption, OECD Convention on Combating Bribery of Foreign Public Officials in International Business Transactions and many others.

Anti-corruption efforts may be also observed from Transparency International activities. Transparency International ranks countries using corruption perception index. Corruption perception index is leading global indicator of public sector corruption. Index closely to 100 represents very clean country regarding corruption. Index near 0 means highly corrupted country. Transparency International ranked the United States of America (“USA” or “United States”) 22nd among 180 countries in 2018 with 71/100 index. In 2017 was index of the United States 75/100, in 2016 74/100 and in 2015 was the index 76/100. It seems that level of corruption in the USA fluctuate. The Slovak Republic is 57th out of 180 countries in the ranking. In 2018 was level of corruption in Slovakia 50/100, index was the same in 2017. During 2016 and 2015 data shows that Slovakia was less corrupted, when index of the Slovak Republic reached 51/100.

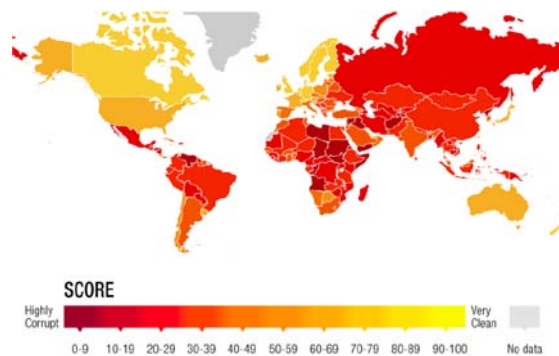


Table 1. Overview of Corruption Perception Index in 180 Countries Monitored by Transparency International in 2018 (Transparency International, 2019)

2 Legislation of the United States of America

Due to the fact that the United States of America is a common law country, we will refer to common law criminal offences at first. In general, common law recognized different criminal offences related to corruption. Firstly, *Official Misconduct in Office* is a corrupt behavior by government official while executing duties in his/her official responsibilities. The government official has to act in execution of his/her official responsibilities and with purposeful intent to violate his/her legal obligation. There are three main types of *Official Misconduct in Office*. *Malfeasance* which refers to a wrongful act, *Misfeasance* represents lawful act made in unlawful manner and *Nonfeasance* refers to failure to fulfil a duty to act. (Lippman, 2014) Criminal offence of *Official Misconduct in Office* is regulated by federal or/and state statutes. The objective behind this criminal offence is to prevent government officials from being influenced. Public officials may be influenced by gifts or money they receive not to perform their duties in public interest. Public officials shall follow law and set example for citizens.

Secondly, common law recognized crime of *Bribery*. Originally, was crime of bribery limited only to offering money or any item of value to judges for exchange of taking an official action. Later, the criminal offence was stretched to any individual offering a bribe to a judge and with time, to offering the bribe to judge or public official (Lippman, 2014). Nowadays, crime of bribery is described more broadly, in comparison to authentic common law. Crime of bribery will be elaborated further in detail below.

Thirdly, by the time, several states adopted laws criminalizing crime of commercial bribery. Illinois enacted criminal offence of *Commercial Bribery* in section 29A of the 720 Illinois criminal statute (“Illinois Criminal Code” or “720 ILCS 5”). Concept of commercial bribery rest in a fact that employee accepts money or thing of value from person other than his/her employer and uses his/her position in a way that outside individual benefits from it. The employee betrays trust of his/her employer.

Number of states adopted laws criminalizing bribery in sport. Crime of bribery in sport is also prosecuted under federal law in section 224 *Bribery in sporting contests* of the Title 18, United States Code (“U.S. Code”). New York criminalizes bribery in sport. Crime of *Sports bribing* is regulated in section 180.40 and *Sports bribe receiving* in section 180.45 of N.Y. Penal Law. Likewise, state of Illinois prosecutes bribery in sport in section 29 *Bribery in contests* of the 720 ILCS 5. Several states even prosecute, failure to report bribe in sport, e.g. state of Illinois recognizes the crime of *Failure to report offer of bribe* in section 29 (3) of the 720 ILCS 5.

Furthermore, the Foreign Corrupt Practices Act (“FCPA”) addresses the issue of *Bribery of Foreign Official*. According to the United States Department of Justice: “*The anti-bribery provisions of the FCPA prohibit the willful use of the mails or any means of instrumentality of interstate commerce corruptly in furtherance of any offer, payment, promise to pay, or authorization of the payment of money or anything of value to any person, while knowing that all or a portion of such money or thing of value will be offered, given or promised, directly or indirectly, to a foreign official to influence the foreign official in his or her official capacity, induce the foreign official to do or omit to do an act in violation of his or her lawful duty, or to secure any improper advantage in order to assist in obtaining or retaining business for or with, or directing business to, any person.*” (The United States Department of Justice, 2017) For better understanding, general awareness and knowledge of law is Foreign Corrupt Practices Act translated to 50 languages, including the Slovak language. There are ongoing debates if FCPA discourages US companies from investing abroad. (Graham & Stroup, 2015) Some people oppose FCPA because it puts American businesses at a comparative disadvantage or permits unethical forms of payment equivalent to bribery. (Seitzinger, 2016)

Also, the Constitution of the United States (“U.S. Constitution”) refers to the corruption in article II, section 4: “*The President, Vice President and all civil officers of the United States, shall be removed from office on impeachment for, and conviction of, Treason, Bribery, or other high crimes and misdemeanors*”. Officials shall act in public interest rather than in interest of individual for receiving unlawful benefit. On the other hand, individual shall not benefit from using officials for his/her own benefit. We find the respective provision of the U.S. Constitution appropriate. Sanction of removal from office is adequate for the highest-ranking public officials when impeached for and convicted of bribery and other crimes, due to the functions they represent. Namely, the President of the United States holds executive powers. Conviction of enumerated crimes, mainly bribery, hampers democratic values and undermine trust in justice. This provision aims at preventing this from occurring. In the U.S. Constitution there is much more similar provisions, e.g. article 1 section 9 cl. 8.

Article 107 of the Constitution of the Slovak Republic (“Slovak Constitution”) reads that the President of the Slovak Republic shall be criminally liable only for intentional violation of the constitution or for treason. The Slovak Constitution does not refer to crime of bribery and consequently to removal from the office. Article 107 of the Slovak constitution further states the process of filing an indictment against the President. The National Council of the Slovak Republic decide on the filing of the indictment against the President by a three-fifths majority of the votes of all members of the Parliament. The indictment is filed by the National Council of the Slovak Republic at the Constitutional Court of the Slovak Republic, which will decide

in plenary session. The condemning decision of the Constitutional Court of the Slovak Republic means the loss of the office of the President and disqualification to hold the office in the future. Similarly, Article 136 of the Slovak constitution states: “*The judge of the Constitutional Court cannot be prosecuted for decision-making in the performance of his/her office, even after his/her removal from the office.*” Article 148 (4) of the Slovak constitution further reads: “*Judges and lay judges cannot be prosecuted for decision-making, even after his/her removal from the office.*” Article 78 (1) of the Slovak constitution enacts similar framework for restriction of responsibility: “*The Member of the Parliament cannot be prosecuted for voting in the National Council of the Slovak Republic or in its committees, even after the expiry of his/her mandate.*” Likewise, article 78 (2) of the Slovak constitution states: “*The Member of the Parliament cannot be prosecuted for statements made in the National Council of the Slovak Republic or in its body in the performance of the office of the Member of the Parliament, even after the expiry of his/her mandate. The Member of the Parliament is subject to the disciplinary authority of the National Council of the Slovak Republic.*” It is clear, that the President of the Slovak Republic cannot be prosecuted for other crimes than intentional violation of the constitution or for treason. However, the judges of the Constitutional Court, judges and lay judges as well as the Members of the Parliament cannot be prosecuted for decision-making, voting in respective body or for statements made in the respective body. The above-mentioned provision of the Slovak constitution refers to substantial immunity, because these persons cannot be prosecuted for decision-making, voting or for statements made in the respective bodies, even after removal from the office. Such protection of Members of the Parliament, given the nature of the National Council as the supreme representative body of the Slovak Republic, Constitutional Court and courts being representative bodies of judicial branch of the Slovak Republic, can be considered appropriate and desirable for the proper government functioning. However, also procedural immunity from prosecution is granted to certain persons, e.g. the Members of the Parliament according to article 78 (4) of the Slovak constitution. If the Member of the Parliament was caught and detained in a criminal offence, the competent authority shall immediately notify the chairman of the National Council of the Slovak Republic and the chairman of the Mandate and Immunity Committee of the National Council of the Slovak Republic. If the Mandate and Immunity Committee of the National Council of the Slovak Republic does not give the subsequent consent to detention, the Member of the Parliament must be released immediately. Mandate of the Members of the Parliament according to section 81a (f) of the Slovak constitution ceases to exist on the date of validity of the judgement when he or she was sentenced for an intentional criminal offence; or was sentenced for a criminal offence and the court has not ruled the conditional suspension of imprisonment. Procedural immunity means that it is not possible to prosecute person while he or she holds an office, either at all or only with the consent of the competent authority. Nevertheless, the person may be prosecuted after removal from the office. Immunities are further regulated in section 8 (1) in connection with section 9 (1)b of the act no. 301/2005 Coll. (“Slovak criminal procedure code”).

Constitution has the role of the supreme law. Laws shall not contradict with provisions of constitution and rights and freedoms set in the constitution. The U.S. Constitution, as well as the Slovak Constitution, is source of all government powers, being divided into legislative, executive, and a judicial branch, with a system of checks and balances among the three branches. The U.S. Constitution provides important limitations on the government that protect the fundamental rights of U.S. citizens. Having provision regarding removal from office of certain high representatives on impeachment for, and conviction of bribery in constitution highlights the values of society, importance of eliminating bribery in public sector and strengthens the democracy principles. Constitutional system of USA is unique

and none of other advanced democratic countries¹ has inspired from it. (Robert A. Dahl, 2001, p 43) It is different in many aspects, starting from unequal representation to presidential system. Nevertheless, from our point of view, the Slovak Republic could get inspired at least by the article II, section 4 of the U.S. Constitution.

In the next chapter we will discuss illegal corrupt practices. However, in the United States of America there are many legal ways of exchanging money for favors in politics. Therefore, in 2011 Trevor Potter in consultation with political strategists, democracy reform leaders and constitutional attorneys drafted American Anti-Corruption Act which serves as a model legislation. This model legislation encourages fight against political bribery and aims at ending secret donors who fund political advertisements. It is a very brief statute which captures the essence of the matter. First city which approved this anti-corruption act was Tallahassee, Florida in 2014. In the United States of America there is also Modal Penal Code. It is worth consideration whether this approach of drafting model statutes would be applicable on the European Union level.

U.S. CODE

Generally, criminal offences of corruption are integrated among criminal offences against public administration and administration of justice. Criminal offences associated with corruption are regulated in chapter 11 *'Bribery, Graft, and Conflicts of Interest'* of the 18 United States Code, but not only in this chapter. Also, chapter 31, section 666 *Theft or bribery concerning programs receiving Federal funds* fall within corruption criminal offences. The list of criminal offences related to corruption is extensive in comparison to criminal offences enshrined in the act no. 300/2005 Coll. Criminal code of the Slovak Republic ("Slovak criminal code"). The U.S. Code describes great number of criminal offences related to corruption. For purpose of this article, we have selected only three criminal offences to make the comparison more detailed. Criminal offences regulated in section 201 and section 203 of the U.S. Code refer to corruption of public officials. The U.S. Code contains more criminal offences related to corruption of public officials, e.g. section 205 or section 210 of the U.S. Code. Further, we will focus on section 224 of the U.S. Code regarding sports bribery.

Regarding corruption of the highest-ranking public officials, we would like to draw attention to the case of the United States of America v. Rod Blagojevich and John Harris. Rod Blagojevich was politician, who served as 40th Governor of Illinois until his impeachment, conviction and removal from office in 2009. Rod Blagojevich convictions included seeking cash in exchange for an appointment to the U.S. Senate seat vacated by Barack Obama when he was elected president in 2008. On January 9, 2009 the Illinois House of Representatives voted to impeach Rod Blagojevich (votes: 114-1). On January 29, 2009 the Illinois Senate votes unanimously to remove Rod Blagojevich and to bar him from holding political office in Illinois again. He is now serving 14 years in federal prison, since in April 2018 the U.S. Supreme Court decided not to hear Rod Blagojevich appeal.

Rod Blagojevich and John Harris were convicted of violating sections 1341,1343, 1346 and 1349 of Title 18, United States Code. Count two rested in violation of sections 666(a)(1)(B) and (2) of Title 18, United States Code.

According to 720 ILCS 5 section 33-3(c) "*A public officer or employee or special government agent convicted of violating any provision of this Section forfeits his or her office or employment or position as a special government agent. In addition, he or she commits a Class 3 felony.*" Pursuant to criminal laws of the State of Illinois 720 ILCS 5 section 33-1(d) "*A person commits bribery when: he or she receives, retains or agrees to accept any*

property or personal advantage which he or she is not authorized by law to accept knowing that the property or personal advantage was promised or tendered with intent to cause him or her to influence the performance of any act related to the employment or function of any public officer, public employee, juror or witness." The court in its decision also stated that pursuant to Article VIII, Section 1(a) of the Constitution of the State of Illinois, public funds, property and credit shall be used only for public purposes.

During analysis of provision of both criminal codes we have noticed that sanctions set in the U.S. Code are significantly different to those set in the Slovak criminal code. The concept of sanctions also varies within the U.S. Code. In certain sections of the U.S. Code sanctions vary based on form of fault. Sanctions depends on whether criminal offences are concluded willfully or not. Willful engagement in criminal offence of *Compensation to Members of Congress, officers, and others in matters affecting the Government* would be sanctioned by imprisonment not exceeding 5 years or fine or combination of both, otherwise the perpetrator would be punished by imprisonment not exceeding one year or fine or combination of both. Besides, according to section 216 of the U.S. Code, person engaging in conduct constituting the offence under sections 203, 204, 205, 207, 208, or 209 shall be subject to civil penalty not exceeding \$50,000 for each violation or the amount of compensation which the person received or offered for the prohibited conduct, whichever amount is greater. In addition, district court may issue an order prohibiting person from engaging in such conduct (criminal offences set in sections 203, 204, 205, 207, 208, or 209). Section 203 of the U.S. Code refers to sanctions set in section 216. However, some provisions of the U.S. Code contain sanctions directly in its text. Conduct prohibited under section 201 (b) of the U.S. Code shall be punished by fine or imprisonment not exceeding fifteen years, or both. Additionally, person may be disqualified from holding any office of honor, trust, or profit under the United States. Perpetrator committing an offence under section 201 (c) of the U.S. Code shall be punished by fine or imprisoned for not more than two years, or both.

The Slovak criminal code recognizes wide range of sanctions. It offers sanctions such as imprisonment, fine, home imprisonment, compulsory work, forfeiture of thing, forfeiture of property, prohibition of certain activity, prohibition of residence, prohibition to participate in public undertakings, expulsion, loss of honorary titles and honors, loss of military and other rank. The Slovak criminal law does not recognize penalty of removal from office or discrimination from holding an office in future. Only two of the above-mentioned are applicable to the criminal offences of corruption. Corruption criminal offences are prosecuted by the most severe penalty, penalty of imprisonment or alternatively, by forfeiture of property. The penalty of forfeiture of property is only applicable to selected criminal offences. When sentencing perpetrator for committing crime of Receiving a bribe under section 328 (2) of the Slovak criminal code the court may order forfeiture of property according to section 58 (2) of the Slovak criminal code. The only condition is that the offender has acquired assets at least to a significant extent (exceeding EUR 26,600) by criminal activity or from proceeds originating in crime. Also, when sentencing the perpetrator for criminal offence of Receiving a bribe under section 328 (3) or 329 (3) or criminal offence of Bribery under section 334 (2) of the Slovak criminal code, the court may order punishment of forfeiture of property according to 58 (3) of the Slovak criminal code, hence, without limitation to origin of money.

In the Slovak Republic, it is possible to put to use the institute of *Effective regret*. Effective regret may be used only in connection to corruption criminal offences regulated under section 332 or 333 and 336 (2) of the Slovak criminal code. The perpetrator will not be prosecuted for these criminal offences (crime of Bribery and Indirect corruption) if the perpetrator gave or promised the bribe only because he or she was asked to do so and he or she voluntarily without delay notified the law enforcement authority or police corps; the soldier may make this

¹ Advanced democratic countries are countries steadily democratic at least since 1950 (e.g. United Kingdom, Switzerland, Sweden, Norway, Finland, Germany, Israel, Austria, Belgium, Australia, France, Italy, Japan and 8 other countries).

announcement also to his superior or service body; the person serving a custodial sentence or in pretrial detention may notify the member of the Prison and Judicial Corps. Effective regret promotes *ultima ratio* principle of criminal law. The content of the notification must be specific and complete. In particular, it has to include circumstances describing the act of giving or promising a bribe. (Čentěš et al., 2006) The term “voluntary” was precisely determined by law practice. Voluntary means that the action was taken based on perpetrator’s own will and free choice, not under pressure of impending prosecution, or knowing that the offence committed has been revealed (R 56/1999). In another case, it was decided that term voluntary refers to action of perpetrator when he or she acts on his/her own initiative, before his/her crime has been discovered or announced (R 2/1965). Therefore, “voluntarily” means that the perpetrator was not forced to announce his/her illegal action, did not announce it because he or she was afraid of being uncovered, but announced illegal action freely based on his/her belief, without constraints. Problematic, in connection to effective regret is the term “without delay”. There is no jurisprudence defining the exact time interval, usually it is referred to as immediate action. The aim of effective regret is to prevent or inhibit the harmful effect of criminal behavior on society. If bribery was announced, law enforcement authorities may take action and held person asking for a bribe criminally responsible.

Another fact observed is that the U.S. Code is very strict in defining terms. For illustration, title 1, chapter 1, section 8a reads: “[...] the words “person”, “human being”, “child”, and “individual”, shall include every infant member of the species *homo sapiens* who is born alive at any stage of development.” Title 1, chapter 1, section 8b further explains term “born alive”. For proper understanding of the code and realization of legality principle, it is necessary to define key terms in the statute. Nevertheless, we think that not defining certain terms would not hamper the principle of legality. There is a lot of topics which are widely debated in the United States of America and not in the Slovak Republic. One of them is gender identity and correct reference to singular and plural. Therefore, title 1, chapter 1, section 1 of the U.S. Code reads: „words importing the singular include and apply to several persons, parties, or things; words importing the plural include the singular; words importing the masculine gender include the feminine as well“. Statutes have to reflect on history and up-to-date topics in the respective countries. Yet, we consider some terms not necessary to be defined. The Slovak criminal code lacks definition clarifying gender identification or reference to singular or plural. From our point of view, it is not necessary to incorporate similar definition into the Slovak criminal code.

It is essential to point out that title 1, chapter 1, section 1 states that the U.S. Code is also applicable to legal persons as well as individuals. Title 1, chapter 1, section 1 of U.S. Code reads: “[...] the words “person” and “whoever” include corporations, companies, associations, firms, partnerships, societies, and joint stock companies, as well as individuals”. On the contrary, in the Slovak Republic, there is separate law regulating criminal responsibility of legal entities. Act no. 91/2016 Coll. (“Act on criminal liability of legal persons”) contains, in its section 3, exhaustive list of criminal offences for which legal entity may be held criminally liable. Section 3 of the Act on criminal liability of legal persons refers to the Slovak criminal code. Only the Slovak criminal code describes criminal offences. The Slovak criminal code and the Slovak criminal procedural code act supplementary to the Act on criminal liability of legal persons. In connection to corruption, legal entities may be prosecuted for crimes regulated in sections 328 – 330 and 332 – 334 as well as indirect corruption under section 336 of the Slovak criminal code. Legal entities cannot be prosecuted for crimes which are not listed in section 3 of the Act on criminal liability of legal persons.

Section 201 of the U.S. Code

Section 201 (b)(1) of the U.S. Code *Bribery of public officials and witnesses* describes direct and indirect active corruption,

whereas section 201 (b)(2) of the U.S. Code describes direct and indirect passive corruption. Section 201 (b)(1) of the U.S. Code describe action when person directly or indirectly corruptly gives, offers or promises anything of value to any public official or person who has been selected to be a public official, or offers or promises any public official or any person who has been selected to be a public official to give anything of value to any other person or entity. This conduct must be accompanied with intent to either influence any official act, or to influence such public official or any person who has been selected to be a public official to commit or aid in committing, or collude in, or allow, any fraud, or make opportunity for the commission of any fraud, on the United States, or to induce such public official or any person who has been selected to be a public official to do or omit to do any act in violation of the lawful duty of such official or person.

Section 201 (b)(2) of the U.S. Code refers to directly or indirectly corruptly demanding, seeking, receiving, accepting, or agreeing to receive or accepting anything of value personally or for any other person or entity. This section has a specific subject. Subject to this offence can be only the public official or person selected to be a public official who fulfil the *actus reus*. Perpetrator has to fulfil *actus reus* in return for either being influenced in the performance of any official act, or being influenced to commit or aid in committing, or to collude in, or allow, any fraud, or make opportunity for the commission of any fraud, on the United States, or being induced to do or omit to do any act in violation of the official duty of such official or person. Terms used in this section are explained in detail in section 201 (a) of the U.S. Code.

Section 201 (b)(3) of the U.S. Code refers to direct and indirect active corruption with intent to influence the testimony under oath or affirmation of such person as a witness upon a trial, hearing, or other proceeding, before any court, any committee of either House or both Houses of Congress, or any agency, commission, or officer authorized by the laws of the United States to hear evidence or take testimony, or with intent to influence such person to absent himself therefrom. This section protects the administration of justice and provides protection against non-occurrence of witness and false statement which obstruct the justice. Object of protection under section 201 (b)(3) of the U.S. Code is the witness. In the Slovak criminal code there is no special provision related to influencing witnesses by bribery. However, such *actus reus* could be subsumed under the criminal offence of *Receiving a bribe* under section 328 (1) of the Slovak criminal code or criminal offence of *Bribery* under section 332 (1) of the Slovak criminal code. Section 332 (1) of the Slovak criminal code concern active corruption and section 328 (1) of the Slovak criminal code describes passive corruption. We hold this opinion based on the fact that above-mentioned sections of the Slovak criminal code are based on giving or receiving a bribe in order to influence the person to act or omit to act in breach of duties arising from his/her status. Obligations arising from status are not only obligations imposed by law, but also those that are based on law, or employment contract. Thus, violations of obligations also include violation of obligation of witness to give true statement. (Čentěš et al., 2013) Additionally, both jurisdictions, the United States of America and the Slovak Republic, recognize the crime of *Perjury*. According to section 127 (1) of the Slovak criminal procedure code everyone is obliged to appear at the summons of law enforcement agencies and court, and to testify as witnesses about what is known to him/her about the criminal offense, perpetrator, or circumstances relevant to the criminal proceedings. Additionally, according to 131 (1) of the Slovak criminal procedure code the witness must always be instructed that he or she is obliged to tell the truth, not to conceal anything, and about the criminal consequences of false testimony. The exceptions from this obligation are set in section 129 and 130 of the Slovak criminal procedure code.

Section 201 (b)(4) of the U.S. Code regulates comparable situations as section 201 (b)(3) of the U.S. Code, except for a fact that this section refers to passive corruption. Therefore,

actus reus rest in directly or indirectly, corruptly demanding, seeking, receiving, accepting, or agreeing to receive or accept anything of value personally or for any other person or entity. The thing of value is exchanged for the fact that witness is influenced in testimony under oath or affirmation as a witness upon any such trial, hearing, or other proceedings, or for absenting there from.

Sections 201 (b) (1 - 4) of the U.S. Code are subject to uniform sentence range. Perpetrator may be sentenced to not more than fifteen years in prison, or fine, or both. Perpetrator may be also disqualified from holding any office of honor, trust, or profit under the United States. In terms of fine the value of thing given is determining. Person may be sentenced to fine in an amount not exceeding three times the monetary equivalent of value of thing given or received.

Section 201 (c)(1)(A) of the U.S. Code refers to anyone (i.e. any individual as well as corporations, companies, associations, firms, partnerships, societies, and joint stock companies) who directly or indirectly gives, offers, or promises anything of value to any public official, former public official, or person selected to be a public official, for or because of any official act performed or to be performed by such public official, former public official, or person selected to be a public official, otherwise than as provided by law for the proper discharge of official duty.

Section 201 (c)(1)(B) of the U.S. Code refers to specific subject. Only public official, former public official, or person selected to be a public official may be held criminally responsible under section 201 (c)(1)(B). This subject, otherwise than as provided by law, for the proper discharge of official duty, directly or indirectly demands, seeks, receives, accepts, or agrees to receive or accept anything of value personally for or because of any official act performed or to be performed by such official or person.

Section 201 (d) of the U.S. Code refers to remuneration of witnesses for time lost in attendance of trial, hearing, or any other proceeding, including reasonable cost of travel, and witness fees provided by law. At the same time, this section regulates remuneration of experts for time spend in the preparation of expert opinion, and in appearing and testifying. These payments cannot be considered as giving or receiving thing of value according to section 201 (b)(3) and (4) and 201 (c)(2) and (3) of the U.S. Code.

Section 203 of the U.S. Code

Section 203 of the U.S. Code describes the crime of *Compensation to Members of Congress, officers, and others in matters affecting the Government*. This criminal offence contains specification that perpetrator is criminally liable when described behavior occurs otherwise than as provided by law for the proper discharge of his/her official duties. Section 203 of the U.S. Code prosecutes both, direct and indirect, active and passive corruption. In the Slovak criminal code active and passive corruption are regulated in separate sections. This makes the orientation in criminal offences of corruption more complicated. Corruption criminal offences incorporated in the Slovak criminal code are written in complicated and unclear manner which causes confusion. On April 17. 2019 the Slovak government introduced new amendment to the Slovak criminal code and the Slovak criminal procedural code. However, it does not address the problematics of corruption criminal offences. It rather introduces new criminal offence of *Falsifying and making false medical documentation* which is a very up-to-date topic in Slovakia. More than 60 doctors and medical personnel were suspected of fraud connected to falsifying the medical evidence and prescribing medications which patients never received. In total, police officers summoned more than 1 500 persons in this case. New amendment also intends to broaden already existing criminal offence of *Unauthorized production of alcohol*. The amendment broadens criminal liability and proposes to criminalize unauthorized production of tobacco and tobacco

products too, introducing the criminal offence of *Unauthorized production of alcohol, tobacco and tobacco products*. The amendment did not pass yet. All interested parties will comment on it, submit remarks. It will take time until all parties reach a consensus on the text of new criminal offences and other proposed changes.

Section 203 of the U.S. Code refers to the highest-ranking public officials and representatives of the federal government. Section 203 of the U.S. Code is more concrete than section 201 and refers to different subjects in comparison to section 201 of the U.S. Code. Under section 203 (a)(1) is criminally liable perpetrator who directly or indirectly demands, seeks, receives, accepts, or agrees to receive or accept any compensation for any representational services, as agent or attorney or otherwise, rendered or to be rendered either personally or by another. Section 203 (a)(1) describes passive corruption practices.

Section 203 (a)(1)(A) of the U.S. Code apply to Member of Congress, Member of Congress Elect, Delegate, Delegate Elect, Resident Commissioner, or Resident Commissioner Elect. Criminally liable may be only persons holding exhaustively enumerated positions.

Section 203 (a)(1)(B) of the U.S. Code refers to officer or employee or Federal judge of the United States in the executive, legislative, or judicial branch of the Government, or in any agency of the United States. Section 203 (a)(1)(A) and (B) of the U.S. Code furthermore contains clarification of actions. The compensation must be demanded, sought, received, accepted, or agreed to accept for the purpose stated in section 203 (a)(1) of the U.S. Code in relation to any proceeding, application, request for a ruling or other determination, contract, claim, controversy, charge, accusation, arrest, or other particular matter in which the United States is a party or has a direct and substantial interest, before any department, agency, court, court-martial, officer, or any civil, military, or naval commission. We find this enumeration too broad. We do not understand reason of such a broad definition. By the same token, making distinction between section 203 (a)(1)(A) and 203 (a)(1)(B) of the U.S. Code does not make a difference when these actions are sanctioned in a same way. The aim could be to make clear difference between subjects of this criminal offence.

Section 203 (a)(2) of the U.S. Code sanctions direct and indirect active corruption and imposes higher standard for the form of fault. *Actus reus* must be committed "knowingly". Knowingly means that the person is aware that the nature of his/her conduct or the attendant circumstances set in elements of crime exist or that his/her conduct is of that nature and he or she is aware that it is practically certain that his/her conduct will cause a result described in elements of crime. Secondly, criminally liable shall be any person, not only e.g. Member of Congress or Delegate, as stated in section 203 (a)(1) of the U.S. Code. Thirdly, this section restricts to whom it is illegal to give, promise or offer any compensation for any representational services rendered or to be rendered. The person shall be criminally liable under section 203 (a)(2) of the U.S. Code if he or she gave, promised, or offered compensation to person who is or at the time when the compensation was given, promised, or offered was Member Elect, Delegate, Delegate Elect, Commissioner, Commissioner Elect, Federal judge, officer, or employee. According to section 202 (c) of the U.S. Code the term "employee" shall not include Member of Congress, the President, the Vice President, or a Federal judge.

Section 203 (b)(1) of the U.S. Code describes direct and indirect passive corruption. Criminal responsibility for this offence is restricted to officers or employees of the District of Columbia who demands, seeks, receives, accepts, or agrees to receive or accept any compensation for any representational services, as agent or attorney or otherwise, rendered or to be rendered either personally or by another in relation to any proceeding, application, request for a ruling or other determination, contract, claim, controversy, charge, accusation, arrest, or other particular matter in which the District of Columbia is a party or has a direct

and substantial interest, before any department, agency, court, officer, or commission. Whereas section 203 (b)(2) of the U.S. Code describes direct and indirect active corruption of giving, promising, or offering any compensation for any representational services rendered or to be rendered to the specific person at a time when such person is or was an officer or employee of the District of Columbia. For perpetrator to be criminally liable, it is required that he or she committed crime described in section 203 (b)(2) of the U.S. Code knowingly. From the distinction it is clear that the District of Columbia has a special status.

Section 203 (c) of the U.S. Code contains restrictions of criminal liability of special Government employee under section 203 (a) and (b) of the U.S. Code. The special Government employee is defined in section 202 (a) of the U.S. Code. Moreover, section 203 (d) and (e) of the U.S. Code enumerates exceptions from criminal responsibility for above-mentioned criminal behaviors applicable to officer or employee, and special Government employee. Section 203 (f) of the U.S. Code reads that nothing in section 203 shall prevent an individual from giving testimony under oath or from making statements required to be made under penalty of perjury.

Section 224 of the U.S. Code

Section 224 (a) of the U.S. Code describes *actus reus* resting in carrying into effect, attempting to carry into effect, or conspiring with any other person to carry into effect any scheme in commerce to influence, in any way, by bribery any sporting contest. Person is criminally liable when *actus reus* is fulfilled with knowledge that the purpose of such scheme is to influence the contest by bribery.

When we compare the criminal offence of Bribery of public officials and witnesses and criminal offence of Compensation to Members of Congress, officers, and others in matters affecting the Government and criminal offence of Bribery in sporting contests, each of them uses different terms. Bribery in sporting contests refers to term “*bribe*”, whereas Bribery of public officials and witnesses refers to “*anything of value*” and Compensation to Members of Congress, officers, and others in matters affecting the Government uses term “*compensation*”. Also, the FCPA refers to term “*anything of value*”. Each of these crimes belongs to group of criminal offences related to corruption. Single term used throughout the criminal offences of corruption would be more consistent. Using different terms may cause confusion in orientation in the U.S. Code. Eventually, it may hamper principle of legality.

The term “*sporting contest*” refers to contest in any sport which must be publicly announced before its occurrence. It is not determining if the contest takes place between individuals or teams of contestants, nor if they are professionals or amateurs. From this definition it is clear that the aim is to prevent persons from profiting on in advance agreed deals.

The Slovak criminal code does not contain definition of contest in connection to criminal offence of *Sports corruption*. Commentaries refer to special law, section 3 g) of the act no. 440/2015 Coll. on sports. The criminal offence of Sports corruption is newly established criminal offence in the Slovak criminal code.

Section 224 (b) of the U.S. Code underlines the fact that perpetrator may be held criminally liable for criminal offence regulated in federal statute and state statute at the same time. The section reads: “*This section shall not be construed as indicating an intent on the part of Congress to occupy the field in which this section operates to the exclusion of a law of any State, territory, Commonwealth, or possession of the United States, and no law of any State, territory, Commonwealth, or possession of the United States, which would be valid in the absence of the section shall be declared invalid, and no local authorities shall be deprived of any jurisdiction over any offense over which they would have jurisdiction in the absence of this section.*” In the United States of America there

exists concept of *Dual sovereignty*. States governments and federal government are separate sovereigns. Person can be prosecuted for the same criminal offence according to federal law and state law. The federal and state governments may both prosecute offender for the same criminal conduct, if the behavior constitutes criminal offence under federal as well as states laws. Concept of dual sovereignty allows prosecution on both levels, without violating the constitutional protection. Double jeopardy is a basic principle of the criminal proceedings, also incorporated in the Fifth Amendment to the United States Constitution. In December 2018 liberal and conservative judges of the U.S. Supreme Court appeared to discuss the concept of dual sovereignty. After the debate *status quo* was maintained. Principle of dual sovereignty may be demonstrated on case of Roberto Miramontes Roman, who was convicted of murder of on-duty county sheriff’s deputy. Roberto Miramontes Roman was acquitted in proceedings before state court of Utah. However, the U.S. government charged Roman for the same crime, since the murder constitute criminal offence under state as well as federal law.

3 Legislation of the Slovak Republic

Provisions on corruption, were incorporated into the Slovak criminal code in order to fulfill obligations of the Slovak Republic under international treaties and documents. In particular, obligations arising from European union membership (e.g. 1997 Convention on fighting corruption involving officials of the European union or officials of Member States and the 2003 Framework Decision on combating corruption in the private sector), membership in Council of Europe (e.g. Council of Europe Criminal Law Convention on Corruption) including United Nations and OECD. The Treaty on the Functioning of the European Union (“TFEU”) establishes limits of the European Union in the area of corruption. Article 83 (1) TFEU states “*The European Parliament and the Council may, by means of directives adopted in accordance with the ordinary legislative procedure, establish minimum rules concerning the definition of criminal offences and sanctions in the areas of particularly serious crime with a cross-border dimension resulting from the nature or impact of such offences or from a special need to combat them on a common basis. These areas of crime are the following: terrorism, trafficking in human beings and sexual exploitation of women and children, illicit drug trafficking, illicit arms trafficking, money laundering, corruption, counterfeiting of means of payment, computer crime and organised crime*”.

According to European Commission public opinion, 60% of European Union businesses agree with the statement that bribery and the use of connections is often the easiest way to obtain certain public services. Moreover 74% of businesses agree that favoritism and corruption hamper business competition. We observe a slight increase from 2015 when 68% of businesses agreed with this statement. (European Commission, Businesses’ attitudes towards corruption in the EU, 2017).

In the Slovak Republic, criminal offences associated with corruption are incorporated in chapter 8 ‘*Criminal Offences Against Public Order*’ of the third part named ‘*Corruption*’ of the act no. 300/2005 Coll. Criminal code of the Slovak Republic. This part of the Slovak criminal code contains 5 criminal offences described in sections 328 to 336b of the Slovak criminal code. Criminal offence of *Receiving a bribe* is regulated in sections 328 – 330 of the Slovak criminal code. Criminal offence of *Bribery* is regulated in sections 332 – 334 of the Slovak criminal code. Section 336 regulates *Indirect corruption*; section 336a regulates *Election corruption* and section 336b of the Slovak criminal code governs *Sports corruption*.

Bribe is essential term when it comes to corruption legislation in the Slovak Republic. Bribe is defined in section 131 (3) of the Slovak criminal code as thing or any other performance of material or non-material nature to which there is no legal claim. Judicial practice further specifies bribe as an unjustified advantage that bribed or with his/her consent other person receives. Unjustified advantage rests in direct property benefit.

e.g. financial or material. Bribe may be also an advantage of another kind, e.g. reciprocal service. According to provisions of the Slovak criminal code, the amount of bribe is not determining. Law does not set any value limit for bribe. The amount of bribe needs to be assessed in relation to imposing heavier penalties. In principle, no bribes, even of negligible value, can be tolerated in the area of state governance and administration. Contrary, the value of thing acquired by criminal activity is crucial in connection to number of criminal offences regulated in the Slovak criminal code, such as larceny, embezzlement, fraud, etc. In case of larceny, taking and carrying away a thing with intent to permanently deprive someone of the property which is less than EUR 266 in value, does not constitute a criminal offence. Section 212 of the Slovak criminal code regulating the crime of larceny states that only the act of taking and carrying away a thing and causing damage of more than EUR 266 is a criminal offence. Taking and carrying away a thing of lesser value will qualify as administrative wrongdoing. The perpetrator will be held liable according to administrative laws, but not criminal statutes. However, bribery does not occur in connection to operation of certain services, in particular restaurant services, as expression of customer's satisfaction. (Čentéš et al., 2006)

Criminal offence of *Receiving a bribe* is regulated in section 328 (1) of the Slovak criminal code. This crime refers to behavior when perpetrator directly or using third person (indirectly) accepts, asks for or agrees to receive bribe for himself or for another person, in order to act or omit action in a way that he or she violates his/her duties arising from his/her employment, occupation, status or function. The perpetrator may be sentenced to 2 - 5 years in prison for this type of behavior. Criminal offence described in section 328 (1) of the Slovak criminal code is minor crime². Sections 328 (2) and (3) of the Slovak criminal code are felonies³ and they represent qualified facts of criminal offence of *Receiving a bribe* which are punished with heavier penalty. Qualified fact of section 328 (2) is committing a crime in more serious manner⁴ and qualified fact of section 328 (3) is committing a crime in greater amount⁵. Under section 328 (2) the perpetrator may be sentenced to 3 - 8 years in prison and under section 328 (3) of the Slovak criminal code to 7 - 12 years in prison.

Section 329 (1) of the Slovak criminal code refers to procurement of things of general interest. According to section 131 (1) of the Slovak criminal code, the term "*thing of general interest*" refers to interest which goes beyond personal rights and interests of an individual. It is an interest which is important for the entire society. Procurement of things of general interest represents activities which are related to accomplishment of all kinds of tasks regarding matters of general interest. Procurement of things of general interest includes not only decision-making process, but also other activities which satisfy material, social, health, cultural and other needs of individuals and legal entities. It represents proper and impartial fulfilment of all necessary tasks which are demanded by entire society or particular social group. Criminal offence of *Receiving a bribe* according to section 329 (1) of the Slovak criminal code does not cover activities of citizens who are acting exclusively within their personal rights and interests. In order to establish criminal liability, there has to be *nexus* between bribe and procurement of things of general interest. Only person who is in charge of

procurement of things of general interest, regardless if the bribe or other unjustified advantage flows to him or her; or by his/her involvement to the third party, may be criminally liable under section 329 (1) of the Slovak criminal code. (Čentéš et al., 2013) Under section 329 (1) of the Slovak criminal code criminally liable is perpetrator who in connection to procurement of things of general interest directly or using another person accepts, asks for or agrees to receive bribe for himself or for another person. This criminal offence is a felony. Facts which activate heavier penalties are committing a crime as public official⁶ (section 329 (2) of the Slovak criminal code) or committing a crime in greater amount (section 329 (3) of the Slovak criminal code). Section 329 (2) of the Slovak criminal code is a felony and section 329 (3) of the Slovak criminal code qualifies as particularly serious felony⁷. Sanctions imposed on this type of behavior reflect that elimination of corruption in connection to public procurement is a high priority. Sanctions also demonstrate values of society and importance of their protection.

Definition of thing of general interest set in the Slovak criminal code is rather broader, which gives criminal law power to prosecute wide range of behaviors connected to procurement of things of general interest. It seems that society represented by state consider public procurement a vulnerable area and therefore want to have tools to prosecute wider range of behaviors. Also, the Stockholm programme in its section 4.4.5. refers to public procurement as vulnerable area in the European Union: "*The European Council calls upon the Member States and, where appropriate, the Commission to: develop indicators, on the basis of existing systems and common criteria, to measure efforts in the fight against corruption, in particular in the areas of the acquis (public procurement, financial control, etc.) and to develop a comprehensive anti-corruption policy, in close cooperation with the Council of Europe Group of States against Corruption (GRECO).*"

Section 330 (1) of the Slovak criminal code refers to *Receiving a bribe* by foreign public official⁸. Foreign public official directly or using another person accepts, asks for or agrees to receive bribe for himself or for another person in connection to execution of his/her official duties or in connection to execution of his/her function with intent to gain or maintain unlawful benefit. Section 330 (1) of the Slovak criminal code is a felony. Section 330 (2) of the Slovak criminal code imposes heavier penalty of 10 - 15 years in prison if such an act is committed in greater amount. Therefore, this criminal offence qualifies as particularly serious felony.

All criminal offences enshrined in chapter 8, part three of the Slovak criminal code are intentional criminal offences. Intentional form of fault is required. The intent itself is not sufficient to establish criminal responsibility for criminal offence of *Receiving a bribe* by foreign public official according to section 330 (1) (2) of the Slovak criminal code. The criminal motive⁹ is also required. The criminal motive is expressed with words "*with intent to*". The offender has to have a special intent. He commits a crime with intent to (criminal motive) gain or maintain unlawful benefit for himself or another person. The same applies to criminal offence of *Bribery* according to section

² The definition of minor crime (also known as misdemeanour) is set out in section 10 of the Slovak criminal code. Misdemeanour is any criminal offence committed from negligence or intentional criminal offence, for which the Slovak criminal code provides, in its special part, penalty of imprisonment with upper threshold not exceeding five years. Offences committed from negligence are not subject to a limitation in terms of the penalty threshold.

³ The definition of felony is set out in § 11 of the Slovak criminal code. Felony is an intentional criminal offence, for which the Slovak criminal code provides, in its special part, penalty of imprisonment with upper threshold exceeding five years. Felony also occurs if basic qualified fact of criminal offence is a misdemeanour, but special qualified fact of this criminal offence – misdemeanour – committed intentionally has upper threshold of penalty of imprisonment exceeding five years.

⁴ Committing crime in more serious manner means e.g. committing a crime with a gun, for longer period of time or by organized group, according to section 138 of the Slovak criminal code.

⁵ Greater amount is amount exceeding EUR 133,000 according to section 125 (1) of the Slovak criminal code.

⁶ Public official is a legal term defined in section 128 (1) of the Slovak criminal code. Section 128 (1) of the Slovak criminal code state exhaustive list of public officials, e.g. President of the Slovak Republic, Member of the European Parliament, Member of the Government, Judge of the Constitutional Court of the Slovak Republic, Judge, Prosecutor or other person holding office in the public authority, member of the armed forces, mayor and many others.

⁷ The category of felony also includes a particularly serious felony, for which the Slovak criminal code, in its special part, provides penalty of imprisonment with lower threshold of at least ten years.

⁸ Public foreign official is a legal term defined in section 128 (2) of the Slovak criminal code. Section 128 (2) of the Slovak criminal code state exhaustive list of public foreign officials, e.g. person acting in a legislative body, executive body, judicial authority or arbitration body, or in another public authority of a foreign state, including the head of state, or person acting, employed or working in an international organization or transnational organization established by states or other bodies of public international law, in its body or institution, or empowered to act on their behalf, etc.

⁹ The criminal motive is, in general, an optional feature of the subjective aspect of the offence (i.e. form of fault), but when it is directly expressed in the qualified fact of criminal offence it becomes a compulsory feature of the offence.

334 (1) (2) of the Slovak criminal code. The offender has to have a special intent to gain or maintain unlawful benefit for himself or another person. Criminal motive has its special importance in the Slovak criminal code.

The Slovak criminal code refer to criminal motive. Concept of law in the United States refers to special intent. Some commentators refer to criminal offences which require special intent as crimes of cause and result, because person possesses specific intent to accomplish specific result. Also, concept of law in the United States differentiates between intent and motive. Motive underlines the reason why person committed the act. Motive may be considered by judge when sentencing the perpetrator. However, motive is not considered in determining whether person possessed criminal intent or not. (Lippman, 2014)

Criminal offence of Receiving a bribe according to section 328 (1) of the Slovak criminal code may be committed by any person who violates his/her duties arising from his/her employment, occupation, status or function. This crime is not directly focused on public officials. This criminal offence may be committed also by employee of private business. On the other hand, section 329 (2) of the Slovak criminal code imposes heavier penalties when the crime was committed by public official. Moreover, section 330 (1) of the Slovak criminal code refers to specific subject. Therefore, this criminal offence may be committed only by foreign public official. Sanctions under section 330 (1) and (2) of the Slovak criminal code are heavy. Perpetrator may face sentence from 5 to 15 years in prison.

Another criminal offence is crime of *Bribery* regulated in section 332 (1) of the Slovak criminal code. Criminally liable is perpetrator who directly or using another person (indirectly) promises, offers or gives bribe to another person to act or omit action in a way that he or she violates his/her duties arising from his/her employment, occupation, status or function or for this reason directly of using another person promises, offers or gives bribe to the third person. This behavior constitutes a minor crime. Minor crime is committed also when perpetrator fulfil facts stated in section 332 (1) of the Slovak criminal code in more serious manner (section 332 (2) of the Slovak criminal code). Felony occurs when perpetrator commits this crime in greater amount (section 332 (3) of the Slovak criminal code).

Also, criminal offence of *Bribery* has its special provision related to procurement of things of general interest. According to section 333 (1) of the Slovak criminal code, perpetrator is criminally liable if in connection to procurement of things of general interest he or she directly or using another person promises, offers or gives bribe to another person, or for this reason promises, offers or gives bribe to another person. Committing crime in more serious manner, or promising, offering or giving bribe to the public official represent qualified facts of section 333 (2) of the Slovak criminal code which trigger heavier penalties. Both behaviors still qualify as minor offences. Felony occurs when perpetrator commits such a crime in greater amount (section 333 (3) of the Slovak criminal code).

Naturally, section 334 (1) of the Slovak criminal code refers to the foreign public official. If perpetrator directly or using another person promises, offers or gives bribe to the foreign public official or another person in connection to execution of official duties or execution of function of foreign public official with intent to gain or maintain unlawful benefit, he would be prosecuted under section 334 (1) of the Slovak criminal code. This crime represents a minor offence. Felony occurs when this crime is committed in greater amount (section 334 (2) of the Slovak criminal code).

According to systematics of the Slovak criminal code criminal offence of *Indirect corruption* follows. In both sections 336 (1) and (2) of the Slovak criminal code is the behavior qualified as minor offence. Section 336 (1) of the Slovak criminal code prosecutes everyone who directly or using another person accepts, asks for or agrees to receive bribe for himself or for

another person for having an influence on the execution of authority of the person referred in sections 328, 329 or 330, or that he or she already did so. Section 336 (2) of the Slovak criminal code punishes everyone who directly or using another person promises, offers or gives bribe to another person for having an influence on the execution of authority of the person referred in sections 332, 333, 334 or that he or she already did so, or for this reason promises, offers or gives bribe to another person. Sections 328, 329 or 330 of the Slovak criminal code refer to accepting, asking for or agreeing to receive bribe. Sections 332, 333, 334 of the Slovak criminal code refer to promising, offering or giving bribe. Sections 328 and 332 describe active and passive corruption. The aim of corrupted behavior is to induce person to act or omit action in a way that this person violates his/her duties arising from his/her employment, occupation, status or function. Sections 329 and 333 apply to corruption in connection to procurement of things of general interest. Sections 330 and 334 apply to special subject, the foreign public official.

All criminal offences qualified as *Election corruption* are minor offences. Section 336a (1) of the Slovak criminal code refers to conduct when person directly or using another person promises, offers or gives bribe to another person who has the right to vote, participate in a referendum or a popular vote on the removal of the President of the Slovak Republic in order to (a) vote in a certain way, (b) do not vote in a certain way or (c) do not vote at all or (d) do not participate in elections, referendum, or on a popular vote on the removal of the President of the Slovak Republic, or for this purpose directly or using another person gives, offers or promises bribe to another person. Criminally liable is also person who in relation to execution of right to vote, participate in a referendum or on a popular vote on the removal of the President of the Slovak Republic directly or using another person accepts, asks for or agrees to receive bribe for himself or for another person in order to (a) vote in a certain way, (b) do not vote in a certain way or (c) do not vote at all or (d) do not participate in elections, referendum, or on a popular vote on the removal of the President of the Slovak Republic. Heavier penalties are imposed if offence described in section 336a (1) of the Slovak criminal code is committed in more serious manner, by public official, on protected person¹⁰ or publicly¹¹.

Sports corruption under section 336b (1) of the Slovak criminal code occurs when person directly or using another person promises, offers or gives bribe to another person to act or to omit to act in a way that it will affect the course of the contest or the result of the contest. The term "contest" is explained in section 3 g) of the act no. 440/2015 Coll. on sports as "organized performing of sports, in accordance with rules laid down by sports organization, aimed at achieving a sporting result or comparing sports performances".

Section 336b (2) of the Slovak criminal code refers to conduct when person directly or using another person accepts, asks for or agrees to receive bribe for himself or another person to act or to omit to act in a way that it will affect the course of the contest or the result of the contest. Section 336b (3) of the Slovak criminal code imposes heavier penalty for behaviors described in paragraph 1 or 2 if the crime is committed in more serious manner, or in larger amount¹², or if the person was sentenced for such criminal act in the previous twenty-four months or was inflicted¹³ of a similar act in the previous twenty-four months. Section 336b (4) SCC refers to situations when crime described in paragraph 1 or 2 was committed by coach, delegate of a sports

¹⁰ Protected person is e.g. a child, pregnant woman, close person, dependent person, elderly, sick person a person enjoying protection under international law, according to section 139 (1) of the Slovak criminal code.

¹¹ The crime is committed publicly when e.g. it is committed by dissemination of the file, film, radio, television, computer network or other similarly effective means, or in front of more than two people present at the same time, according to section 122 (2) of the Slovak criminal code.

¹² Larger amount is amount exceeding EUR 2,660 according to section 125 (1) of the Slovak criminal code.

¹³ Person inflicted of a similar act shall mean a person who has been sanctioned for a similar act or an administrative offence or other similar offence, according to section 128 (5) of the Slovak criminal code.

association or sports organization official, or in contest organized by an international sports organization, or in significant amount¹⁴. Section 336b (5) of the Slovak criminal code punishes offender for committing crime described in paragraph 1 or 2 in greater amount. Section 336b (1) (2) are minor offences, whereas section 336b (3) (4) (5) qualify as felonies.

Criminal offence of *Sports corruption* was incorporated into the Slovak criminal code with effective date on 1. January 2016. Therefore, it is relatively new criminal offence. It is important to underline that adding new criminal offences to the Slovak criminal code and broadening criminal liability is a recent trend in the Slovak Republic. Until today no one has ever been found guilty of criminal offence of Sports corruption. By the same token, no one in the Slovak Republic has ever been sentenced for the crime of *Terrorism*. This fact demonstrates different trends in criminality in the Slovak Republic and the United States of America. There was one case brought before the court on crime of terrorism, but it was reclassified to criminal offence of *General threat* under section 284 of the Slovak criminal code. Society and alongside with it criminal law is developing differently in each country.

In the Slovak Republic distinguishing between minor offence and felony is crucial. If certain conduct qualifies as minor crime, material corrective may be used. Material corrective is regulated in section 10 (2) of the Slovak criminal code, which reads: "It is not a minor offence if, in view of the way of committing the offence and its consequences, the circumstances in which the act was committed, the degree of fault and the motive of the offender is its gravity negligible." Section 10 (2) of the Slovak criminal code is a manifest of *ultima ratio* principle applicable in criminal law. The judge has discretion to decide if the person will be criminally liable or the gravity of minor offence will be considered negligible and person will not be prosecuted. Material corrective is present in the Slovak criminal code to eliminate prosecuting persons for crimes which are not seriously harming society values, in order to remove the burden from law enforcement authorities.

However, according to section 34 (6) of the Slovak criminal code, if upper threshold of penalty of imprisonment provided in special part of the Slovak criminal code exceeds five years, the court has to impose a custodial sentence.

The Slovak criminal code contains more criminal offences which are related to corruption. The Slovak criminal code contains also crime of *Machinations in connection with bankruptcy and settlement proceedings* regulated in section 141 and crime of *Machinations in public procurement and public auction* described in section 266 of the Slovak criminal code.

The fight against corruption was reinforced when the Government office of the Slovak Republic set up an internet domain in order to spread awareness of corruption. This webpage invokes article 5 of the United Nations Convention against Corruption which states that "Each State Party shall, in accordance with the fundamental principles of its legal system, develop and implement or maintain effective, coordinated anti-corruption policies that promote the participation of society and reflect the principles of the rule of law, proper management of public affairs and public property, integrity, transparency and accountability. Each State Party shall endeavor to establish and promote effective practices aimed at the prevention of corruption." Citizens may find all laws related to anticorruption policy, priorities of anticorruption agenda, risk assessment tools as well as information where they can notify corruption practices, including protection of notifier in one place. Aim is to bring attention to corruption and make fight against corruption more accessible to citizens. Nowadays internet is the most powerful source of information, therefore we support the idea.

¹⁴ Significant amount is amount exceeding EUR 26,600 according to section 125 (1) of the Slovak criminal code.

4 Conclusion

Legal systems of the Slovak Republic and the United States of America are significantly different. This is caused mainly by the fact that the United States of America is a common law country and the Slovak Republic is a continental law country. There are issues which are widely debated in one country and not in the other one. Still, we are able to find areas where the Slovak Republic would benefit by adopting practices of the United States and vice versa. We also detected few similarities.

First, we believe it is appropriate to incorporate provisions in the Slovak Constitution that enable the removal of the highest-ranking public officials from office when impeached for and convicted of bribery. This idea is enshrined in article II, section 4 of the U.S. Constitution. Incorporation of this provision into the Slovak Constitution would strengthen democratic values and belief in justice in the Slovak Republic. At the same time, the possibility of impeachment would limit the willfulness of the highest-ranking public officials and prevent misuse of power. Second, we find it very useful that some definitions which are applicable only to certain sections of the U.S. Code are incorporated in the respective section. Namely, section 224 (c) of the U.S. Code. This makes orientation in criminal code more comprehensive to persons charged with specific crime, but it does not promote overall understanding of the code. Good orientation in legal statute would be promoted if terms would be explained only in one part of the criminal code, the best on its beginning. We think it would support general preventive function of criminal law and improve legality principle. In the Slovak criminal code, the most essential terms are defined in one place, in the fifth chapter of the Slovak criminal code, section 122. However, some criminal offences refer to special laws. Terms associated with these criminal offences are explained in special laws, e.g. section 336b of the Slovak criminal code regulating the crime of *Sports corruption* makes references to act no. 440/2015 Coll. on sports.

Third, section 201 of the U.S. Code refers to bribe as "anything of value". Section 203 of the U.S. Code uses term "compensation". Section 666 (a)(1)(B) and (2) of the U.S. Code also uses term "anything of value". However, according to section 666 (a)(1)(B) and (2) of the U.S. Code the value of thing must exceed USD 5,000 to qualify described *actus reus* as criminal offence. Due to these differences in terminology, we would suggest unifying terms related to corruption criminal offences in Title 18, United States Code. We hold an opinion that unification of terms would help to make the orientation of the U.S. Code easier, more understandable and therefore would reinforce the legality principle.

Fourth, the Slovak criminal code mainly regulates promising or giving bribe to persons who in exchange for bribe i) violate duties arising from their employment, occupation, status or function, or ii) commit corruption practices in connection to the procurement of things of general interest, or it regulates iii) foreign public officials who were influenced by bribery in execution of their official duties. Respective provisions of the Slovak criminal code refer to persons who are holding the office at the time when criminal behavior occurred. Persons who have been selected to hold the office in the future are not expressly mentioned in these provisions. According to section 201 (b)(1) or (2) of the U.S. Code a person who has been selected to be a public official may be held criminally responsible. The section expressly refers to persons who will hold the office in the future. From our point of view, this provision can eliminate corruption from its beginning and in its entirety. The Slovak Republic could consider incorporating a similar specification into the Slovak criminal code to prevent future officials from acting in contrary to the best interest of the public. Hence, section 201 (c) of the U.S. Code extends the criminal responsibility to former public officials.

Additionally, the value of the thing given or received is not determining for criminal liability according to sections 201, 203 and 224 of the U.S. Code. Likewise, there is no minimum

threshold of value of thing given or received to invoke criminal responsibility in the Slovak Republic. An interesting finding is that the U.S. Code does not trigger heavier penalties as the value of the thing given or received by corrupted practices increases. The opposite approach is applied in the Slovak Republic. In the Slovak Republic, sanctions for criminal offences of corruption depend on value of thing given or received. There is a correlation between the value of the thing and sanction imposed on the perpetrator. Upon conviction of committing criminal offence of *Receiving a bribe* regulated in section 328 (1) of the Slovak criminal code, the perpetrator may be sentenced to 2 - 5 years in prison. If perpetrator receives thing of value of more than EUR 133,000 he or she may be sentenced to 7 - 12 years in prison according to section 328 (3) of the Slovak criminal code. The Slovak criminal code is built on the idea of penalties that grow as the damage to the society increases.

Finally, there are many legal ways of exchanging money for favors in politics in the United States. Lobbyism hampers democratic values of society and it is not legal in the Slovak Republic. American Anti-Corruption Act is aiming at limiting legal ways of exchanging money for favors in politics. American Anti-Corruption Act represents a great initiative, but its implementation is not very successful. It will be difficult to limit options for receiving money in politics, because naturally, politicians would oppose it. However, American Anti-Corruption Act is a good start for ending the controversial aspects of lobbying in the United States.

Literature:

Legal acts and court decisions

1. 720 Illinois criminal statute
2. 1997 Convention on fighting corruption involving officials of the EU or officials of Member States
3. 2003 Framework Decision on combating corruption in the private sector
4. Act no. 460/1992 Coll. Constitution of the Slovak Republic
5. Act no. 440/2015 Coll. on sports
6. Act no. 91/2016 Coll. on criminal liability of legal persons
7. Act no. 300/2005 Coll. Slovak criminal code
8. Act no. 301/2005 Coll. Slovak procedure code
9. American Anti-Corruption Act
10. Constitution of the United States
11. Foreign Corrupt Practices Act <https://www.justice.gov/criminal-fraud/foreign-corrupt-practices-act> (Slovak translation <https://www.justice.gov/sites/default/files/criminal-fraud/legacy/2012/11/14/fcpa-slovak.pdf>)
12. Modal Penal Code, http://www1.law.umkc.edu/sun/CriminalLaw/MPC_Provisions/model_penal_code_default_rules.htm
13. N.Y. Penal Law <http://ypdcrime.com/penal.law/article180.htm#p180.45>
14. R 2/1965 (judicial decision of the Supreme Court of the Slovak Republic)
15. R 56/1999 (judicial decision of the Supreme Court of the Slovak Republic)
16. Roberto Miramontes Roman v. State of Utah
17. Treaty on the Functioning of the European Union
18. United States Code, Title 18 <https://www.law.cornell.edu/uscode/text/18/part-1>
19. United States of America v. Rod Blagojevich and John Harris https://www.justice.gov/archive/usao/iln/chicago/2008/pr1209_01a.pdf

Books and journals

20. Budra E., Čentěš J., Záhora J., Kolesár J., Kordík M., Mencerová I., Mularčík O., Prokejinová M., Tobiášová L. & Vráblová M. (2010) *Trestný zákon všeobecná časť; komentár 1. diel*. Praha, CZ: C.H. Beck
21. Budra E., Čentěš J., Záhora J., Kolesár J., Kordík M., Mencerová I., Prokejinová M., Tobiášová L., Laciak O., Martvoň A., Puchalla M., Strémy T. & Toman P. (2011) *Trestný zákon všeobecná časť; komentár 2. diel*. Praha, CZ: C.H. Beck
22. Adamcová I., Blažek R., Boháček B., Čentěš J., Ďurana V., Fábry A., Feník A., Kolcunová M., Kozolka J., Magvašiová A.,

Novocký J., Palkovič J., Sepeši P., Sivák M., Šanta J., Šufliarský P., Šumichrast T., Zano vit J. & Žilinka M. (2018) *Trestný zákon Veľký Komentár*. Žilina, SR: Eurokódex s.r.o.

23. Čentěš J., Sivák M., Ďurana V., Novocký J., Šanta J., Šufliarský P., Magvašiová A., Fábry A., Žilinka M., Adamcová I., Sepeši P., Zano vit J., Šumichrast T., Palkovič J. & Kozolka J. (2006) *Trestný zákon s komentárom*. Žilina, SR: Eurokódex Poradca podnikateľa, spol. s.r.o.

24. Dahl A. R. (2001) *How democratic is the American constitution? USA*: Yale University Press

25. Lippman M. (2014) *Essential criminal law*. University of Illinois at Chicago: SAGE Publications, Inc.

Other sources

26. Anticorruption agenda of the Government office of the Slovak Republic <https://www.bojprotikorupcii.gov.sk/protikor-upcna-agenda/>

27. Graham B. & Stroup C. (2015) *Does Anti-bribery Enforcement Deter Foreign Investment?* <https://cpb-us-w2.wpmucdn.com/muse.union.edu/dist/5/317/files/2015/01/11-Graham-and-Stroup-2015-AEL-forthcoming.pdf>

28. European Commission, Corruption. https://ec.europa.eu/home-affairs/what-we-do/policies/organized-crime-and-human-trafficking/corruption_en

29. European Commission, Businesses' attitudes towards corruption in the EU. (2017) <http://ec.europa.eu/comfrontoffice/publicopinion/index.cfm/Survey/getSurveyDetail/instruments/FLASH/surveyKy/2177>

30. European Council, The Stockholm programme – an open and secure Europe serving and protecting citizens. (2010/C 115/01) <https://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:C:2010:115:0001:0038:EN:PDF>

31. FBI, Rod Blagojevich Public Corruption case. <https://www.fbi.gov/audio-repository/news-podcasts-inside-rod-bлагоjevich-public-corruption-case.mp3/view>

32. Immunity of Members of the National Council of the Slovak Republic after 1. September 2012 <https://www.pravnenoviny.sk/analyzy/imunita-poslancov-narodnej-rady-slovenskej-republiky-po-1-septembri-2012>

33. Seitzinger M. V. (2016). *Foreign Corrupt Practices Act (FCPA): Congressional Interest and Executive Enforcement*. In Brief. CRS Report. Congressional Research Service <https://fas.org/sgp/crs/misc/R41466.pdf>

34. Transparency international, Corruption perception index. (2019, January 29) <https://www.transparency.org/cpi2018>

List of figure legends

1. Overview of Corruption Perception Index in 180 Countries Monitored by Transparency International in 2018 (Transparency International, 2019)

Primary Paper Section: A

Secondary Paper Section: AG, AH

APPLICATION OF ONLINE TEACHING TOOLS AND AIDS DURING CORONA PANDEMICS 2020

^aALENA HAŠKOVÁ, ^bCSILLA ŠAFRANKO,
^cMARTINA PAVLÍKOVÁ, ^dLUCIA PETRIKOVIČOVÁ

^aFaculty of Education, Constantine the Philosopher University

^bFaculty of Arts, Constantine the Philosopher University

^cFaculty of Arts, Constantine the Philosopher University

^dFaculty of Natural Sciences, Constantine the Philosopher University

Constantine the Philosopher University in Nitra, Tr. A. Hlinku 1,
949 74 Nitra, Slovakia

Email: ^aahaskova@ukf.sk, ^bcsilla.safranko@ukf.sk,

^cmpavlikova@ukf.sk, ^dlpetrikovicova@ukf.sk

Abstract: The corona pandemics forced the schools worldwide to move to distance forms of education. On an example of a particular school, namely a private language school seated in Nitra region (SK), the authors describe technical conditions of the transformation from offline education to online education and deal with feasibility of different kinds of exercises, used in foreign language teaching, in online education. The feasibility study is complemented by methodological comments derived from the experiences which the teachers of the school obtained while teaching under the pandemic conditions.

Keywords: distance education, online teaching, online teaching tools, online exercises, primary and secondary schools, foreign language teaching, coronavirus pandemics, teacher experiences

1 Introduction

Spring 2020 saw many of our lives change like never before. Coronavirus pandemics was not the end of the world, but rather the end of the way we understood our existence in the current setup of the world, the way we live, work and study and how all this affects our surroundings.

In the aftermath of the declaration of the state of emergency (in the Slovak Republic, March 16, 2020) teachers faced the inability to conduct face-to-face teaching, i.e. faced the inability to conduct teaching in the way they had been used to. In this situation modern teaching tools proved to be just the right ones to support teachers and enable them to manage the situation which had arisen. The stated is documented hereinafter through an analysis and discussion of the way in which the modern teaching tools were used in a private language school, seated in Nitra region, to ensure continuous provision of teaching to its students. A focus is given also to exercises that have proven to be efficient in the context of the new way of teaching.

2 Conditions for remote teaching

Language labs, computer rooms, multimedia labs and interactive whiteboards had long been known by foreign language teachers in Slovakia before remote teaching would have ever taken place. In fact, schools in densely populated areas with fierce competition on the market for 1st graders had already started their race to be more high-tech than their competitors a couple of years ago, which is one of the attracting factors for young teachers to take up teaching, on the long run. However, the teachers were not allowed in their schools and without the equipment ready to be used and considered vital for the online teaching of class-size groups it proved impossible for them teach many subjects not just in an interactive but in any way possible. There had long been discussions about the vanity of social networking sites, the negative effects of online communication tools to the detriment of physical contact and there were hard-core supporters of the uniqueness and inevitability of face-to-face communication and teaching, as well. All this had dramatically been put to a halt in Slovakia as of March 16 and in a month or so in the rest of the world when the one and only means of being able to stay in touch with relatives and friends and provide education for children became to be online. We quickly had to learn and adopt the use of the following expressions: e-learning, remote teaching, distance education or computerized electronic education, which are, in fact, identical expressions referring to learning utilizing electronic technologies

to access educational curriculum outside of a traditional classroom. In most cases, it refers to a course, program or degree delivered completely online.

By a remote teaching tool, we mean a tool belonging to the WEB 2.0 teaching tools, which is a group of Internet applications allowing sharing and collaboration opportunities to people and which helps them to express themselves online. Without the advent of WEB 2.0, teaching would have never been possible online as WEB 1.0 was like a shop-window, only showing information to the readers. WEB 2.0 enables for interaction and collaboration to take place within this shop-window, the world wide web. It enables for information to be altered, enlarged, manipulated with and therefore, the original shop-window stops being so and becomes an active meeting place for all parties, instead. And since the classroom is an active meeting place, in an ideal setting, it can only be replaced in the virtual world by a place which bears the same attributes as the original classroom: the virtual classroom has to enable cooperation, communication and active participation to reach learning goals (Azizi, Pavlíková, Masalimova, 2020; Khonamri, Pavlíková, Ansari, Sokolova, Korzhuev, Rudakova, 2020).

In the concerned private language school there are a lot fewer state-of-the-art devices as in state schools, as private language schools never have been eligible for state or EU funding from sources, such as INFOVEK or the Electronification of the educational system of regional schools which were projects through which 97 % of state schools countrywide received digital classrooms with IWBs, tablets, notebooks and printers.

Teachers at the concerned language school only had their personal laptops at hand with IWB materials being used on these laptops before lockdown hit, which is the reason why many of students declined online lessons due to the fact that they had been very much used to paperback supported teaching. On the other hand, online teaching aids, such as youtube videos, wikis and pronunciation applications had been incorporated into the lessons, which is why not all students had turned down distance teaching. Nevertheless, the lack of possessing high-end computer labs did not prove to be a disadvantage when lockdown hit, since reaction time of the school to the introduction of remote teaching was literally one day. As EdTech webeditor points out, one only need to adjust his/her home a little bit, test his/her equipment, set up a new routine and open up yet unused or underused communication channels with all participants in the education process (messages, LMS, phone calls) to make it all work (Castello, 2020). And in a small team, like the school teams were, this was communicated and arranged during the weekend preceding total lockdown, which, looking back, was in fact a huge success of the school. As it is known, readiness to apply online teaching in practice depends more on the human factor than on technological advances (especially if there is no one who would use them).

The ability to teach using modern teaching methods, immersive education, experimental teaching, the flipped classroom, project-based teaching, cooperative learning, gamification, problem-based learning, design thinking, thinking-based learning or competency-based learning all of a sudden depended on every member of the teaching process possessing the hardware and software toppled with high-speed connectivity in order to provide the vital framework for any lesson taking place. The importance of using online teaching aids as the only means to conduct lessons has upgraded to unseen heights provided that both parties (the teacher and the students) possessed the devices on which these aids would run. By modern teaching devices we hereby mean the physical hands-on devices we must possess (and not the online aids in the form of apps, such as Classcraft, Canvas or Seesaw) in order to be able to transmit and receive information, i.e. a desk-top computer, a laptop, a tablet or a touch screen mobile (Redaccion Realinfluencers, 2020).

As the *Teach for Slovakia* programme highlights, 10 % of all elementary school children live in poverty and, in all likelihood, do not possess a smartphone, computer or do not have internet connection (Teachforslovakia, 2020a). According to the Institute of Educational Policy this means that more than 32000 elementary school kids in Slovakia have no internet connection. Therefore, these kids may learn 90 % less than their counterparts living in average living standards, who learn only 30 % less when education takes place online and not in the classroom (Teachforslovakia, 2020b). Another research, conducted in June 2019 aimed at finding out what purposes students use the internet for, did not reveal such an alarming number of students lacking the necessary hardware and internet connection for distance learning but, on the other hand, claimed that almost every child in Slovakia owns a mobile phone with internet access (Janková, 2019). The study claimed to be representative of the whole country, however, the reality less than a year later proved this representative study otherwise.

Cutting edge technology with innovative educational tools like the Glogster App have proved to have a motivating effect for learners enhancing their communication skills, mainly English as foreign language learners (Martinez-Alba, Cruzado-Guerrero, Pitcher, 2014), and higher order thinking skills (Nazirah, Azira, Aziz, Woods, 2009; Khonamri, Azizi, Králik, 2020), too. Microsoft has started to conduct its own research and via the use of Office 365 and Microsoft Teams in real classrooms has proved that the “inside-out” teaching method can be applied with tangible results (Vámos, 2019). They have also proved that the Microsoft Innovative School programme has all that it takes to digitally transfer a school from bottom-up in one school year (Korompay, 2019).

Even though all the families of the students of the concerned school possessed some kind of digital devices (less the exceptions), due to the high frequency of their use for work and study purposes they were not always available for language learning purposes. If it was the parents who were the learners (i.e. students of the private language school), it was sometimes they who had to give up their digital appliance in favour of the needs of their offspring all of which had a negative effect on student numbers and hours taught per week. All of this goes to show that it is not only the finances, but also intensity of the use of tech devices that have an effect on the feasibility of teaching during pandemics.

3 Transformation from offline to online education institution

A very important fact, which has to be mentioned and understood, is that the school which is presented did not adopt Course Management System (CMS) or Learning Management System (LMS) to provide an online environment for course interactions.

CMS typically includes a variety of online tools and environments, such as: an area for faculty posting of class materials such as course syllabus and handouts, an area for student posting of papers and other assignment, a gradebook where faculty can record grades and each student can view his or her grades, an integrated email tool allowing participants to send announcement email messages to the entire class or to a subset of the entire class, a chat tool allowing synchronous communication among class participants or a threaded discussion board allowing asynchronous communication among participants. The reason was that the class materials had already been more or less already adapted to online teaching by the publishing houses, the students managed their homework individually with their teachers online as most of the group courses was broken down to shorter individual classes, teachers do not use gradebooks, there was no need for the teachers to send announcements for their own groups that would not have been sent by the central office to every student and chat tools or threaded discussion boards were embedded in more user-friendly internet communicators.

LMS enables a school not just to manage but also deliver e-learning courses, which is a feature that would have made it useful for the school to adopt it for its distant teaching purposes. However, an LMS needs scrupulous attention from a central office which inducts the teachers about all its features prior its use. In addition, an LMS needs constant management throughout its use and a back-up office offering constant support while its use to integrated users, that is teachers and students alike. And since the school central office had to close down, there was no space whatsoever to set up and keep up such a means of teaching for the entire period of lockdown.

For all the above reasons the school declined the option of integrating a CMS or LMS into its teaching processes and from the available collaboration tools went with internet communicators as a means of delivering education during lockdown. The tools the teacher used the most often were skype and zoom mainly because they were required to be installed on the sides of the students by their respective schools and it is a precondition to have some kind identical tool to be installed on both sides for education to take place. Other tools students had been required to install in elementary and secondary schools were messenger and viber, and since they take up less working memory in a device than skype or zoom some students preferred to go by them. For this reason, messenger often worked as a back-up solution if there was no computer at hand or the internet connection was too weak to handle high-peak information flow on skype or zoom. In addition, many students, especially adults possess a facebook account, and in such a case messenger calls are automatically enabled. These students preferred using messenger as an educational tool in addition to those situations.

Each from the used online tools enabled and disabled certain types of exercises which otherwise may or may not have been possible to do face-to-face. The key to success was to quickly realize how to continue teaching all the courses using the materials at hand. It became evident that no ad hoc teaching would be possible and due to the closure of the school no copying or scanning could be realized. Even the basic contact between teacher and student was impaired. Only those students could continue learning who had some type of interface and a stable internet connection available at the new schedule times, which were negotiated between the teachers and the students themselves. Connectivity did not depend particularly on the financial background of the parents but more on the fact whether there were enough interfaces at a particular time available for all the family members needing them. Logging times were lengthy at times and that had limiting effects on the lessons, making them impossible to happen at certain times of the day.

Due to the limitations on the part of the students regarding the former conditions and the family limitations on the side of the teachers, the original schedule had to change dramatically and continued to be negotiated all the way until the end of the school year. Considering that not every teacher knew how to teach groups online and the fact that there were time limitations on the part of the students, most groups had to be broken apart and the available time was divided equally between the remaining group members, which was doable thanks to the small sizes of the groups. Timing was key for the school as many schools in the region were unable to provide any education for their students at all or provided them only in limited numbers as suggested by the Ministry of Education.

Language lessons had a tendency to be left behind in all the schools; therefore, the language school considered as its “duty” to continue providing language education and uphold a normal student-teacher relationship as part of healthy psycho-hygiene, too, when many people did not talk to almost anybody at all. The courses had to continue also due to the fact that some students were facing their final leaving exams in May or Cambridge language exams in June (Lalinská, Stranovská, Gadušová, 2020).

4 Teachers and taught topics

According to Murray (2013), in the USA already in 2013 almost three quarters of teachers preferred using modern technological aids (Murray, 2013) and the situation concerning teachers' interest in developing their tech knowledge was even then also very high. The situation in Slovakia is similar in that. Back in 2018 according to a survey conducted by the National Institute for Certified Educational Measurements (NÚCEM) within the project *Programme for the International Assessment of Adult Key Competencies* (PIAAC) more than half of all the teachers participating in the monitoring felt a dire need and desire to be further educated in the area of teaching using IT tools. Although the target group of the monitoring were "adults", a part of the project was also an assessment of teachers' key competences related to reading and math literacy and problem solving with the use of information and communication technologies. The main goal of this part of the project was to evaluate the use of information and communication technologies by teachers both at school (in their teaching practice) as well as at home (Wirtz, Zelmanová, Galleé, 2018).

The lockdown caught Slovakia and many schools and teachers red-handed in their low preparedness to handle online teaching. The problem has been rooted in the low level of digitalized education in Slovakia, the concept for which was approved in 2014 with its planning process supposedly culminating in 2020 (*Conception of informatization and digitalization of the sector of education with a view to 2020*; MŠVVaŠ, 2014), but which never actually got transformed into action plans according to the Supreme Audit Office of the Slovak Republic. Even the Ministry of Education, Science, Research and Sport (MŠVVaŠ) issued its first guidelines as to how to conduct teaching in lockdown only 43 days after the state of emergency was declared (*Guidelines to the content and organization of teaching primary school pupils during the emergency breakdown of school education at schools in the academic year 2019/2020*, MŠVVaŠ, 2020).

All the mentioned is supported by the European Commission's Education and Training Monitor 2019 paper, in which the National Programme for the Development of Education (NPDE) stressed the necessity to extend ICT use in all classroom settings and highlighted that the ratio of teachers aged under 30 reaches a maximum of 9% in secondary schools and 7% in elementary school (Course Management Systems). This information is important as only the young generation of teachers is likely to use ICT tools at home and therefore, will use them in their jobs and the classroom, too (EC, 2019).

Concerning the average age of the analyzed school teaching staff, it is 35. At least half of all staff members had experienced some form of online education before March 2020 either due to the fact that they had continued teaching from their home countries (e.g. Ukraine, Spain) during their summer holidays or because the language school had some students sign up from outside the premises (central Slovakia, Hungary, Austria). For all these reasons almost all staff members had active skype accounts set up and did not experience hurdles connecting to the internet or communicating through the screen.

Besides the teachers and technology means they have at disposal another aspect influencing efficiency of distance education is content of this education, suitability of topics which are going to be taught in this way. The basic precondition for effective distance education to take place is a carefully selected area of topics suitable to be taught online, as well as their special didactic processing in electronic form (Mišút, 2013). Based on the findings of the Supreme Audit Office of the Slovak Republic it may be stated that the accessible online curriculum does not suit all schools in the same way and during the lockdown it was up to the creativity of teachers what content from other sources they could provide for their students. The Office states that the digitization of the educational processes and access to digital educational content is stagnating in Slovakia, a good example of which is the Digiškola portal, whose content has not been

updated since the beginning of 2016 (Najvyšší kontrolný úrad SR, 2017).

Regarding the content of teaching in the courses provided by discussed school, a huge advantage of learning in it is that the subject matter is adjusted to the individual learner's or the relatively homogenous group's needs and, therefore, given that the materials to teach from are well-chosen at the beginning of the course there is no difference in teaching the same content face-to-face or online. Actually, there is more up-to-date content available online than in a book and given a strong internet connection, a creative teacher and a responsive student, a book-based course can be significantly livened up through state-of-the-art online tools, which can take the topic of the book further or make it more colourful and memorable, as a result.

5 Feasibility of online exercises

In the majority of cases the lessons continued to be based on books open on the desk, both parties facing each other on the screen and to a certain extent, this method worked, making online lessons very much conversational. However, there were many exercises which were almost inexecutable online. These had to be dropped, due to either the nature of the exercise itself or the limitations of the features of the application used for e-learning. These hindrances could not be solved to the satisfaction of all parties oftentimes due to the unwillingness of the students or their parents to adjust to the prevailing limitations, which resulted in student number decline (student numbers declined due to financial implications as well, which was a typical case for company lessons; less than 5% of the lessons lost in the case of natural entities was due to lack of finances or future job loss fears).

5.1 Exercises almost inexecutable online

Online almost inexecutable exercises have been mainly the ones presented hereinafter.

Total Physical Response (TPR) Activities

Kids are hard to control even when they are in the real classroom. Simultaneously, they respond very well to each other's presence in games, which enables for group learning to take place. Total Physical Response games take place in groups and kids often do not understand all the words or sentences the teacher uses but they mime the teacher and each other, too, which is a prerequisite for total physical response. Since there were no classmates nearby, these exercises could not take place.

Backup solution

In case that the parents of kindergarten-age kids had agreed for their kids to have individual online classes in the length of 20 minutes, total physical response activities worked to a certain extent if the kid was willing to mime the teacher doing the same physical activity in the room.

Listening activities

The most straightforward and user-friendly application the teachers had had previous experience with was skype. For this reason, the school suggested on the eve of the lockdown that every student and teacher download this application or refresh it, so that after the exchange of telephone numbers and the rescheduling of the timetable everyone would be able to seamlessly continue their language studies. The teachers, however, did not foresee a hindrance, which lies in the current form of skype being unable to play a listening activity real time.

Backup solution

The way how listening activities were substituted in real time was by sending the recording to the students in files on skype, which the student then downloaded to his/her computer and did the listening activities on his/her own unaided by the teacher. This process depended on, however the teacher having the teacher's CD, uploading all the files into her/his computer (if s/he happened to have a CD-player embedded computer) and having the time to send all the files to the student's skype

address. The student then had a couple of days to download these files after which the programme disabled their further downloadability.

Another solution was to transfer the lessons to zoom, which company has been able to upgrade its features, including perfect, undisturbed sound transmission to adjust to the needs of 200 million users on a daily basis by March 2020 (Yuan, 2020). Some students, however, were unable to install this programme and their education process had to adjust to the features offered by and available only on skype.

Young learners (YLE) exam preparation

The teachers had to suspend all exam-preparation endeavors as part of their general language exam courses due to the fact that they would not have been able to conduct face-to-face group mock exams regarding the hygienic limitations in place at that time, without which the students would have felt unprepared and anxious to take the exam. Mock exams are, as embedded in their name, mock exams and if the exam is conducted face-to-face, online exams don't provide the same objective conditions nor the subjective feelings a student undergoes.

Backup solution

All the young students have been offered the autumn 2020 dates as a substitute for the June 2020 dates and every accepted this suggestion.

Picture-prompted vocabulary exercises

If students do not know a word, the teacher has the chance to show them the picture of it and then oftentimes no translation is needed whatsoever, especially if the problem is a concrete and not abstract word. Due to the lagging of computers and teaching applications it is often time-consuming if not impossible altogether to step out of the programme and look for a picture of the word and paste it to the screen of the ongoing lesson as this process may freeze the programme being used and the lesson has to start all over, like in case of skype. Even though zoom enables picture and sound sharing, it is not user-friendly enough to enable the lay teacher to switch screens while keeping the student connected. In other applications like messenger or viber there is no screen sharing function at all.

Backup solution

Pasting the pictures of the new words in the chat flow once the lesson is over is an elegant solution, as it serves as a reminder of the new vocabulary learned during the lesson plus it is a sign that the teacher keeps the interests of the student truly at heart on the long run. A prerequisite of this is the necessity for the teacher to keep track of the new vocabulary learnt during the lesson a separate sheet of paper.

Paper-based activities

No physical activity which is based upon choosing from a pile of cards, closing the eyes and hiding, board game, ordering words into a sentence mixed among more members of a group, and no pair work activities which involve cooperating using cut-up pieces of paper can be done online. For this reason, the human interaction part is greatly cut out from the online lesson plan just like suspense and excitement, which naturally accompanies the process of playing games.

Backup solution

There are educational games that can be played online but sophisticated programmes are needed to make them accessible online for multiple players, which simple collaboration tools do not support. There are however, a number of games not necessarily for teaching foreign language (English) but even more so suitable for this purpose (bearing in how useful CLIL teaching is proving to be). Any games aiming at teaching or testing the basics and even more advanced knowledge in natural sciences designed for English native speaker kids in elementary schools worldwide will do for English as second language students as long as they understand the game to be played. The greatest advantage of playing online games is their in-built try-and-error feature, which enables the stress-free learning of facts

and the grammar surrounding it. The possibility to repeat an exercise over and over until the student reaches full points predestines every learner to be a winner, a straight-A student and to stay motivated for the next game to take (and the next level to master in English).

5.2 Methodological considerations due to technical problems

There are such hindrances to teaching online that no backup solution is capable of offsetting. In the following there are summarized the most common problems the teachers of the presented language school came across during teaching under the pandemics.

Poor or no internet connection

This problem is very difficult to solve. If such an issue arises there are some ways out of it: one, move the lesson to a less jammed time, when information transmission quality may improve due to fewer users; two, check the software and hardware issues or change internet provider altogether; and three, replace online teaching with phone teaching.

Backup solution

Teaching through the phone solves this problem instantly. The teacher places her/his phone in front of her/him, calls the student on face-time and they can see and hear each other while conducting the lesson mainly from the book.

In the case of the caller not being subscribed to such a package that would enable unlimited calls or lengthy calls for an affordable price, one can try putting together a quick offline e-learning course. Since many coursebooks have special student interfaces accessible by the teacher too, the teacher may design a short learning programme based on the materials available for the student from the website of the publishing house of the coursebook being used, set a reasonable learning pace for the student shown, ideally on a time schedule too, regularly send homework and tests by e-mail and require them to be sent back by a given time. Such a programme, however, may be established only if there are elaborate reading and listening exercises available for the student, as they must replace the teacher's tutoring role. In addition, offline e-learning cannot go on forever as there must be meaningful conversation taking place between teacher and student.

Poor voice transmission

Speaking is the most vital part of a lesson. Without speaking there is no instant communication available. A problem which can occur is that there is internet connection but voice transmission is weak.

Backup solution

The teacher can try moving to zoom, which has an embedded state-of-the-art software audio processing programme designed specifically to suppress room noise and reverberation (Yuan, 2020). Should this app not work either due to hardware issues the teacher may still move to teaching on face-time or the phone.

Poor picture transmission

This is a typical issue in case of poor internet connection, where data transmission capacities are overloaded by transmitting picture and voice at the same time.

Backup solution

The solution in this case is to keep on teaching but turn off the picture, which might be a solution in case of skype or zoom lessons, where picture and voice are transmitted on separate routes. A huge advantage of both programmes is that both of them enable the use of the chatbox while communicating without picture transmission overloading the system, and therefore all the advantages of the chat may be used – supplementing the whiteboard, to a certain extent.

Unavailability of printed materials

When classroom teaching has to move to remote locations, it is not always possible to ensure that all participants have classroom

books to learn from or have a chance to print copied materials sent via e-mail.

Backup solution

If, however, at least one party (either the teacher or the student) has the book, it is viable to conduct the lesson by one party sending a picture of the relevant page to the other on *messenger*, *viber* or *whatsapp* keep that page open on the mobile phone and conduct the lesson on the computer using a different programme, such as *skype*, *zoom* or *Microsoft Teams*.

Visually impaired students

Some students, which do not use Braille writing, depend on their magnifying glass to learn at school. Even though there are magnifying options online and offline too, it might be so hard for the learner to constantly switch over between the words to magnify or the teacher to see that without a special computer for the online learning needs of such a student it might simply be impossible for such a student to engage in online learning.

Universal speaking exercises

Online teaching is geared mainly towards oral teaching and therefore almost all verbally conducted exercises are suitable to be executed online. A fine exercise for which no extra prop is needed except for a timer is when a student has to talk about a given topic for a minute. A picture-based speaking exercise may be timed, too, as it is done at language exams, where students have to speak about a given picture for a minute. The picture is shown to the camera of the teacher for a given time (e.g. 10 seconds) after which the student has to describe what and how s/he remembers about the picture.

Storytelling is also possible either one-to-one or as a group in which each member says a sentence as part of a common story the beginning of which is started by the teacher. A modification of this exercise may be when the members of the group have to tell a story, but the teacher keeps interrupting them with linkers based on which they have to modify each sentence but keep the topic. Applications enabling multiple speakers to hear each other well are *skype*, *messenger* (sound transmission problems may occur), *zoom*, *teams*.

5.3 Further methodological comments

An advantage of synchronous e-learning is that it enables exercises to be conducted that would be otherwise impossible. One must acknowledge that remote teaching tools and devices possess different features from a physical classroom and that by getting acquainted with them using them to the advantage of foreign language lesson content one can greatly foster motivation towards learning and deepen the learning experience in unforeseen ways. Following examples of exercises serve as proof of this statement.

Video-based exercises

It is great fun to take the devices the parties use and show them around their house or a certain part of, and then compare each other's dwellings. It is fun for the teacher, too, if they also must remember details about the student's house. The excitement part of it is the fact that the video shown is real, on-the-spot and will not repeat (Petrovič, Murgaš, 2020). The programmes enabling it are *skype*, *zoom*, *messenger*, *viber* and *whatsapp*.

Asynchronous assignments

Once a physical class emerges to its end the teacher has to have a clear idea about what kind of homework s/he will give to class, if it has not been prepared or copied even earlier, but what can happen is that such a hardware may not be in line with what has actually happened or been achieved in class and, for this reason, might need a lot of explanation or should even be dropped.

The instance of online teaching enables the teacher to examine the content of the lesson and send the most relevant HW also being able to choose from the wide variety of online games, acting as possible basis for HW. Online exercises enable for multiple repetition and therefore HW is learnt much more

thoroughly. Programmes one can access this way are *skype*, *messenger*, *viber*, *whatsapp*, all CLMs and LMSs.

In a regular class usually there is a problem to ensure conditions in which groups of students do not disturb each other. To ensure groups of 3-4 do not disturb each other in a regular class the teacher can separate them by sending them into different classrooms if there are some available. If not, groups are likely to listen to each other wanting to overhear great ideas. Even pair work is hard to do with 4 students if space is cramped and the teacher does not want to waste time moving around classroom objects. Solving this problem is perfectly possible teaching online due to the fact that there is programme *Microsoft Teams*, which enables the division of a group of students into small groups. Within this setup communication is enabled only within the designated group members, which is a great way to solve puzzles, for example, and compare the results at the very end. Students may also prepare exercises for each other and do them within a given time. They will never know the answers for the exercise they receive from the other group as the control button for opening or closing the communication channels is in the hands of the teacher (*assignments for groups with zero disturbance*).

One of the problems a teacher has to deal with while teaching is *correction of continuous speech*. Teachers tend to struggle with trying to balance out the amount of correction they supply and the amount of correction students demand during so-called free-style speaking. Teachers might believe that leaving a student to speak with mistakes will embed those mistakes within fluent speech on the long run, which is partially true. For this reason, if there is a topic to talk about, some teachers have a tendency not to let the student speak with mistakes, which might result in the student never acquiring high enough self-esteem to become a fluent speaker. A great solution for this problem is teaching using a chat-enabled online tool. While the student speaks about a topic or gives a lengthy answer the teacher has the chance to record the mistakes and (given s/he is quick enough) correct them all in the chat box. Once the student is done, the teacher sends all her/his notes in the chatbox in one go and the student has a chance to review all the mistakes s/he has just made in a non-intrusive way. If the teacher wants to correct the student while the student is speaking, doing so by sending the correct sentences, words, expressions in the chatbox is a non-intrusive way of doing so, because the student is not stopped by the voice of the teacher just the notes s/he receives from the teacher. The student may still decide to ignore the teacher's notes in the chat and refer back to them once s/he is done, if reading the notes would divert his/her thinking from his/her main line of thought.

It is impossible to precisely review what has happened during a lesson without a lesson plan. If a teacher asks a student to try to recall what s/he has done, what were the highs and lows and what s/he has learnt the likelihood of the student responding fluently is meager. Yet, if the teacher keeps recording in the chatbox what is going on during the lesson (meaning s/he acts like a tape-recorder by speaking and writing at the same time) the student is perfectly capable of recalling all the exercises and by reflecting on them embeds the information learnt during the lesson more than without this recap phase at the very end (*self-reflection*).

A great tool in *skype*, and less so, but to a certain extent in *zoom*, too, is the ability to conduct the communicate process in three ways simultaneously: verbally, in writing and via emoticons. Verbal communication takes place through the screen, written communication takes place in the chat (works excellent in *skype*, but shows as one speech flow in *zoom*) and feelings are expressed by the use of emoticons appearing either on the screen for a short time as the teacher's positive or negative reaction what has been said or a positive or negative reaction to what has been written in the chat (*triple communication channel*). The usage of emoticons is enabled on both sides of users therefore opening up a wider communication channel on the side of the student if the teacher is open enough to receive emoticons from the students as evaluations of the exercises being done.

The fact that all e-learning tools enable lesson recording takes online teaching to a whole new level (Kobylarek, 2018, 2019). As the more we practice the more we learn, there is no better tool for a learner than listen to a lesson at which s/he has participated and live through the same experiences thereby coding the lesson into the brain as many times more as the student listens to the lesson. In addition, this method is free of charge and can be repeated endlessly.

Since in the *Teams* app the teacher may enable the student to take control over the lesson using the teacher's screen, the student is empowered to take lesson planning into his/her hands thereby fostering his/her higher order thinking. The shared control function, however, requires and is conditioned by mutual trust. Nevertheless, if the teacher is willing to let loose of the grip of the lesson, the student in charge of managing a game for the whole class in place of the teacher might gain such motivation to learn the language that no other activity may ever replace.

And the last but not least advantage of e-learning, to be mentioned, is that e-learning enables otherwise inaccessible teaching routes to build as the road that connects teacher and student does not have to be physically taken. For this reason, the physically disabled but mentally all the more interested students are able to take up such courses that they could never do in the real world due to the hindrances their physical problems might cause them to have to overcome.

6 Conclusion

Although formation of professional digital literacy is in some way included in curricula of teacher trainees study programs (i.e. in teacher pre-gradual training) the pandemic situation has pointed out some weaknesses of this preparation. Teacher trainees have been trained usually to work with some particular software applications, and this mainly as users, without any special focus on appropriate implementation of these means into their future practice (i.e. on application of these means in teaching their majors). The corona pandemic has caused that education is moving into the virtual reality. To support distance form of education at all its levels, digital multiplatform tools and teaching aids are used. And in this situation, based on the experiences already obtained, we see how important is to train teachers to work with different on-line systems, what has been a marginal issue of teacher trainees didactic-technological preparation (Záhorec, Hašková, Munk, 2020).

Literature:

- Azizi, M., Pavlíková, M., Masalimova, A. R.: Exploring Literature Reading Classes in Terms of Types of Feedback Provided by EFL Teachers: Does Teaching Experience Play a Determining Role? *Education and Self Development*, vol. 15, no 3/2020, pp. 19-36. ISSN 1991-7740
- Castello, M.: *How to set up a virtual classroom*. EdTech, 2020. Available at: <https://edtechmagazine.com/k12/article/2020/08/how-set-virtual-classroom>
- EC: *Education and Training MONITOR 2019: Country analysis*. Luxembourg: Publications Office of the European Union, 2019. ISBN 978-92-76-08740-3
- Janková, M.: *Význam internetu a sociálních sítí v životě žákův základních a středních škol*. Bratislava: Centrum vedecko-technických informací SR, 2019. ISBN 978-80-89965-35-9
- Khonamri, F., Azizi, M., Králik, R.: Using interactive e-based flipped learning to enhance EFL literature students' critical reading. *Science for education today*, vol. 10, no 1/2020, pp. 25-42. ISSN 2658-6762
- Khonamri, F., Pavlíková, M., Ansari, F., Sokolova, N. L., Korzhuev, A. V., Rudakova, E. V.: The impact of collaborative instruction of language learning strategies on language learning beliefs and learner autonomy. *XLinguae*, vol. 13, no 4/2020, pp. 216-234, ISSN1337-8384, 2453-711X. DOI:10.18355/XL.2020.13.04.16
- Kobylarek, A.: Science as a bridge. Science in action preface. *Journal of Education Culture and Society*, vol. 9, no 2/2018, pp. 5-8. ISSN 2081-1640
- Kobylarek, A.: Social responsibility of science introduction. *Journal of Education Culture and Society*, vol. 10, no 2/2019, pp. 5-11. ISSN 2081-1640
- Korompay, B.: Akár egy év alatt is komoly eredményeket lehet elérni. Kökönyösi Általános Iskola, Gimnázium és Alapfokú Művészeti Iskola, 2019. Available at: <https://customers.microsoft.com/en-us/story/758367-vpg-teams-office365-education-hungary-hu>
- Lalinská, M., Stranovská, E., Gadušová, Z.: Instruments for testing reading comprehension. *INTED 2020: 14th annual International Technology, Education and Development Conference*, pp. 5018-5026. Valencia: IATED Academy, 2020. ISBN 978-84-09-17939-8, ISSN 2340-1079
- Martinez-Alba, G., Cruzado-Guerrero, J., Pitcher, S.: Glogster and Other Motivating Tehnology: A Multiple Case Study of English Learners, *The Reading Matrix*, vol. 14, no. 2/2014
- Mišút, M.: *IKT vo vzdelávaní*. Trnava: Pedagogická fakulta Trnavskej univerzity, 2013. ISBN 978-80-8082-695-6
- MŠVVaŠ: *Koncepcia informatizácie a digitalizácie rezortu školstva s výhľadom do roku 2020*. Bratislava: MŠVVaŠ SR, 2014. Available at: <https://www.minedu.sk/koncepcia-informatizacie-a-digitalizacie-rezortu-skolstva-s-vyhľadom-do-roku-2020/>
- MŠVVaŠ SR: *Usmernenie k obsahu a organizácii vzdelávania žiakov základných škôl počas mimoriadneho prerušenia školského vyučovania*. Bratislava: MŠVVaŠ SR, 2020. Available at: <https://www.minedu.sk/usmernenie-k-obsahu-a-organizacii-vzdelavania-ziakov-zakladnych-skol-pocas-mimoriadneho-prerusenia-skolskeho-vyucovania-v-skolach-v-skolskom-roku-20192020-28-4-2020/>
- Murray, C.: *Survey: 74 Percent of Educators Support the Use of Technology in Schools*. Public Broadcasting Service Report, EdTech, 2013. Available at: <https://edtechmagazine.com/k12/article/2013/02/survey-74-percent-educators-support-use-technology-schools>
- Najvyšší kontrolný úrad SR: *Digitalizácia vzdelávania zaostáva, chýbajú financie, rýchly internet i kvalifikovaní ľudia*. Bratislava, 2017. Available at: https://www.nku.gov.sk/aktuality/-/asset_publisher/9A3u/content/digitalizacia-vzdelavania-zaostava-chybaju-financie-rychly-internet-i-kvalifikovani-ludia?inheritRedirect=false
- Nazirah Mat. Sin, Azira Ab. Aziz, Woods P. Ch.: Fostering higher order thinking through Glogster. *ICT transforming education*, 13th UNESCO-APEID International Conference and World Bank-KERIS High Level Seminar on ICT in Education. UNESCO, 2009. Available at: <https://www.academia.edu/397121/>
- Petrovič, F., Murgaš, F.: Linking sustainability and happiness. What kind of happiness? *GeoScape*, vol. 14, no. 1/2020, pp. 70 - 79, ISSN:1802-1115
- Redaccion Realinfluencers: *8 methodologies that every 21st century teacher should know*. 2020. Available at: <https://www.realinfluencers.es/en/2019/05/09/8-21st-century-methodologies/>
- Teachforslovakia. *Chudobné deti odstrihnuté od internetu*. 2020a. Available at: <https://teachforslovakia.sk/2020/04/08/chudobne-deti-odstrihnut-od-internetu/>
- Teachforslovakia: *Na každom dieťati záleží*. 2020b. Available at: <https://teachforslovakia.sk/2020/04/08/chudobne-deti-odstrihnut-od-internetu/>
- Vámos, Á.: *How the "inside-out class" method works in practice*. Kökönyösi Általános Iskola, Gimnázium és Alapfokú Művészeti Iskola, 2019. Available at: <https://customers.microsoft.com/en-in/story/764909-kokonyosi-education-office-365-hungary-en>
- Wirtz, Z., Zelmanová, O., Galleé, F.: *Využitie zručností doma, v práci a úrovne gramotností učiteľov*. Bratislava: NÚCEM, 2018. Available at: <https://www.nucem.sk/dl/4763/Vyu%C5%BEitie%20zru%C4%8Dnost%C3%AD%20a%20gramotnosti%20a%20IKT.pdf>
- Yuan, E. S.: *A message to our users*. Zoom blog, 2020. Available at: <https://blog.zoom.us/a-message-to-our-users/>

25. Záhorec, J., Hašková, A., Munk, M.: *Digitálna gramotnosť učiteľov v kontexte ich profesijnej prípravy* [Digital literacy of teachers in the context of their professional training]. Bratislava: Univerzita Komenského, 2020. ISBN 978-80-223-4882-9

Primary Paper Section: A

Secondary Paper Section: AM

ASSESSMENT OF RELATION BETWEEN LEGISLATIVE RISK AND EXPECTED PROFITABILITY OF A SUBSIDIZED PROJECT

^aSIMONA HAŠKOVÁ, ^bPAVEL ROUSEK, ^cJAKUB HORÁK

Institute of Technology and Business, School of Expertness and Valuation, Okružní 517/10, 37001 České Budějovice, Czech Republic

email: ^ahaskova@mail.vstecb.cz, ^brousek@mail.vstecb.cz, ^chorak@mail.vstecb.cz

Abstract: The paper analyses relationship between the risk of a legislative change and expected profitability of subsidized projects. Introduction in risks is given in terms of their internal and external origin with focus on legislative risk within projects subsidized from public resources. This risk is covered by some specialized ratings. The aim is to measure the legislative risk of subsidized projects. To do it, we lean on data of the rating agency Euromoney Country Risk for the selected EU countries. The input ratings are processed to capture certainty degree of legislation stability. The certainty degree induces the possible threat of subsidy cuts of the purchase price for subsidized production here expressed as indicator of market risk. Based on this, we build and apply a statistical model for estimating expected profitability of an average subsidized project of a biofuel plant measured by E[NPV]. The E[NPV] results reflect differences depending on the certainty degree according to the country the subsidized production is realized. Possible reasons for neglecting legislative risk within cash flow budgeting and profitability calculation in subsidized projects is discussed. Here performed approach to express and incorporate legislative stability by means of certainty degree and market risk is an original contribution of the paper.

Keywords: legislative risk, expected profitability, biofuel plant, financial management, project management

1 Introduction

Risks associated with business projects are generally structured in terms of their internal and external origin. The basic division of internal and external risks and their analysis is expanded by several authors into more detailed categories (see e.g., Kaplan and Mikes, 2012, pp. 2-5): „Category I: Preventable risks. These are internal risks, arising from within the organization that are controllable and ought to be eliminated or avoided; Category II: Strategy risks. A company voluntarily accepts some risk in order to generate superior returns from its strategy, which could companies further redistribute (Klieštk et al., 2020); Category III: External risks. Some risks arise from events outside the company and are beyond its influence or control.“

The distribution allows us to perceive internal risks arising within a company or a project as a more easily influenced by the enterprise. Acceptance of financial indicators is a partial help to eliminate risk (Klieštk et al., 2020; Machová and Horák, 2019). The general concept and tools of the control of internal risks for different options of risk existence enable the company to optimize risks in the case of distribution control of scarce resources (Vasilkov and Gushina, 2015). External risks are of course broader and can be broken down into the risks of the microenvironment (e.g., supplier, customer, and competitor risk) and macro-environment (e.g., legislative, tax, and economic risk). It is the competitive market environment and the environment of more concentrated markets that influence the perception of market risk (Dvorský et al., 2020). The predictive potential of bankruptcy models can be used to determine the risks arising from the companies micro and macro environment (Klieštk et al., 2018). Special attention will be further paid to the legislative risk in connection with projects subsidized from public resources.

We consider the legislative risk as the possibility of a significant change in legislation. Such a change may subsequently adversely affect investments and their returns. The unforeseen change in legislation may cause attenuation of the subsidy supply e.g., to renewable energy projects by means of economic barriers such as subsidy cuts for renewable energy, the introduction of additional tax, etc. (Pimonenko et al., 2020). The literature works with the theoretical concept of legislative risk, including its assessment and evaluation. Some authors examine the qualitative and quantitative risk assessment methodologies (Di Nicola and McCallister, 2006). General risk management

guidelines can be applied to quantify legislative risk (Jeynes, 2012).

On the practical level, the legislative risk is included in subject rating (Vinš and Liška, 2005), which is widely utilized despite legitimate criticisms, which makes it an imperfect valuation tool (Hill, 2002). In accordance with (Oetzel et al., 2001) the risk associated with the possible undesirable changes affecting the projects' profitability can be estimated from the ratings of the services to which belong the Bank of America World Information Services, Euromoney, Standard and Poor's Rating Group, Moody's Investor Services, Transparency International and others.

It is considered that investing financial resources in the subsidized projects involves risks that may prove to be greater or at least more complex than generally considered within the capital budgeting (Busse and Hefeker, 2007). The threat of any undesirable legislative change could substantially alter the prospects of the project's cash flow prognoses thus affecting the economic results of the company (De Haan and Siermann, 1996). Political and economic risks influencing subsidy policy may arise in many forms such as: a new president or prime minister coming to power, a change in the country's ruling party, the power of lobbyists, high budget deficit, corruption, etc. (Wallace and Latcheva, 2006).

The aim of the paper is to assess the risk of legislative change on the profitability of a subsidized project of renewable energy. We particularly take into account the threat of the subsidy cuts of the purchase price (feed-in tariff) for the energy produced. To measure it we derive from the data of the rating agency Euromoney Country Risk for the selected EU countries promoting production of subsidized renewable energy and therefore acting in the line with commitments of the Kyoto Protocol, which aims to combat global warming (Kyoto protocol, 1997). Based on this, we build a statistical model for estimating the expected profitability of the subsidized average project measured by E[NPV] for the given group of selected countries. In this context, the theoretical approach will be justified in the methodology and applied in the case of the project of a biofuel energy plant evaluation under consideration of legislative risk. The conclusive part summarizes procedures and states the original findings.

2 Materials and methods

The stochastic uncertainty of the business environment affects the reliability of the outcomes of managerial calculations with the subsidized projects being no exception.

The methodological approach to the profitability assessment of subsidized projects leans to the value concept (Froot and Stein, 1998) that takes into account explicit and implicit payments so that the result is a complete objective part of the economic assessment. The key decision-making criterion is presented by net present value (NPV) of the cash flow generated by the project during its life expectancy n (see e.g., Sayadi et al., 2014):

$$NPV = \sum_{t=0}^n \frac{R_t - C_t}{(1+i)^t} \quad (1)$$

In relation (1), the variables R_t and C_t represent the revenues and costs at time t . In the case of a subsidized project, the discount rate i stands for the internal yield on investment – IRR (Horowitz, 1996). Investors, who use public sources to implement their projects, calculate with this annual yield; its size depends on the type of grant, subsidy and incentive policy. Ideally, it is equal to the alternative costs of the capital (Wiesemann et al., 2010). In the field of renewable energy

projects, its size depends on adopted obligations of individual states, the condition of the government budget, intensity of lobby groups' activity and the voters' response to the rising market prices resulting from subsidies. The issue of the internal yield is therefore more or less a question of political decisions.

In terms of subsidised renewable energy projects, the unforeseen legislation changes may result in a reduction of subsidy of the purchase price of electricity produced (feed-in tariff – FIT). Under a FIT, the renewable electricity producers are paid a cost-based purchase price for the renewable electricity they supply to the grid, the access of which is guaranteed by long-term contracts (Klein et al., 2008). These purchase prices are one of the building blocks for cash flow calculations within budgeting and as such create the core of the NPV.

Risk modelling for subsidised production presents complexity due to the strong interaction between the trading of the products, the supply and demand imbalances and state of the economy and political stability. In this paper, we contemplate the market risk of subsidized energy production using a variable indicator σ expressing a ratio of the realized (actual) purchase price (P) for energy produced and the budgeted price given by the FIT (P_E).

The value of this ratio is a direct consequence of investor confidence in the stability of the legislative framework, the grade of which is measured by diverse rating agencies. To capture the risk of a legislative change, we utilize the Euromoney Country Risk rating. It includes the investment risk of a country, risk of losing direct investment and risk to global business relations; factors that are covered in ranking countries by risk are political risk, economic performance/projections, structural assessment, debt indicators, credit ratings, access to bank finance, access to capital markets, etc. (Euromoney, 2018).

2.1 Approach to the external risk measurement of subsidized projects

Let us consider the risk of legislative change of selected EU countries according to data released by the rating agency Euromoney Country Risk summarized in Tab. 1 (the original data were divided by a hundred and converted into opposite numbers in order to express the country non-risk perception – further on marked as Euromoney Index). All the selected countries in Tab. 1 are the EU members that have committed to fulfill the EU agreement set of the Kyoto protocol.

Let us denote ρ as a parameter of certainty degree represented by the value of Euromoney Index, where $\rho \in (0,1)$; the higher the parameter ρ the lower the risk of undesirable changes relating to the legislative change that could threaten the performance of subsidized projects. The Index value ρ signals the level of confidence in the expected profitability in dependence of the country the projects are implemented.

Table 1: The assessment of the selected EU countries in terms of the quality of legislative environment measured by Euromoney Index $\rho \in (0,1)$

Country	Euromoney Index, $\rho \in (0,1)$
Croatia	0.517
Czech Republic	0.577
Estonia	0.7
Hungary	0.587
Latvia	0.6
Lithuania	0.61
Poland	0.64
Slovak Republic	0.598
Slovenia	0.65

Note: 0 stands for the worst assessment, 1 is the best assessment. Source: Euromoney (2018) input data adjusted.

The legislative changes can, for instance, negatively influence the situation in the renewable energy market, as I. they contribute to uncertainty regarding the future development of profits from the renewable energy projects and II. subsidy recipients (especially in agriculture) become fully dependent on

the government support, the cut of which would result in putting the project out of business in many cases (Maroušek, 2013).

In the next, we focus on the point I. within the evaluation of a subsidized bioenergy project based on the net present value (NPV). Within the calculation, we distinguish the level of risk of a legislative change described as certainty degree ρ and with it connected the market risk σ expressed by the ratio of actual purchase price of energy produced and the expected (budgeted) price.

3 Results – case study: the biofuel plant project (BSP) cash flow budgeting reflecting the market risk

To analyze the impact of a legislative change to the profitability of BSP we draw from the data of Tab. 2, in which the symbols a, b, c, d represent the values of budgeted revenues. Symbol σ is the variable parameter expressing the market risk for which it applies $\sigma = P / P_E$, $\sigma \in (0,1)$; symbols P and P_E stand for the actual purchase price for the energy produced and the expected (budgeted) price, respectively. In the case of $\sigma = 1$, the project budgeted revenues are estimated as follows: a = 1800, b = 1900, c = 2500, d = 3800; all the values are stated in thousands of euros (further marked as kEUR).

Table 2: The average yearly cash flows (CF) generated by an average BSP reflecting the market risk σ in kEUR; $\sigma \in (0,1)$

Period (years)	0	1	2	3	4	5	6-21	22-31
Year	2013	2014	2015	2016	2017	2018	2019-34	2035-44
1 Cap. subsidy	1000							
2 Cap. investment	3000	500						
3 Revenues			a · σ	b · σ	c · σ	d · σ	d · σ	d · σ
4 Operating costs			1400	1400	2000	2400	2400	2400
5 Depreciation in total			80	150	170	180	180	30
6 EBT (3-4-5)			a · σ -1480	b · σ -1550	c · σ -2170	d · σ -2580	d · σ -2580	d · σ -2430
7 Tax 24 % of EBT			0.24 · a · σ -350	0.24 · b · σ -370	0.24 · c · σ -520	0.24 · d · σ -620	0.24 · d · σ -620	0.24 · d · σ -580
8 EAT (6-7)			0.76 · a · σ -1130	0.76 · b · σ -1180	0.76 · c · σ -1650	0.76 · d · σ -1960	0.76 · d · σ -1960	0.76 · d · σ -1850
9 Operating CF (8+5)			0.76 · a · σ -1050	0.76 · b · σ -970	0.76 · c · σ -1480	0.76 · d · σ -1780	0.76 · d · σ -1780	0.76 · d · σ -1820
10 CF of cap. bud. (1-2+9)	-2000	-500	0.76 · a · σ -1050	0.76 · b · σ -970	0.76 · c · σ -1480	0.76 · d · σ -1780	0.76 · d · σ -1780	0.76 · d · σ -1820

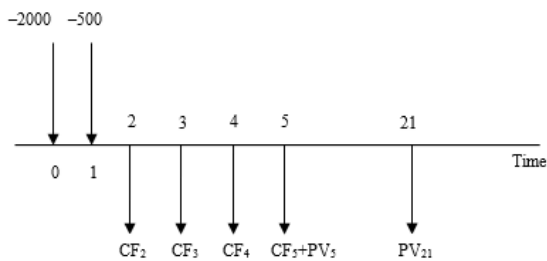
Note: 0 stands for the worst result, 1 is the best result.

Source: Authors.

The data of Tab. 2 correspond to the CFs of an average biofuel plant built and put into operation in countries listed in Tab. 1 for the installed electrical power 1000 kW (Menind and Olt, 2009; Holm-Nielsen et al., 2009). The average BSP is financed from the firm resources and through government subsidy, here in the total amount of 1000 kEUR. The budgeted revenues and operating costs result from the expert assessment, which is based on similar projects with regard to the unique characteristics of the particular project. The purchase tariffs and operating costs are not adjusted to inflation. Therefore, Tab. 2 corresponds to the situation with zero inflation or both the cash revenues and operating costs change in exactly the same proportion as general price level.

Annual cash flows generated by the project are recorded in the last row of Tab. 2. The CFs steady state is expected from the 5th year; between the years 6-31 the CF prognosis creates two time-shifted annuities: the first, the 16-year annuity, starts in the 6th period, the second, the 10-year annuity, starts in the 22nd period. This allows us to simplify the cash flow structure as indicated in Fig. 1.

Figure 1: The cash flow structure of an average BSP project in EUR



Source: Authors.

The initial cash flows involving 32 payments within the life expectancy of the project captured in Tab. 2 can be replaced by the equivalent flows with seven payments (see Fig. 1). The CF payments of the years 1-5 are the forecasted cash flows of the 10th row of Tab. 2. The present values PV₅ and PV₂₁ are "shadow" payments, which are equivalent to the effect of annuities that replace them. In view of Tab. 2 and Fig. 1, the set of relations (2) applies-see Tab. 3:

Table 3: The set of relation (2) corresponding to the simplified CF structure of an average BSP project calculated in Tab. 2

CF ₀	-2000	(2)
CF ₁	-500	
CF ₂	$0.76 \cdot a \cdot \sigma - 1050 = 0.76 \cdot 1800 \cdot \sigma - 1050 = 1360 \cdot \sigma - 1050$	
CF ₃	$0.76 \cdot b \cdot \sigma - 970 = 0.76 \cdot 2100 \cdot \sigma - 970 = 1600 \cdot \sigma - 970$	
CF ₄	$0.76 \cdot c \cdot \sigma - 1480 = 0.76 \cdot 2500 \cdot \sigma - 1480 = 1900 \cdot \sigma - 1480$	
CF ₅	$0.76 \cdot d \cdot \sigma - 1780 = 0.76 \cdot 3800 \cdot \sigma - 1780 = 2900 \cdot \sigma - 1780$	
PV ₅	For the annuity payments of the 16-year annuity it applies: $0.76 \cdot d \cdot \sigma - 1780 = 0.76 \cdot 3800 \cdot \sigma - 1780 = 2900 \cdot \sigma - 1780$. Considering the internal yield of 7% and the annuity factor of 9.447 it corresponds to the present value PV ₅ $(2900 \cdot \sigma - 1780) \cdot 9.4 = 27260 \cdot \sigma - 16732$	
PV ₂₁	For the annuity payments of the 10-year annuity it applies: $0.76 \cdot d \cdot \sigma - 1820 = 0.76 \cdot 3800 \cdot \sigma - 1820 = 2900 \cdot \sigma - 1820$. Considering the internal yield of 7% and the annuity factor of 7 it corresponds to the present value PV ₂₁ $(2900 \cdot \sigma - 1820) \cdot 7 = 20300 \cdot \sigma - 12700$	

Note: in kEUR. The net internal yield of 7% is applicable in the Czech Republic for renewable energy projects
Source: Authors.

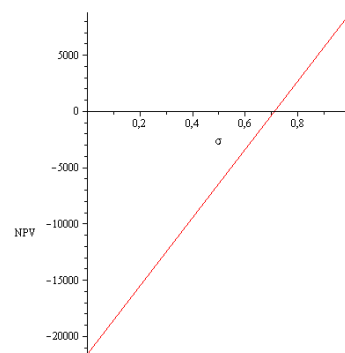
3.1 The course of NPV dependence on σ parameter

The above procedure to the project cash flow calculation is applicable for all possible depreciation schedules and compatible with the targeted derivation of NPV criterion.

Based on the set of relations (2) in Tab. 3 and relation (1), for the course of the budgeted NPV at the required internal yield of 7% depending on the σ parameter it applies:

$$\begin{aligned}
 NPV &= -2000 - 500 + (1360 \cdot \sigma - 1050) / 1.07 + (1600 \cdot \sigma - 970) / 1.072 + (1900 \cdot \sigma - 1480) / 1.073 + (2900 \cdot \sigma - 1780) / 1.074 + (27260 \cdot \sigma - 16732) / 1.075 + (20300 \cdot \sigma - 12700) / 1.0721 \\
 &= -21571 + 30350 \cdot \sigma. \text{ For NPV} \\
 &= 0 \text{ applies } \sigma = 0.71.
 \end{aligned}
 \quad (3)$$

Figure 2: The course of NPV development depending on the market risk σ , where $\sigma = P / P_E$, $\sigma \in (0,1)$



Source: Authors.

A drop in the purchase price P in the σ relation leads to a decrease in NPV (see Fig. 2); $NPV \leq 0$ occurs at $\sigma \leq 0.71$, see relation (3) and Fig. 2.

The course of NPV recorded in Fig. 2 and relation (3) is meaningful only in the case that the reduction of the purchase price P will not affect other renewable resource energy projects than the biofuel plant projects. Thus, the discount rate i remains stable reflecting the internal rate of return on investment. In situation of a proportional reduction of the purchase price P in comparison to the budgeted price P_E of all subsidized renewable energy projects, the discount rate i also decreases due to the lower internal yield on investment.

3.2 Expected net present value with regard to certainty degree

When estimating the project expected profitability, we take into account the degree of certainty ρ associated with a potential legislative change (see Tab. 1). Let ρ parameter be the weight in the formula for $E[NPV]$ calculation. For the expected profitability of a subsidized project then applies:

$$E[NPV] = NPV_{\sigma=1} \cdot \rho + NPV_{\sigma<1} \cdot (1 - \rho) \quad (4)$$

The first part of the sum in relation (4) stands for the optimistic scenario within which the legislation is not anticipated (ρ) resulting in $\sigma = 1$; the second part of the sum admits pessimistic scenario with the possibility of undesirable legislation change ($1 - \rho$) resulting in $\sigma < 1$. Thus, the ρ parameter directly influences the level of the change in purchase price (in the case of ρ , any undesirable change is not expected, thus $\sigma = 1$; analogically, the value $1 - \rho$ signals the risk of an undesirable change, thus $\sigma < 1$).

Let us assume that σ parameter does not drop under 0.71 within the pessimistic scenario ($\sigma < 0.71$ would imply a loss-making project). Then the average biofuel plant expected profitability $E[NPV]$ is determined by the value of the weight ρ in relation (4), the result of which is shown in the last column of Tab. 4.

Table 4: The $E[NPV]$ value in kEUR in dependence of the degree of certainty ρ given for selected countries with variable $\sigma = 0.75$ in pessimistic scenario

Country	ρ parameter	$NPV_{\sigma=1} \cdot \rho$	$NPV_{\sigma<1} \cdot (1 - \rho)$	$E[NPV]$
Croatia	0.517	4538.7	575.5	5114.2
Czech Republic	0.577	5065.5	504.0	5569.5
Estonia	0.7	6145.3	357.5	6502.8
Hungary	0.587	5153.3	492.1	5645.4
Latvia	0.6	5267.4	476.6	5744.0
Lithuania	0.61	5355.2	464.7	5819.9
Poland	0.64	5618.6	428.9	6047.5
Slovak Republic	0.598	5249.8	479.0	5728.8
Slovenia	0.65	5706.4	417.0	6123.4

Source: Authors.

The results of expected profitability of subsidized biofuel plant revealed significant differences among the selected EU countries.

Despite the fact that the subsidy legislation is a topical issue in many countries, it is not often reflected in the cash flow budgeting of the subsidized projects and their expected profitability calculation. A possible reason is that the discount rate for unsupported projects captures an alternative yield that is influenced by the level of a project risk, both the internal and external. In subsidized renewable energy projects the internal yield is promised by the legislature in order to support the production of energy from renewable sources. As such, it has different qualities; significant risks within subsidized projects should be therefore incorporated additionally. One possible way how to achieve it is presented above.

4 Conclusions

The risk of legislative change concerning the subsidized projects can affect their expected profitability. In order to quantify this threat we lean to rating evaluation that includes various risks regarding possible subsidy legislative change. Despite the criticism of the rating predictive value, it is generally perceived as a good assessment tool.

We worked with Euromoney country rating data, which were transformed to express the certainty degree of stability in subsidy legislation for a group of EU countries. The value of certainty degree may e.g. involve risk of cuts in feed-in tariffs paid for energy produced by renewable resource plants. This induced threat was described as market risk and measured by means of a relation of the actual purchase price and budgeted price. The lower the certainty degree, the greater the level of market risk. The approach to expression and incorporation of certainty degree and from it derived market risk is the original contribution of this paper.

On the realization level the certainty degree performs weights in the formula for expected profitability calculation measured by E[NPV]. The aforementioned view of the components of risk of legislative change incorporated in the profitability measure was subjected to the methodology part in which the idea and essence is justified.

This approach was applied to assess the risk of a legislative change on the subsidized project profitability of an average biofuel plant. Within the profitability calculation the average yearly cash flows reflecting market risk were calculated. Based on this, the E[NPV] in dependence of certainty degree was expressed for the selected set of countries. Results revealed significant differences in expected profitability of renewable resource productions among the countries in a group. One of the reasons seem to be non-reflecting the legislative risk within the discount rate. The size of it is given by legislation to promote renewable energy production and as such has different qualities compared to unsubsidized projects. Significant risks of subsidized projects should therefore be taken into account in the calculations additionally, for example, as indicated in the article.

References

1. Busse, M., Hefeker, C.: Political risk, institutions and foreign direct investment. *European Journal of Political Economy*. 2007, 23(2), 397-415.
2. De Haan, J., Siermann, C. L.: Political instability, freedom, and economic growth: some further evidence. *Economic Development and Cultural Change*. 1996, 44(2), 339-350.
3. Di Nicola, A., Mccallister, A.: Existing experiences of risk assessment. *European Journal on Criminal Policy and Research*. 2006, 12(3-4), 179-187.
4. Dvorský, J., Klieštík, T., Čepel, M., Strnad, Z.: The influence of some factors of competitiveness on business risks. *Journal of Business Economics and Management*. 2020, 21(5), 1451-1465.

5. Euromoney: *Euromoney*. [online] 2018. Available at: <https://www.euromoney.com/article/b12kfgpyk3vkl/countries-included-in-the-euromoney-country-risk-results>
6. Froot, K. A., Stein, J. C.: Risk management, capital budgeting, and capital structure policy for financial institutions: an integrated approach. *Journal of Financial Economics*. 1998, 47(1), 55-82.
7. Hill, C. A.: Rating agencies behaving badly: The Case of Enron. *Connecticut Law Review*. 2002, 35, 1145.
8. Holm-Nielsen, J. B., Al Seadi, T., Oleskowicz-Popiel, P.: The future of anaerobic digestion and biogas utilization. *Bioresource Technology*. 2009, 100(22), 5478-5484.
9. Horowitz, J. K.: Environmental policy under a non-market discount rate. *Ecological Economics*. 1996, 16(1), 73-78.
10. Jaynes, J.: *Risk management: 10 principles*. Abingdon-on-Thames: Routledge. 2012.
11. Kaplan, R. S., Mikes, A.: Managing risks: A new framework. *Harvard Business Review*. 2012, 90(6), 48-60.
12. Klein, A., Held, A., Ragwitz, M., Resch, G., Faber, T.: Evaluation of different feed-in tariff design options: best practice paper for the international feed-in cooperation. *Energy Economics Group & Fraunhofer Institute Systems and Innovation Research, Germany*. 2008.
13. Klieštík, T., Belás, J., Valášková, K., Nica, E., & Durana, P.: Earnings management in V4 countries: the evidence of earnings smoothing and inflating. *Economic Research-Ekonomska Istrazivanja*. 2020.
14. Klieštík, T., Valášková, K., Lazaroiu, G., Kováčová, M., Vrbka, J.: Remaining financially healthy and competitive: the role of financial predictors. *Journal of Competitiveness*. 2020, 9(3), 74-92.
15. Klieštík, T., Vrbka, J., Rowland, Z.: Bankruptcy prediction in Visegrad group countries using multiple discriminant analysis. *Equilibrium-Quarterly Journal of Economics and Economic Policy*. 2018, 13(3), 569-593.
16. Kyoto Protocol: A Kyoto protocol to the United Nations framework convention on climate change. *United Nations – treaty collection*. [online] 1977. Available at: https://treaties.un.org/Pages/ViewDetails.aspx?src=IND&mtmsg_no=XXVII-7-a&chapter=27&clang=en
17. Machová, V., Horák, J.: GDP as a risk factor of Czech enterprises. *Proceedings of the 13th International Management Conference: Management Strategies for High Performance (IMC2019): International Management Conference*. 2019, 785-798. ISSN 2286-1440.
18. Maroušek, J.: Study on agriculture decision-makers behavior on sustainable energy utilization. *Journal of Agricultural and Environmental Ethics*. 2013, 26(3), 679-689.
19. Menind, A., Olt, J.: Biogas plant investment analysis, cost benefit and main factors. *8th International Scientific Conference Engineering for Rural Development*. 2009, 339-343.
20. Oetzel, J. M., Bettis, R. A., Zenner, M.: Country risk measures: how risky are they? *Journal of World Business*. 2001, 36(2), 128-145.
21. Pimonenko, T., Bilan, Y., Horák, J., Starchenko, L., Gajda, W.: Green brand of companies and greenwashing under sustainable development goals. *Sustainability*. 2020, 12(4).
22. Sayadi, A. R., Tavassoli, S. M. M., Monjezi, M., Rezaei, M.: Application of neural networks to predict net present value in mining projects. *Arabian Journal of Geosciences*. 2014, 7(3), 1067-1072.
23. Vasilkov, Y., Gushina, L.: Management of internal risks and opportunities of enterprises. *International Journal for Quality Research*. 2015, 9(3).
24. Vinš, P., Liška, V. (2005). *Rating*. Prague: C.H. Beck. ISBN 80-7179-807-X.
25. Wallace, C., Latcheva, R.: Economic transformation outside the law: corruption, trust in public institutions and the informal economy in transition countries of Central and Eastern Europe. *Europe-Asia Studies*. 2006, 58(1), 81-102.
26. Wiesemann, W., Kuhn, D., Rustem, B.: Maximizing the net present value of a project under uncertainty. *European Journal of Operational Research*. 2010, 202(2), 356-367.

Primary Paper Section: A

Secondary Paper Section: AH

ELECTRONIC EDUCATION AND ONLINE TEACHING AT SLOVAK UNIVERSITIES DURING THE COVID-19 PANDEMIC

^aVLADIMÍRA HLADÍKOVÁ

Faculty of Mass Media Communication, University of Ss. Cyril and Methodius in Trnava, Nám. J. Herdu, 2, 917 01 Trnava, Slovakia
 email: *vladimira.hladikova@ucm.sk*

Abstract: The comprehensive education system in 2020 was significantly limited at all levels by the global pandemic of the coronavirus SARS-CoV-2. Universities modified the organization of teaching and transformed study into cyberspace, so teaching could continue in a distance form using e-learning, webinars, or other digital education tools. The paper focuses on the issue of university education during the first wave of the pandemic and has the character of a theoretical-empirical study. The first part presents the basic theoretical background of the researched issue from the perspective of various authorial approaches. The key is the empirical part, in which the results of research conducted among students are interpreted to find out their experiences, attitudes and preferences in the context of online teaching during the COVID-19 pandemic. The research involved 730 respondents from sixteen Slovak universities. In conclusion, the author appeals to the importance of digital and media literacy so online teaching can be considered an effective and equivalent tool to the full-time form of study.

Keywords: COVID-19 pandemic, education, information and communication technologies, online teaching, students, teachers, preferences, research.

1 Introduction

The year 2020 was marked by radical changes in the functioning of all areas of life. The cause of these socio-political, cultural, and economic changes was the emergence of a global pandemic of the coronavirus SARS-CoV-2, which affected all continents and every individual. It is obvious that these changes also affected the field of education and the organization of the educational process itself. As a result of the constant spread of the coronavirus, schools and educational institutions on all continents have been closed. Education has transformed dramatically – with a significant increase in e-learning and other forms of distance learning, which is implemented at distance and on various digital platforms.

For more than 300 million students worldwide, the learning process is disrupted by a pandemic. Neither schools nor universities have encountered a similar situation for generations, but unlike in the past, we are now able to continue our education even when schools are closed. With the spread of the COVID-19 pandemic, there has been an increasing shift towards online learning, as it represents the only option for a continuous learning process. Informal and non-formal education is also particularly affected. However, there is a firm presumption that no pedagogical approach can replace the top position of formal education and direct teacher interaction. However, because of the COVID-19 crisis, online education has begun a pedagogical shift from the traditional method to a modern teaching approach, from classroom to Zoom, from personal to virtual contact, and from seminars to webinars. In the pre-pandemic period, e-learning, distance learning and courses were popularly considered part of non-formal education, but at present it seems that if circumstances persist for a long time, these forms will gradually replace the formal education system. One can only agree with Lederman's (2020) standpoint that, because of the COVID-19 crisis, both teachers and students have found themselves forced to accept digital academic experience as a summum bonum of the online teaching and learning process.

Therefore, the main aim of this paper was to find out what are the experiences, attitudes, and preferences of students at Slovak universities in the context of online teaching carried out in the first wave of the pandemic in the summer semester of the academic year 2019/2020.

2 Digitization and use of information and communication technologies in the educational process

How is it possible to define the educational process? The educational process should inform (educate), shape (tutor) and should also have an instrumental function. According to M. Bošňáková (2006), that refers to the international pedagogical terminology of UNESCO IBE Educational Thesaurus 1991, the educational process is one *“in which a pupil (educant) and a teacher (educator) enter into communication contact for the purpose of transmitting information”*. In the educational process, a complex personality is formed with the help of acting educational elements, that uses the acquired skills, knowledge, and habits as a tool for:

- obtaining information from any sources of information;
- internal, thoughtful processing of information;
- use in practice at the current time, in the current context and conditions.

In this context, we can also mention E. Petlák (1997), who specifies what skills students should develop in the educational process:

- a) ability to learn (planned, systematic and organized);
- b) remember the subject matter (repeat, practice, sort ...);
- c) think logically correctly, accurately and thoroughly (analyse, synthesize, deduce ...);
- d) observe things and phenomena (capture the essence, objectively assess, use observation techniques ...);
- e) approach the facts creatively (actively acquire knowledge, organize work ...).

At the same time, the author says that *“the ideal is no longer a student as a “living encyclopaedia”, but a capable and creative person who can use, combine and supplement the knowledge he has acquired or is acquiring creatively.”*

Z. Obdržálek (2000) adds that the teaching process can be described as a dialectical, contradictory, complex multifactor and conflicting event, which develops based on causal links, while it is goal oriented. It includes the teaching activity of the educator and the learning activity of the pupil, i.e., two partial processes between which a certain tension takes place and whose roots lie in the opposite relationship between the educator's leadership and the educant's independence.

The expansion of science and technology supports efforts to modernize the goals, content, and forms of the educational process itself. The maturity, development, and breadth of application of modern means of information and communication technology are becoming one of the basic criteria for the success of the society. It is therefore clear that education and the educational process are significantly influenced by the state of development of information and communication technologies (ICT). We identify with the statement of Kozik et al. (2016) that *“today's society is adopting an education strategy that is based on teaching supported by information and communication technologies”*.

The currently achieved level of ICT allows their use in every phase of the teaching process (e.g., motivational, fixative, etc.). Their application brings certain advantages to the educational process, but also disadvantages. We define the specific aspects in the following table.

Table 1: Advantages and disadvantages of implementing ICT in the educational process

ADVANTAGES	DISADVANTAGES
Active motivation of learners.	A more superficial perception of the teacher's presentation by students.
Interactivity, given the possibility of direct entry of the student into teaching.	Preparation of teachers to teach is time consuming.
A constructivist approach to acquiring new knowledge. Student does not acquire the finished knowledge but must work on it themselves.	Creating a presentation for a teacher for one lesson seems ineffective from his/her point of view.
Supporting the creative approach of learners to the tasks or gaining knowledge.	Possible failure of technology or connection failure during classes.
Quick feedback on students' level of knowledge.	

Source: KOZÍK, T. et al.: *Vzdialené experimenty v edukácii*. Nitra: Univerzita Konštatína Filozofa v Nitre, 2016, p. 17-18.

It should be emphasized that the implementation of ICT in the teaching process does not mean the displacement of classical forms of education, but the contribution of *a new quality* of the educational process.

There are many opinions on what exactly means the use of information and communication technologies in the field of education. According to V. Stoffová (2001), information technologies are at the most general level methods, procedures and ways of collection, storage, processing, verification, evaluation, selection, distribution, and timely delivery of the necessary information in the required form and quality. D. Vasiľová – J. Alenauer (2001) state that it is a set of technologies used in the processing of information systems (word processors and spreadsheets, e-mail, laptops, communication management, marketing databases, mobile data communications, corporate intranets, calls via computer, geographic infosystems or the Internet / www).

We agree with J. Kalaš (2000) that ICT uses computing and communication tools that support teaching, learning and other activities in the field of education in various ways. In this context, he understands ICT as technologies related to the collection, recording and processing of information. To do this, they use:

- traditional media such as television, video and radio;
- personal computers with multimedia support;
- input and output devices, means for digitization, reading, control and measurement;
- the Internet and its services;
- integrated educational programs (i.e., complex computer environments focused on learning);
- means for videoconferencing;
- electronic and programmable toys;
- automatic sensors, recorders, and devices for automatic data evaluation.

J. Průcha, E. Walterová and J. Mareš (2001) characterize new technologies in teaching as modern means of didactic technique, didactic programs and new forms of teaching inspired by them. These include in particular:

- networks (local computer networks, online libraries and other sources of information, e-mail, videoconferencing in distance education, business education, etc.), on various media (e.g., CD-ROM);
- multimedia, which combines different forms of data storage (video, hypertext, two- and three-dimensional animations, etc.);
- mobile devices and approaches supporting flex schooling and wireless LAN networks, laptops, systems enabling education, "just in time" learning, etc.

In this context, E. Fulková (2004) formulated several changes that are a consequence of the implementation of ICT in educational processes as follows:

- improve the conditions for access to the curriculum;
- act as part of classical teaching;
- allow easier and better understanding of the curriculum;
- increase attention and reduce student fatigue;
- cause a change in teaching methodology;
- increase the motivational effect;
- enable more effective repetition, consolidation and deepening of the curriculum;
- increase the degree of systematic nature of teaching;
- improve clarity and others.

A significantly positive pedagogical aspect is the possibility of self-education, interactivity, feedback information and practicing the necessary skills according to the individual needs of the student. At the same time, the use of ICT in education also increases pupils' information and digital literacy. Shortcomings include weak social contact with the educator or various technical failures and limitations. Generally, information and communication technologies facilitate the transition from theory to practice and can help increase the effectiveness of education. The most well-known forms of education using ICT include, e.g., e-learning, m-learning, webinars, or electronic conferences.

Due to the presence of the aggressive disease SARS-CoV-2, the year 2020 offered the possibility of absolute implementation of information and communication technologies into the educational process and their massive use. It was the only way to continue teaching at all levels of study. Several advantages and disadvantages of this form of education have been proven both on the part of teachers and on the part of students. However, the real impact on education and students will only be discussed later.

3 The main aim and methodology of the research

The main aim of this paper was to examine the experience of Slovak university students with online teaching during the first phase of the COVID-19 pandemic, based on theoretical background and empirical research.

In examining these contexts, we decided to use a quantitative research strategy because it results in diverse data. The basic tool of quantitative research was a self-designed questionnaire, which contained several questions of various natures. Methods of analysis, synthesis, comparison, as well as data generalization or their graphical representation were used in the evaluation and interpretation of research results. Since the research was exploratory (we examined the organization and course of online teaching, student preferences, subjectively perceived advantages and disadvantages of online teaching in the context of a coronavirus pandemic), we did not formulate hypotheses in this case, but based on a comparison of professional literature and previous research on given issue, we formulated several assumptions. For the purposes of this paper, the following assumptions are topical:

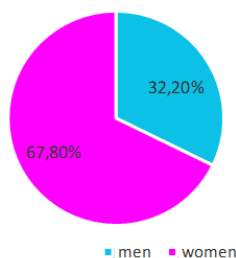
1. We assume that most respondents prefer the method of live lectures in real time in online teaching during the COVID-19 pandemic.
2. We assume that most respondents consider the absence of contact with a teacher to be the biggest disadvantage of online teaching during the COVID-19 pandemic.
3. We assume that most respondents report a problem with concentration during online teaching.

We analysed the obtained data, evaluated them, and drew certain conclusions and opinions, which we present in the next chapter of the paper.

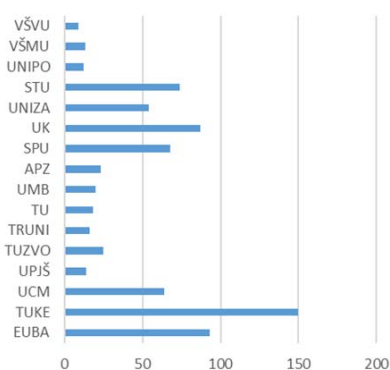
4 Interpretation of research results

The first part of the questionnaire was devoted to the demographic data of the respondents (gender, university affiliation). The research was attended by 730 respondents – students at Slovak universities. In total, students from 16

universities in Slovakia participated in the research. In the following graphic overviews, we present the identification data of the respondents from the research sample.

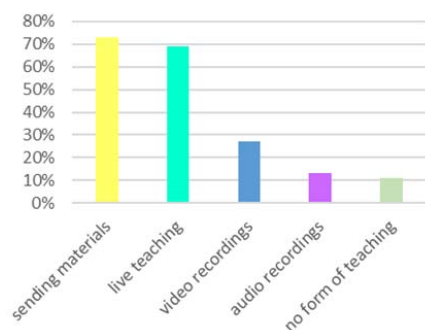


Graph 1: Age of respondents
Source: own processing



Graph 2: Number of students and affiliation to the university
Source: own processing

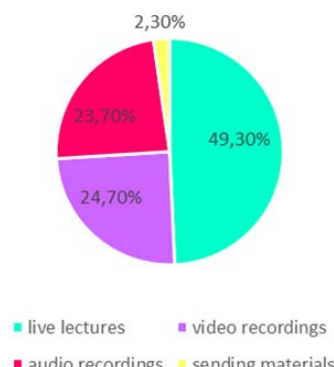
At the beginning of the questionnaire, we asked students how teaching is organized at their school during the COVID-19 pandemic. In this question, respondents had the opportunity to mark several answers. Almost 73 % of respondents said that most of them only receive documents in the form of lectures or other teaching materials via e-mail. The second most frequent alternative is the organization of live teaching in real time through live lectures and seminars. Approximately one third of the respondents stated that the teaching is carried out through video recordings (e.g., on YouTube) and 13.2 % of the respondents also marked the option of teaching only in an auditory form – the teaching is recorded on audio recordings that are made available to students. Interestingly, 11 % of all respondents said they did not have any online classes and teaching was not replaced or provided in any specific way.



Graph 3: A method of online teaching organization
Source: own processing

In Question 4, we asked the respondents which of the mentioned options of distance education organization they prefer the most. Almost half of all respondents are inclined to live teaching – hence, in real time. Approximately a quarter of respondents (23.7 %) prefer teaching exclusively by sending study materials,

assignments, or presentations, and 24.7 % of respondents prefer video recordings. According to the research sample, the least attractive form of online teaching is teaching only through audio recordings, to which only 2.3 % of respondents admitted. These results are understandable, as it is in audit teaching that other important forms of perceptions are absent – especially visual ones, which are extremely important in the study. They strongly support concentration and other cognitive processes, especially the process of memorizing information that can be considered key and strategic in learning. In this context, it can be stated that Assumption 1, that *most respondents prefer the method of live lectures in real time in online teaching during the COVID-19 pandemic* has been partially confirmed.



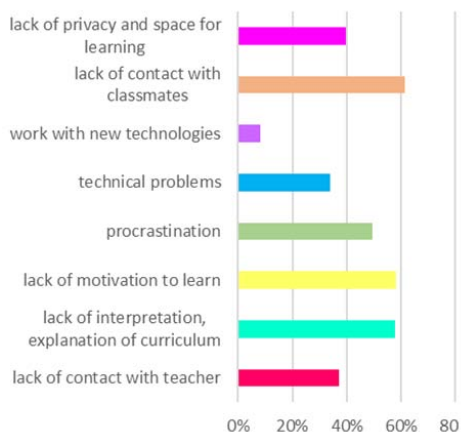
Graph 4: Preferred method of online teaching
Source: own processing

In the following part of the questionnaire, we investigated how students most often communicate with teachers and through which platforms online teaching is implemented at their university. For both questions, students had the opportunity to mark multiple answers. By far the most dominant form of communication has become e-mail communication between the student and the teacher, approximately one-fifth of the research sample also prefers a video call, e.g., via Skype. Less than 6 % of respondents also use more personal contact for communication through telephone calls, most often when consulting final theses or other assignments and term papers. According to the research sample, the most frequently used online communication platform is the Microsoft Teams platform, which is used by almost 64 % of students, the second most popular is the e-learning software Moodle, which use approximately 49 % of respondents. Frequently used platforms include Zoom (16.6 %), Google Hangouts (11.8 %), Skype (11.2 %) and Webex (2.2 %). A few students stated that online teaching is also implemented through YouTube, Outlook, the academic information system AIS, Discord or Facebook.

In research, we were also interested in which form of teaching students generally prefer. Although at first glance it might seem that online teaching will be more popular, the results of the research showed that more than 60 % of respondents do not prefer this method and, conversely, they lean towards the classic full-time form of teaching. We also asked respondents if they would like teaching to take place online only in the future. The answers pleasantly surprised us, as up to 79 % of respondents clearly stated that they would not prefer such a possibility. Regarding the intensity of study during online teaching, most respondents answered that they study less than during the classic semester during full-time teaching. About a quarter of respondents feel that they study with the same intensity and level both online and in full-time teaching. Almost a third of students show a higher level of study intensity in the online form, which was a surprising finding.

Another aim of our study was to find out what are the most common advantages and disadvantages that respondents perceive in connection with online learning during the COVID-19 pandemic. For both questions, they had the opportunity to mark several answers. The biggest advantages of this form of

education are considered by students to be the fact that teaching is carried out from home and they do not have to travel for education (71.4 %). Related to this is the fact that almost 67 % of respondents also see economic benefits in distance education – saving on food, accommodation, transport, etc. Approximately 60 % of respondents also consider some form of time flexibility to be a benefit, e.g., that they can watch the recording of the (video) lecture at a time of their choice. More than half of the students stated that they also considered the fact that there is no need to get ready, use make-up and the like to be an advantage. Almost 23 % of respondents also consider the acquisition of new digital skills and knowledge regarding the use of platforms and digital tools for online learning to be positive. According to some students, online learning has no benefits and is difficult for them to study in such way. The biggest surprise, however, was the result, in which 51 % of respondents mentioned the great advantage of online teaching to be the fact that in addition to learning, they can do several other things (watch series, listen to music, etc.). This possibility clearly cannot be considered a positive, as the learning process should not be disrupted by other influences. This digital and media multitasking leads to a lower level of concentration, memorization of knowledge, impaired thinking, or other problems in the context of education.



Graph 5: Disadvantages of online learning
Source: own processing

Graph 5 presents the disadvantages that students perceive in the context of online teaching during the COVID-19 pandemic. According to most students, the biggest disadvantage of distance education is the absence of social contact with classmates, which was indicated by 61.5 % of respondents, insufficient contact with the teacher is negatively assessed by almost 38 % of students. Students also consider the lack of motivation to learn to be a significant problem, which was supported by more than 58 % of respondents. In addition to weak social contact with peers, respondents also have a negative perception of online interpretation or insufficient explanation as well as understanding of the study topic (57.7 %), or of procrastination, which is experienced by almost half of the entire research sample. About 40 % of students said that the weakness of online learning is the fact that they do not have enough privacy and space to concentrate when learning from home – they are often disturbed by various stimuli (other household members, other responsibilities determined by parents, etc.). One third of respondents also report technical problems, such as a bad internet signal, poor connection or poor sound or video quality, and less than 9 % of respondents also consider the fact that they have to learn to work with new programs, technologies or other platforms through which online teaching is implemented, as negative. Approximately one percent of all respondents believed distance learning has no disadvantages. Within the “Other” category, students most often stated that online study is much more difficult, especially in cases where they do not understand the lectured curriculum, they also negatively assess teacher readiness, lack of study materials but also the fact that laboratory exercises are replaced by theoretical lectures and practice is

absent. Based on these results, it can be stated that Assumption 2, that most respondents consider the absence of contact with a teacher to be the biggest disadvantage of online teaching during the COVID-19 pandemic was not confirmed.

At the end of the questionnaire, we were interested in the respondents' opinion on selected statements related to online education in the context of the pandemic – we asked to what extent they agree with the submitted statements.

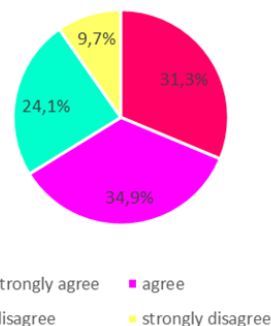
Statement 1: *I have more trouble concentrating in online teaching than in full-time teaching.*

Statement 2: *I achieve better results and evaluation in online teaching than in full-time teaching.*

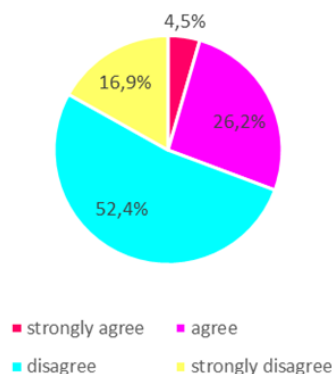
Statement 3: *My teachers have adapted well to online teaching.*

The results in this context yielded interesting data. More than 66 % of the research sample agrees with Statement 1, thus identifying with the results of other more general research. These clearly show that the impact of digital technologies on the learning process is tangible and has negative consequences. Especially in the context of the specifics of cyberspace and digital media and thus a new type of rhizomatic thinking, problems with concentration on lectures or assignments are often mentioned in connection with learning. In this context, it can be stated that Assumption 3, that most respondents report a problem with concentration during online teaching was confirmed.

Related to this are the results of expressing agreement or disagreement with the second statement, which applies to the learning outcomes of online teaching during the COVID-19 pandemic. Only less than a third of the research group said that the evaluation and results of the study are better for them especially during online teaching. However, almost 70 % of respondents do not agree with this statement. Therefore, it can be stated that the distance method of online education does not, according to students, have a sufficiently motivating effect on their study results.

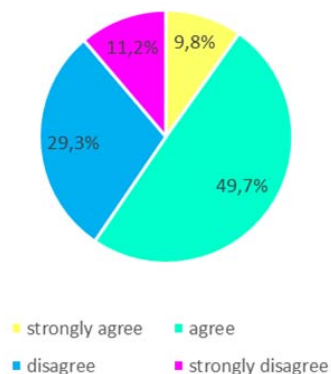


Graph 6: I have a problem with concentration
Source: own processing



Graph 7: My performance and grades have improved
Source: own processing

In the last statement, we wanted to know the opinion of students on the readiness and adaptation of their teachers to the online teaching process. Almost 60 % of respondents said that teachers were able to adapt to the new conditions and adapted well to online teaching. However, approximately 11 % of students are of the opinion that the process of modifying the educational process was not sufficient and do not agree that teachers have sufficiently adapted to the virtual environment and distance learning.



Graph 8: Teachers have adapted well to online teaching
Source: own processing

5 Conclusion

Due to its severity and abruptness, the SARS-CoV-2 coronavirus pandemic is described as the greatest global health crisis in centuries in human civilization. It can be confirmed that its rise destroyed everything from world economies to social rituals and partially halted and later specifically transformed the educational process.

Global disruption of education can often pose a greater threat to most children and students than the virus itself. The presence of COVID-19 in the future will directly and permanently change education, as it is necessary to be able to adapt to work and study online for any reason and situation. The paper presents the opinions, attitudes, and preferences of students regarding the implementation of online teaching, while it was clearly confirmed that respondents prefer direct contact with the teacher, full-time teaching, and social contact with classmates. When evaluating the adaptation to online teaching and study administration, only 43 % of students stated that their university was able to adapt to the new situation very well or excellently. However, it can be clearly stated that only time will show whether online lessons are an effective and sufficient substitute for full-time teaching. Since education can be considered as one of the basic pillars of societies, in conclusion we can only appeal to increase digital and media literacy on the part of both students and teachers so that the process of education in the online environment can be perceived as effective, beneficial, and sustainable.

Literature:

1. Bošňáková, M.: *Základy pedagogiky*. Bratislava: Vysoká škola zdravotníctva a soc. práce sv. Alžbety, 2006. 67 p. ISBN 80-89271-07-3.
2. Fulková, E.: Niektoré teoretické aspekty využívania informačno-komunikačných technológií vo vysokoškolskom vzdelávaní v novom milénií. In: *Medzinárodné vedecké dni „Európska integrácia- výzva pre Slovensko“*: Zborník vedeckých prác. Nitra: SPU, 2004. 170 p. ISBN 80-8069-355-2.
3. Kalaš, I.: *Čo ponúkajú informačné a komunikačné technológie iným predmetom (1. časť)*. Asociácia projektu Infovek Katedra vyučovania informatiky FMFI UK. [online]. [2020-12-01]. Available at: <www.infovek.sk/konferencia/2000/prispevky/ikt.html>.
4. Kozík, T., Šimon, M. et al.: *Vzdialené experimenty v edukácii*. Nitra: Univerzita Konštantína Filozofa v Nitre, 2016. 148 p. ISBN 978-80-558-1026-3.

5. Lederman, D.: *Will Shift to Remote Teaching Be Boon or Bane for Online Learning?* [online]. 2020. [2020-12-03]. Available at: <https://www.insidehighered.com/digital-learning/article/2020/03/18/most-teaching-going-remote-will-help-or-hurt-online-learning>.
6. Obdržálek, Z.: *Didaktika pre študentov učiteľstva základnej školy*. Bratislava: Univerzita Komenského, 2000. 96 p. ISBN 80-223-1438-2.
7. Petlák, E.: *Inovácie v edukačnom procese*. Dubnica nad Váhom: Dubnický technologický inštitút, 2012. 158 p. ISBN 978-80-89400-39-3.
8. Průcha, J., Walterová, E., Mareš, J.: *Pedagogický slovník*. Praha: Portál, 2003. 322 p. ISBN 80-7178-772-8.
9. Stoffová, V. et al.: *Informatika. Informačné technológie a výpočtová technika: terminologický a výkladový slovník*. Nitra: FPV Univerzita Konštantína Filozofa v Nitre, 2001. 219 p. ISBN 80-8050-450-4.
10. Vasiľová, D., Alcnauer, J.: Informačné technológie v príprave učiteľov dejepisu. In: *Slovenské školstvo v kontexte európskej integrácie*. Nitra: Ústav technológie vzdelávania PF UKF, 2003. p. 481-486. ISBN 80-8050-599-3.

Primary Paper Section: A

Secondary Paper Section: AJ, AM

PARTIAL COGNITIVE FUNCTIONS AND READING COMPETENCE OF STUDENTS WITH MILD INTELLECTUAL DISABILITIES

^aBIBIÁNA HLEBOVÁ, ^bJANA KOŽÁROVÁ

Faculty of Education, University of Prešov in Prešov, Str. 17. novembra 15, Slovak Republic
 email: ^abibiana.hlebova@unipo.sk, ^bjana.kozarova@unipo.sk

Study is the partial outcome of the research project APVV-15-0071 *Man with handicap in the literature for children and youth* (2016 – 2020).

Abstract: Aim of the research study is to analyse the relationship between partial cognitive functions (visual separation – figure/background differentiation, visual differentiation of shapes, visual memory, auditory separation - figure/background differentiation, auditory differentiation of speech, auditory memory, intermodal relations, perception of time sequence) in the context of reading competence development (reading technique and method, reading comprehension) of 4th grade pupils with mild intellectual disabilities educated in school integration in the Prešov region, Slovakia, in which we have followed current level of the variables (reading competence, partial cognitive functions) in selected research respondents. The research findings might contribute to the creation of targeted cognitive stimulation programme in the context of reading competence development of pupils with mild intellectual disabilities in younger school age.

Keywords: partial cognitive functions, reading competence, a pupil with mild intellectual disability, school integration.

Intention of the study roots in the current educational issue in Slovakia, which is related to full-valued and functional education of students with mild intellectual disabilities in the school inclusion settings. Our intention is focused on the issue of reading competence development through the stimulation of partial cognitive functions, which is a part of curricula of Slovak language and literature in elementary school (ISCED 1, 2016). It is necessary in this discourse that a teacher, in a process of school inclusion, will improve this key competence in pupils with mild intellectual disabilities as possible and in regard to current developmental state of their cognitive processes, because we cannot accept that the development of partial cognitive functions will be equable in each pupil, resp. that all the partial cognitive functions will be developed equably, which to a large extent predict also a level of their academic skills, including reading. A teacher cannot omit spontaneous individual development of a pupil with mild intellectual disabilities, which is delayed, but ongoing and thus predicts his learning potential.

The subject of our interest is searching the way, how to overcome dysfunctions, which a pupil with mild intellectual disabilities (MID) in the process of acquiring reading competence (reading technique and method, reading comprehension) has. In this regard we formulate the main objective – analyse the mutual relationship between selected partial cognitive functions in the context of reading competence development in pupils with mild intellectual disabilities educated within the school inclusion in 4th grade of elementary school, in fulfilling which we based on current level of the variables (reading competence, partial cognitive functions) in selected research respondents. Since there have not been noticed any similarly focused researches, our research findings were compared with available literature in the end.

1 Cognitive aspects of the reading competence stimulation of pupils with mild intellectual disabilities

The attributes of cognitive modifiability, respect for a pupil's potential including the student's complex development, these are the preconditions standing behind the philosophy of cognitive education which focuses, besides acquisition of knowledge and skills in individual learning areas, on the targeted development of cognitive processes needed by the pupil to master the curriculum as well as everyday life (Liptáková, 2012; Kovalčíková, 2010, 2017). It is viewed as a “purposeful and systematic development of the plasticity of functioning and use of the “matured” and the yet immature cognitive structures, as well as the development of future modifiability of thought under the influence of direct or indirect perception and recognition of

the stimuli coming from the environment” (Kovalčíková, 2010, p. 38). Leebler (2006) adds that this teaching approach is process-oriented, i.e. it does not focus on the acquisition of knowledge, but also on how it is acquired, making this approach different from the traditional approach of education which is mainly result-oriented.

Strategies employed by a pupil in reading need to be considered as well. Of course, these vary depending on whether the reading is a beginner's reading or advanced reading. The Education Program for Pupils with MID (ISCED 1, 2009, 2016) incorporates the option of teaching strategy application into the learning-how-to-learn competence. Here we should realise that it is the teacher who drives a pupil to acquire this competence employing appropriate teaching styles (Terry, 2002; Ewing et al., 2011).

These pupils allow us to state that cognitive theory has disproved the outdated hypotheses claiming that pupils with lower intellect are unable to develop complex thought processes and cognitive functions. This is also confirmed by Sindelar (2007), Pokorná (2010), Medina (2012) who advocate the opinion that brain damage manifested as lower intellect (below-average IQ) does not necessarily mean that the cognitive processes (attention, perception, memory) have to be below average as well. On the contrary, they rather emphasise that partial cognitive functions predicate and influence school success more than the intellect, this also applies to the key skill of reading, which is not dependent primarily on the intellect, but on the development of cognitive functions. This opinion is also reflected in the research works of Stanovich (1986), Perfetti & Lesgold (1977, In: Blachman, 1991), Siegel (1999, In: Pokorná, 2010a), Blachman, (1984, 1989), Wagner (1986), Wagner & Torgesen (1987), Williams (1986) (In: Pokorná, 2010a), Feuerstein et al. (2002, 2008).

According to psycho-assessment, in Slovakia as the most complex method for assessment and remedy is considered the method Deficits of cognitive functions (Sindelar, adapted by Černý, 2008), which aim is to recognise in detail, in which perceptual and cognitive functions a pupil of school age manifests developmental deficit. This method aims to identify in detail the perceptual and cognitive functions showing developmental deficit in the pupil in order to develop an individualised remedial program, because the pupil does not suffer from the deficit itself but rather from its effect which manifests itself in school skills. The methodology offers training materials elaborated in detail for stimulation of individual partial cognitive functions respecting the order and succession of the cognitive development of a pupil (Sindelar, 2008). Different cognitive processes do not work in isolation but are intensively interconnected and are exhibited in the form of partial functions (basic, fundamental functions) in cognitive area. These are defined by Sindelar (2007, p. 8) as “...basic abilities which allow differentiation and development of higher mental functions, such as speech and thought. In the next development, they are prerequisite for the skills of reading, writing and appropriate behaviour.” If their development is uneven, i.e. they are immature and less developed than the others, it results in the so-called deficits of partial functions. Graichen (1973, In: Pokorná 2010a, p. 95) defines them as a “decreased performance of individual factors or elements within a larger functional system which is necessary to master certain complex adaptation processes.” Sindelar (2007, p. 8) defines them as “weakening of basic abilities which leads to problems with learning and behaviour.”

We have been inspired by the method Deficits of partial functions in creation the cognitive stimulation programme in the context of reading competence development of pupils with MID in younger school age. The basis for its creation was examination of currently achieved level in the dimension of

partial cognitive functions and the level in the dimension of reading competence. Therefore, the objective is to analyse the relationship between the selected variables (reading competence, partial cognitive functions) of 4th grade pupils with mild intellectual disability educated in the conditions of school inclusion at the Slovak Language and Literature classes. This creates a research space, within which the research intentions in the context of examination of current level of reading competence and partial cognitive functions in cognitive processes of pupils with MID educated in school inclusion in elementary school is formulated.

2 Materials and Methods

Research problem and hypotheses formulation

Authors Doidge (2012), Medina (2012), Siegel (2003), Rolloff (1989, In: Sindelar, 2008), Stanovich (1986), Perfetti & Lesgold (1977, In: Blachman, 1991), Pokorná (2010b), Co-author (2015); Zezulková (2011), Valenta & Petráš et al. (2012), Žovinec (2014) point out the causal influence of cognitive processes and the related partial cognitive functions on school skills (reading, writing, counting, etc.) allowing us to deduce that these predictors also influence the reading competence of the pupils with MID despite their deficiencies stemming from the primary diagnosis. Therefore, our task is to uncover mutual relations between reading competence and partial functions in cognitive processes, employing targeted cognitive stimulation of this competence. Even though researchers have been paying enough attention to this issue in recent times, there has been no research which would analyse the mutual relationship between reading competence of the pupils with MID and partial cognitive functions.

The research problem was formulated as follows: What is the mutual relationship between the reading level (reading technique and method, reading comprehension) and the level (or deficits) of partial cognitive functions of 4th grade pupils with mild intellectual disability educated in school inclusion? Since we have not gained any relevant information concerning this view, we have also been searching for the answers to the research questions which have resulted from the research problem:

What is the reading level (reading technique and method, reading comprehension) of 4th grade pupils with mild intellectual disability educated in school inclusion?

Which deficits in partial cognitive functions are exhibited in 4th grade pupils with mild intellectual disability educated in school inclusion?

The main objective of the research is to analyse the relationship between the selected variables (reading competence, partial cognitive functions) of 4th grade pupils with mild intellectual disability educated in the conditions of school inclusion at the Slovak Language and Literature classes.

In relation to the main research objective and the analysis of the relationship of the selected variables (reading competence, partial cognitive functions), we formulate the following research hypotheses:

Hypothesis 1: The reading level within the reading method of 4th grade pupils with mild intellectual disability educated in school inclusion at an elementary school is under the statistically significant influence of the level of partial cognitive functions.

Hypothesis 2: The reading level within the mistakes in reading technique of 4th grade pupils with mild intellectual disability educated in school inclusion at an elementary school is under the statistically significant influence of the level of partial cognitive functions.

Hypothesis 3: The reading level within the reading comprehension of 4th grade pupils with mild intellectual disability educated in school inclusion at an elementary school

correlates to a statistically significant extent with the level of partial cognitive functions.

Deductions from hypotheses 1, 2, and 3

In the hypothesis testing process, we work on the assumption that specific modalities (visual perception, auditory perception, tactile perception and kinaesthetic sense, memory, perception, attention) are one of the pillars of reading competence (reading method and technique, reading comprehension). These modalities are not isolated from each other, but overlap and can be observed as partial cognitive functions (visual separation or background/figure differentiation, visual differentiation of shapes, visual memory, auditory separation or figure/background differentiation, auditory differentiation of speech, auditory memory, intermodal relation, time sequence perception, tactile perception and kinaesthetic sense, spatial orientation) which are necessary for a pupil to produce a complex outcome, i.e. to be able to read, write, etc. Therefore, we suppose that the fewer deficits pupils with MID show in partial cognitive functions, the higher the level of their reading competence (reading technique and method, reading comprehension). This relationship is also indicated by specialised literature which describes the influence of cognitive functions on school skills (Blachman, 1991; Siegel, 2003; Leber, 2006; Sindelar, 2007; Pokorná, 2010; Zezulková, 2011; Doidge, 2012; Liptáková, 2012; Krejčová, 2013; Žovinec, 2014) and we use it to support our presupposition.

Variable operationalisation

We will work with the following variables in the above-mentioned hypotheses:

1. Reading competence of a pupil with mild intellectual disability, where the attention will be focused on the level of reading technique and method, reading comprehension, which a pupil with MID in the 4th grade of elementary school is supposed to have. In this regard their dependence on partial cognitive functions, with the intention to point out their mutual relationship, resp. individual differences in the research sample will be analysed.
2. Partial cognitive functions of a pupil with mild intellectual disability, where partial cognitive functions mean cognitive functions which are not isolated, but overlap each other and can be observed in the form of partial cognitive functions, i.e. visual separation (background/figure differentiation), visual differentiation of shapes, visual memory, auditory separation (figure/background differentiation), auditory memory, tactile perception and kinaesthetic sense, spatial orientation. In this regard the dependence of reading competence level on partial cognitive functions, with the intention to point out their mutual relationship, resp. individual differences in the research sample will be analysed.

Research methods and research tools characteristics

To acquire representative data, we used a test as the research method and this test consisted of oral exercises. The test battery consisted of Deficits of Partial Functions (Sindelar, adapted by Černý, 2008), Pedagogical Diagnostics of Reading of the Pupils (Čizmarovič & Kalná, 1991). These tests are, based on specification of the objectives researched, knowledge tests classified as optimum performance tests (from the perspective of knowledge quality) with combined exercises (i.e. multiple choice and open response exercises) (Kompolt, In: Švec et al., 1998).

Pedagogical Diagnostics of Reading of the Pupils (Čizmarovič & Kalná 1991) is a test instrument to assess reading quality and analyse mistakes in a pupil's reading. Mistakes in the reading technique and method were scored in four main areas which were evaluated in more detail depending on the specification of the mistake made as follows: reading method area: a) spells, b) syllabifies, c) leaves words out, d) guesses words, e) double reading, f) fluent reading; mistakes in reading technique – this area consisted of two sub-areas: letters/sounds – a) confuses letters (confuses similarly shaped letters, confuses acoustically similar letters, confuses dissimilar letters), b) leaves letters out, c) adds letters; syllables – a) confuses syllables, b) leaves

syllables out, c) adds syllables; understanding – a) reproduces independently, b) reproduces only with the help of questions, c) does not understand the text)

Deficits of Partial Functions (Sindelar, adapted by Černý, 2008) is designed for the evaluation of partial cognitive functions. The test assesses the number of mistakes made by the pupil in an exam. This test contains oral exams, written exams and a practical exam. It consists of individual sub-tests focusing on: visual separation (figure/background differentiation) – exercise 9 – pictures, exercise 13 – words; visual differentiation – exercise 5, part 1 – pictures, exercise 5, part 1 – words; visual memory – exercise 11, part 1 – pictures, exercise 11, part 2 – pictures, exercise 11, part 3 – letters; auditory separation (figure/background differentiation) – exercise 2, part 1 – O, exercise 2, part 2 – N, exercise 6, part 3 – H, exercise 6, part 4 – EU; auditory differentiation – exercise 10; auditory memory – exercise 8, part 1 – sounds, exercise 8, part 2 – words 1, exercise 8, part 3 – words 2, exercise 8, part 4; visual-auditory intermodal relationship – exercise 14, part 1 – pictures, exercise 14, part 2 – letters; auditory-visual intermodal relationship – exercise 4, part 1 – words, exercise 4, part 2 – letters; time sequence perception – visual – exercise 7; time sequence perception – auditory – exercise 12.

Participants

The research was carried out in elementary schools in the Prešov Self-governing Region in Slovakia. To verify the research instruments, we made an intentional selection of the sample – 46 pupils with MID who were educated in the form of school inclusion in the 4th grade of an elementary school in the Prešov Self-governing Region, 26 boys (56.52%) and 20 girls (43.48%) – joined the testing. The testing involved students aged 10 to 12 years. The average age of students was 10.739 years. For statistical purposes, median at the level of 11 years was, considering the nature of the data, considered to be the mean value. The largest group – mode was comprised of students who had reached 10 years of age. All students (100%) attended the 4th grade of an elementary school, and for 26 of them (78.26%) it was the 4th year of school attendance and for 10 of them (21.74%) it was the 5th year of school attendance.

3 Results

3.1 Reading Competence of the Pupils with Mild Intellectual disability

Looking at the reading method of the pupils in the sample group allows us to state that their reading method is heterogeneous. According to the Education Program for Pupils with Mild Intellectual Disability (ISCED 1, 2009), 4th graders should be able to read short texts (in the area of reading technique) correctly and they should be able to comprehend the texts. What is more, they should already be training proper accent and natural intonation. However, the results (table 1) reveal that only 54.35% of the pupils have attained the fluent reading level, while 41.30% of the pupils utilise spelling in reading which should not occur by now in this grade. Double reading continues to be present in 47.83% of the pupils, whereas as many as 56.52% of the pupils guess words during reading and 26.09% of the pupils leave words out when reading.

A more detailed analysis of the mistakes in the reading technique and reading method revealed that dissimilar letters are confused by as many as 67.39% of the pupils; similarly, shaped letters are confused by 32.61% of the pupils; and 8.70% of the pupils confuse acoustically similar letters. Mistakes were also noted in adding letters, which occurred in 26.09% of the pupils, while 34.78% of the pupils left letters out. Syllables were confused by 10.87% of the pupils; 32.61% left syllables out; and 23.91% of the pupils added syllables, which is illustrated in table 2.

The deficits found in the reading method and the mistakes in reading technique of the pupils reflect insufficient acquisition of the reading comprehension skill, when only 26.09% of the pupils (12 pupils) of the total count were able to reproduce the text

independently; 30.43% of the pupils (14 pupils) could reproduce the text with the help of questions; as many as 43.48% (20 pupils) did not understand the text read (more details in table 3).

As regards reading duration, we found out that the average reading duration was 246.48 seconds. Since the data was not normally distributed ($p < 0.005$), the median which reached 168.50 seconds was taken as the mean value. The shortest time measured was 56.00 seconds, the longest 601.00 seconds. Based on the above data we can say that approximately 2/3 of the pupils read in a time span ranging from 56.00 to 340.17 seconds.

The average number of correctly read words was 66.70 words (out of the maximum 81 words). In the statistical processing of the number of correctly read words, the median (Med) reaching the level of 75 words was, considering the nature of data, taken as the mean value. The lowest number of correctly read words was 18, the highest 81 words. The average number of mistakes pupils made was 14.89. The median – 7 is taken as the mean value since the p-value calculated by the Anderson-Darling normality test is less than $\alpha = 0.05$. Not a single mistake has been observed with 6 pupils, the maximum number of mistakes was 65 (noticed with 1 student). The standard deviation is 18.27.

3.2 Partial Cognitive Functions of the Pupils with Mild Intellectual Disabilities

Relationship between Reading Competence and Partial Cognitive Functions

In order to be able to purposefully stimulate reading competence, we first need to know the cognitive determinants influencing it. Having collected the data above, we can now sink into evaluation and analysis of the relationships between the variables observed. The independent variable – reading competence – we measured was divided into the following areas: reading method, mistakes in reading technique, reading comprehension, and these areas were observed within this variable (considering the extent of the data collected, only the most significant data is provided). These measurable categories were then analysed in relation to the selected dependent variables, namely partial cognitive functions (considering the extent of the data collected, only the most significant data is provided). If the data entering statistical evaluation was not normally distributed, the non-parametric Mann-Whitney U-test was used to compare the groups. If the data was normally distributed, we used the parametric t-test. The calculated p-value in both tests was lower than 0.05, so there is a statistically significant difference between the analysed groups.

Relationship between Reading Competence – Reading Method and Partial Cognitive Functions

In the evaluation of the independent variable – reading method – the following categories were observed: spells, leaves words out, guesses words, double reading, fluent reading.

Based on the data provided in table 5, and the calculated p-value, it can be noted that pupils who employed spelling method in their reading (41.3% of the pupils) made more mistakes to a statistically significant extent in the areas of tactile perception and kinaesthetic sense ($p = 0.001$), auditory separation (figure/background differentiation) ($p = 0.000$), auditory differentiation of speech ($p = 0.038$), auditory memory ($p = 0.001$), visual separation (figure/background differentiation) ($p = 0.032$), visual differentiation of shapes ($p = 0.008$), two-dimensional spatial orientation ($p = 0.007$), time sequence perception – visual ($p = 0.013$), time sequence perception – auditory ($p = 0.000$) than the students who did not employ spelling method during their reading (58.7% of the pupils). Based on the results we can reason that this area is not directly related to visual memory ($p = 0.631$); however, all the more is it dependent on the other tiers of visual perception (visual separation, visual differentiation). Furthermore, a statistically significant difference was not confirmed in the area of spatial orientation – body scheme ($p = 0.188$), auditory-visual ($p = 0.174$) and visual-auditory intermodal relationship ($p = 0.070$).

Based on table 6 and the calculated p-value it is evident that pupils who leave words out in reading (26.08% of the pupils) make more mistakes to a statistically significant extent, mainly in the areas of visual separation (figure/background differentiation) ($p=0.005$) and in spatial (two-dimensional) orientation ($p=0.013$) than the students who do not leave words out in reading (73.91% of the pupils). This area is not, based on the calculated p-value, and directly related to auditory perception, visual differentiation and memory, spatial orientation – body scheme, time sequence perception and intermodal relationships.

Regarding the word guessing category, table 7 makes it evident that pupils (56.52%) who guess words in reading make more mistakes on a statistically significant basis in the area of auditory separation ($p=0.005$); these findings were confirmed in all three exercises in the subtest for this area. Furthermore, these pupils make more mistakes in the areas of auditory differentiation of speech ($p=0.001$), in visual separation ($p=0.031$), in time sequence perception-auditory ($p=0.000$), in visual-auditory intermodal relationship ($p=0.049$) than pupils who do not guess words in reading (43.48%).

Table 8 shows that pupils who are held back in the transition phase of double reading (47.83%) make more mistakes (statistically significant) in the area of auditory separation ($p=0.000$), auditory differentiation of speech ($p=0.001$), auditory memory ($p=0.002$), visual separation ($p=0.033$), visual differentiation of shapes ($p=0.018$), spatial orientation ($p=0.009$), time sequence perception-auditory ($p=0.000$), time sequence perception-visual ($p=0.028$), visual-auditory intermodal relationship ($p=0.020$) than pupils not employing double reading in reading.

The above facts were proved for the dependent variable fluent reading (table 9), since students whose reading method was fluent reading (45.65% of the pupils) made fewer mistakes on a statistically significant basis in the areas of auditory separation ($p=0.000$), auditory differentiation of speech ($p=0.005$), auditory memory ($p=0.005$), visual separation ($p=0.011$), spatial orientation ($p=0.001$), time sequence perception-auditory ($p=0.001$), visual-auditory intermodal relationship ($p=0.008$) than pupils who could not read fluently (54.35% of the pupils).

Mistakes in Reading Technique and Partial Cognitive Functions

In evaluation of the independent variable – mistakes in reading technique, the following categories were observed and analysed: pupil confuses letters (similarly shaped, dissimilar letters), leaves letters out, confuses syllables, leaves syllable out, and adds syllables.

Analysing the variable – confusion of similarly shaped letters (table 10), it was evident that pupils who confuse similarly shaped letters (32.61%) make more mistakes on a statistically significant basis in the areas related to the visual sphere, particularly in visual separation ($p=0.021$), visual differentiation of shapes ($p=0.029$) than pupils not confusing similarly shaped letters (67.39% of the pupils). However, this variable has also been confirmed in the relationship to auditory separation ($p=0.013$), auditory differentiation of speech ($p=0.036$) including spatial orientation ($p=0.010$).

Viewing table 11, it is evident that pupils who leave letters out in reading (34.78% of students) make more mistakes on a statistically significant basis mainly in the area of spatial orientation ($p=0.034$), time sequence perception-visual ($p=0.022$) including visual separation ($p=0.019$), auditory separation ($p=0.000$), auditory differentiation of speech ($p=0.008$) than pupils who did not leave letters out during reading (65.22%).

Researching the variable – leaving syllables out (table 12) similar results were found as for the variable of letters omission. Furthermore, pupils who omitted syllables when reading (32.61% of the pupils) made more mistakes on a statistically

significant basis in the areas of spatial orientation ($p=0.006$), time sequence perception-visual ($p=0.000$), time sequence perception-auditory ($p=0.000$) including visual separation ($p=0.009$), auditory separation ($p=0.000$), auditory differentiation of speech ($p=0.001$) than the pupils who did not leave syllables out (67.39% of the pupils).

Reading Comprehension and Partial Cognitive Functions

All the above described facts have also been confirmed by the following analysis, which was conducted within the context of evaluating the independent variable – reading comprehension using the correlation analysis method and its results are summed up in the correlation table 13. The first row of the table states the calculated Pearson correlation coefficient (r). To evaluate the extent of correlation, we used Cohen's scale (1988) (table 13).

Thus table 14 allows us to state that the worse the pupil reproduced the text the higher error rate he/she reached in partial cognitive functions, i.e. in tactile perception and kinaesthetic sense ($r = 0.61$), auditory separation ($r = 0.64$), auditory differentiation of speech ($r = 0.46$), auditory memory ($r = 0.55$), visual separation ($r = 0.42$), visual differentiation of shapes ($r = 0.47$), in spatial orientation ($r = 0.41$), time sequence perception-auditory ($r = 0.44$), time sequence perception-visual ($r = 0.38$), visual-auditory intermodal relationship ($r = 0.52$), in which the measured correlation was moderate up to strong. The correlation relationship measured for the auditory-visual intermodal relationship was small ($r = 0.21$) and for the visual memory it was insubstantial ($r = 0.10$).

4 Discussion

In connection to research results from descriptive and inductive statistics of the current state and significant mutual relationships of examined variables, the most important findings will be described and compared with the available theoretical views, since we have not registered any research works, whether in Slovakia or abroad, dealing with the level and relationship of reading competence and partial cognitive functions in 4th grade pupils with MID educated in the conditions of school inclusion. These most important findings are provided based on the main research objective, particularly the analysis of the relationship between the selected variables (reading competence, partial cognitive functions) in 4th grade pupils with mild intellectual disability educated in school inclusion at the Slovak Language and Literature classes.

Research question 1: What is the reading level (reading technique and method, reading comprehension) of 4th grade pupils with mild intellectual disability educated in school inclusion?

Based on the data collected, we can say that there are substantial differences among 4th grade pupils with MID who are educated by way of school inclusion in the area of reading method which was documented in the preceding statistics. Out of the total number of tested pupils (46), 54.35% of students could read the text fluently; however, the pupils' reading method showed errors which resided in reading by spelling (41.30% of the pupils), confusion of letters during reading (15.22% of the pupils), guessing words (56.52% of the pupils), in leaving words out (26.09% of the pupils). The deficits of the pupils found in the reading method also correlated with the higher error rate in the area of spatial orientation.

This diversity in the reading technique and method in the pupils with mild intellectual disability was also exhibited in the insufficient reproduction of the text read, when less than a third of the pupils was able to reproduce the text independently and as many as 43.48% of the pupils did not understand the text they had read. Furthermore, we have also found out that the pupils are unable to reproduce the text even if assisted by questions, which is a task which should already have been mastered in the 3rd grade.

Regarding the time required to read the text, which is another indicator of the reading level, we found out that approximately 2/3 of the pupils needed 56.0 to 340.17 seconds to read the text (of 81 words).

Research question 2: Which deficits in partial cognitive functions are exhibited in 4th grade pupils with mild intellectual disability educated in school inclusion?

Based on the collected data we can evaluate current level of individual partial cognitive functions in the cognitive processes of pupils with MID:

Tactile perception and kinaesthetic sense, body scheme and spatial orientation - as many as 58.70% of the pupils could not distinguish materials by touch; as Bednářová & Šmardová (2007) and Sindelar (2008) note, tactile perception and kinaesthetic sense preconditions the perception of body scheme; the fact that as many as 76.09% of the pupils made a maximum number of mistakes only confirms this theoretical hypothesis; the pupils with MID have problems with spatial orientation, but researchers believe that if they receive adequate leadership and stimulation, problems in this area do not have to come to the surface (Lečbych, In: Valenta, Michalík, Lečbych et al., 2012); our sample group confirmed this fact in the re-drawing exercise when as many as 73.91% of the pupils failed to correctly place the re-drawn pictures in space although they isolated them from the background (visual separation), and so this area opens room for considering the influence of another variable, namely the social environment.

In the area of visual perception – the area of visual separation (figure/background differentiation) is described by specialised literature in terms of limited discrimination of figure and background in the pupils with MID with pictures from the background or letters in a text. However, this generalising view was not confirmed to the full extent since only 13.04% of the pupils could not isolate a picture from the background and as many as 30.43% of the pupils did not make a single mistake in the word re-writing exercise. This allows us to conclude that pupils with MID do not suffer from significant difficulties in this area. However, this does not apply to visual differentiation described below; visual differentiation is characterised by professional literature (Petráš, In: Valenta, Michalík, Lečbych et al., 2012) as troublesome in the pupils with MID when they perceive the whole as a set of details and relations between them. This view was confirmed when nearly two thirds of the pupils made 6 to 10 mistakes (out of the maximum number of 10 mistakes). The opinion described in specialised literature that pupils with mild intellectual disability often confuse similarly shaped letters was only confirmed for a third of the pupils. This allows us to conclude that pupils with MID have more difficulties in this second phase of visual perception, which also influences the level of visual memory and so we can presuppose that if pupils with MID fail to correctly distinguish details by sight, this deficiency also hinders their theoretical memorisation, retaining and recalling; as regards the area of visual memory of the pupils with mild intellectual disability, Svoboda (In: Valenta, Michalík, Lečbych et al., 2012) makes a general note about the memory of the pupils with mild intellectual disability, that it is predominantly mechanic, concrete and short-term, while Pipeková (2006) adds that it is conditioned by insufficient quality of primary reception of information by way of perception, in our case visual perception. In our testing, we only assessed the short-term visual memory which exhibited, as has already been mentioned, significant deficiencies in the pupils with mild intellectual disability, also owing to the above described facts. In this area, pupils with mild intellectual disability employed compensatory techniques engaging auditory perception showing better scores compared to visual perception. This was also confirmed by the results recorded in the part requiring pupils to work with unknown shapes (complex geometric shapes), in which nearly 2/3 of the pupils made 5 to 8 mistakes (out of the maximum number of 8 mistakes). Nevertheless, it should be emphasised here that 2/3 of the pupils made 0 to 4 mistakes in the exercise requiring them to remember

letters. This allows us to reason that pupils with mild intellectual disability do not work in this area with visual memory only, since it shows significant limitations resulting from the deficiencies in other areas. They can compensate for deficiencies in this area to some extent by employing auditory perception which is described below.

In the area of auditory perception – seems to be better in the pupils with MID than the visual perception, within the auditory separation (figure/background differentiation), nearly a half of students did not make a single mistake in differentiation of phonemes in a word. This finding was also confirmed in reading when only 8.70% of the pupils confused acoustically similar letters. This allows us to reason that these results do not confirm the views held by some authors (Petráš, In: Valenta, Michalík, Lečbych et al., 2012) that pupils with mild intellectual disability have low phonological awareness (auditory analysis and synthesis). We agree with Zezulková (2011) who asserts, based on the research she made that these pupils reached a good up to very good level in the areas of first sound isolation (74.6% success) and in sound synthesis (56.00% success); in the area of auditory differentiation, pupils with mild intellectual disability achieved positive results. As many as 41.30% of the pupils did not make any mistake and 91.30% of the pupils made 0 to 7 mistakes (out of the maximum number of 15 mistakes). Based on this, we can conclude that pupils with mild intellectual disability do not have any significant difficulties in this phase either. This finding is confirmed in Zezulková's research (2011) as well (N = 50 pupils with mild intellectual disability), resulting in low figures in omission of sounds (11.6%), syllables (13.6%), rhyme production (28.8%), sound substitution (34%) and word analysis to sounds (40.4%) in the pupils with mild intellectual disability; a good level in the first syllable isolation (55.2%), synthesis of sounds (56%), recognition of rhymes (64.4%), first sound isolation (74.6%); and a very good level in synthesis of syllables (82%) and analysis of words into syllables (94%); the peculiarities in the area of auditory memory described in specialised literature as a difficulty appearing in the pupils with mild intellectual disability with retaining words and sentences heard in the short-term memory (Pipeková, 2006) were also confirmed by the results of our research. Findings in this area and the greatest percentage of mistakes allow us to conclude that pupils with mild intellectual disability can remember 3 to 5 successive phonemes, 3 rhyming and non-rhyming words.

Analysis of the Relationship between Partial Cognitive Functions and Reading Competence in the Pupils with Mild Intellectual Disability

Given that the data included in statistic do not have normal distribution, for the comparison Mann-Whitney U-test and T-test were used, where applicable that if the calculated p-value is lower than 0,05, then there is statistically significant difference among analysed groups. In our testing of hypotheses, we presuppose that one of the pillars of reading competence (reading technique and method, reading comprehension) includes specific modalities (visual perception, auditory perception, tactile perception and kinaesthetic sense, as well as memory, perception, attention) which do not work in isolation but rather overlap, and which can be observed as partial cognitive functions which are necessary for the pupil to produce a complex performance, i.e. to be able to read, write, etc. Therefore, we suppose that the fewer mistakes pupils with mild intellectual disability make in the area of partial cognitive functions, the fewer mistakes in the reading method and techniques in quantitative tests. This relationship is also implied in specialised literature which describes the influence of cognitive functions on school skills (Blachman, 1991; Siegel, 2003; Leeb, 2006; Sindelar, 2007, 2008; Author, 2009; Pokorná, 2010; Zezulková, 2011; Doidge, 2012; Liptáková, 2012; Krejčová, 2013; Co-author, 2013); Žovinec, 2014) which we have used to support our hypothesis.

Hypothesis 1: The reading level within reading method of 4th grade pupils with mild intellectual disability educated in school inclusion at an elementary school is under a statistically significant influence of the level of partial cognitive functions.

The independent variable – reading method – was observed in detail and the hypothesis defined was verified by the areas: (pupil) spells, leaves words out, guesses words, employs double reading, fluent reading. The sample group was divided by the variables monitored into two groups depending on whether the variable occurred or did not occur.

Hypothesis 1 was confirmed in the pupils, who:

- employed spelling made more mistakes on a statistically significant basis particularly in visual and auditory separation as well as in the tactile perception and kinaesthetic sense and in the interconnected areas than the pupils who did not use spelling in the reading assessment test. This also confirms the findings in specialised literature (Sindelar, 2008; Zezulková, 2011) that the weakening of a pupil's basic tiers of partial cognitive functions also influences higher tiers which are built upon them, and we also observed a statistically significant difference in the subsequent tiers of visual differentiation of shapes, auditory differentiation of speech, auditory memory, two-dimensional spatial orientation including time sequence perception – visual and auditory.;
- employed double reading when reading made more mistakes on a statistically significant basis in visual separation and auditory separation and in tactile perception and kinaesthetic sense than pupils who did not read using the double reading method. Furthermore, these pupils also make more mistakes on a statistically significant basis in the areas of auditory differentiation of speech, auditory memory, spatial orientation, time sequence perception – auditory and visual. This finding is congruent with the findings of Bednářová & Šmardová (2011), Zezulková (2011), who state that if a pupil's auditory perception is weakened, he/she reads a particular word or its part twice or several times in a row, pre-reads it, etc.;
- read by way of fluent reading made fewer mistakes on a statistically significant basis in visual and auditory separation, in auditory differentiation and memory, in tactile perception and kinaesthetic sense, and in the interconnected two-dimensional spatial orientation including time sequence perception – auditory and visual-auditory intermodal relationships than pupils who did not read fluently. The results we arrived at are also in agreement with the results of Stanovich (1986) (In: Lechta, 2002); Lurija (1983) (In: Lechta, 2002); Sindelar (2008); Pokorná (2010); Bednářová & Šmardová (2011); Kulišťák (2011); Zezulková (2011); Co-author (2017);
- left words out (26.08% of the pupils) made more mistakes on a statistically significant basis in the area of visual separation, spatial orientation and time sequence perception than pupils who did not leave words out in the reading assessment test; the same finding is also confirmed by Bednářová & Šmardová (2011), Sindelar (2008);
- guessed words (56.52% of the pupils) made more mistakes on a statistically significant basis mainly in the area of auditory separation, auditory differentiation and in visual separation than pupils who did not guess words in the reading assessment test. These findings are in agreement with the assertion of Torgesen (In: Pokorná, 2010), who notes that pupils do not guess words based on the first or last sound or its shape, which requires a perfect analysis of the word in the auditory as well as visual area.

Hypothesis 2: The reading level within mistakes in reading technique of 4th grade pupils with mild intellectual disability educated in school inclusion at an elementary school is under a statistically significant influence of the level of partial cognitive functions.

The independent variable – mistakes in reading technique – was carefully observed and the hypothesis was verified according to areas: confusion of letters (similarly shaped, acoustically similar, dissimilar), leaving letters out, adding letters, confusion of syllables, leaving syllables out, adding syllables. The sample group was divided by the variables observed into two groups

depending on whether the relevant variable appeared or did not appear in the pupils. Hereafter we only describe the variables for which the hypothesis was confirmed.

Hypothesis 2 was confirmed in the pupils, who:

- confused similarly shaped letters made more mistakes on a statistically significant basis in the area of visual separation and differentiation, auditory separation and differentiation and in spatial orientation than pupils who did not confuse similarly shaped letters in the reading assessment test. These findings coincide with the theoretical findings of Sindelar (2008), Bednářová & Šmardová (2011) and Zezulková (2011), who claim that confusion of dissimilar letters is caused by the deficiencies in the visual area and this consequently leads to mistakes in reading;
- left letters or syllables out made more mistakes on a statistically significant basis particularly in the area of auditory separation, differentiation and in spatial orientation than pupils who did not leave letters or syllables out in the reading assessment test;
- added letters only in the area of time sequence perception – auditory, which means that pupils who added letters during reading made more mistakes on a statistically significant basis in the area of time sequence perception – auditory than the pupils who did not add letters;
- added syllables only for the dependent variable – spatial orientation and time sequence perception – auditory.

Hypothesis 3: The reading level in reading comprehension of 4th grade pupils with mild intellectual disability educated in school inclusion at an elementary school correlates to a statistically significant extent with the level of partial cognitive functions.

When analysing the independent variable – reading comprehension – the hypothesis was confirmed: strong correlation was found in tactile perception and kinaesthetic sense, auditory separation, auditory memory, visual-auditory intermodal relationship; moderate correlation was found in the areas of auditory differentiation of speech, visual differentiation of shapes, spatial orientation, time sequence perception – auditory, time sequence perception – visual which showed moderate up to strong correlation. Thus, the worse the pupil's reproduction of the text, the higher the error rate in the above described areas of cognitive functions. These findings confirm mutual relations between reading competence and partial cognitive functions described in the analysis of the relationship of partial cognitive functions and reading competence, which is also indicated by Zelinková (1994), Gavora (2003, 2008), Sindelar (2008), Pokorná (2010b).

5 Conclusion

Based on the understanding of the current state of reading competence and partial cognitive functions of pupils with MID was our intention to know the mutual relationships between reading competence and partial cognitive functions for the potential and intentional stimulation. Individual relations were analysed in a relation to different assessed categories examined within the reading competence variable (reading method, mistakes in reading techniques, reading comprehension) and subsequently described the most important and statistically significant relationships. At the same time, it is necessary to consider further variables which influence the reading level of these pupils including the social factors as well (family, school, educational approach, methods of pedagogues, etc.), while we should not forget the spontaneous development, although delayed and partially limited, requiring pupils to try harder and teachers to pay more attention for their optimal development.

Despite that the research findings might be expected, we consider it very important to deal with the issue, particularly regarding the inclusive trends and inclusion of pupils with MID into the mainstream education. The results we have found indicate at least two important issues, which require further examination. The first is the development of reading competence

of a pupil with MID by a teacher or a teacher's assistant as a presumption of overall academic skills development and functioning in other academic subjects. The second is specific support of a pupils with MID either in terms of teaching subjects upgrade focused on the partial cognitive functions' stimulation or the implementation of verified and qualified methodologies and stimulation programmes into practice.

We conclude that with the paper we attempted to point out one of possible solutions of effective education of pupils with MID in the mainstream education in Slovakia, in the context of current trend of inclusive education of pupils with special educational needs with focus on the cognitive stimulation of their reading competence.

Literature:

- Anderson, L. W., Krathwohl, D. R. (eds.) 2001. *A taxonomy for Learning, Teaching and Assessing. A Revision of Bloom's Taxonomy of Educational Objectives*. New York: Longman.
- Bednářová, J., Šmardová, V. 2007. *Diagnostika dítěte předškolního věku. Co by dítě mělo umět vo věku od 3 do 6 let*. Brno: Computer Press.
- Blachman, B. A. 1991. Phonological Awareness: Implications for Prereading and Early Reading Instruction. In: BRADY, S. A., SHANKWEILER, D. P., LIBERMAN, I. Y. *Phonological Processes in Literacy: A Tribute to Isabelle Y.* London: Lawrence Erlbaum associates, publishers, pp. 29 – 34
- Browder, D. M., Wakeman, S. Y., Spooner, F. et al. 2006. Research on Reading Instruction for Individuals with with Significant Cognitive Disabilities. In: *Exceptional Children* [online]. Vol. 72, No. 3 [retrieved: 2018-03-20]. Available at: <http://www.questia.com/library/1G1-148480060/research-on-reading-instruction-for-individuals-with>.
- Čižmarovič, Š., Kalná, V. 1987. *Pedagogická diagnostika čítania mladších žiakov*. Bratislava: SPN.
- Doidge, N. 2012. *Váš mozok se dokáže zmeniť. Neuvěřiteľné príbehy osobného víťazství díky objevům na poli neurovědy*. Brno: CPress.
- Ewing, J. C., Foster, D. D., Whittington, M. S. 2011. Explaining Student Cognition during Class Sessions in the Context Piaget's Theory of Cognitive Development. In: *NACTA Journal* [online]. Vol. 55, No. 1 [retrieved: 2018-04-18]. Available at: <http://www.questia.com/read/1P3-2333245591/explaining-student-cognition-during-class-sessions>.
- Feuerstein, R., Hoffman, M. B., Falik, L. H. et al. 2002. *The dynamic assessment of cognitive modifiability. The learning propensity assessment device: theory, Instruments and techniques. Revised and expanded of the dynamic assessment of retarded performers*. Israel: The ICELP press.
- Feuerstein, R., Hoffman, M. B., Falik, L. H. 2008. *Learning Potential Assessment Device – LPAD Examiner's Manual*. Israel: The ICELP press.
- Feuerstein, R., Hoffman, M. B., Falik, L. H. 2009. *The Feuerstein Instrumental Enrichment Basic Program. User's Guide*. Israel: The ICELP press.
- Feuerstein, R., Hoffman, M. B., Falik, L. H. et al. 2014. *Vytváření a zvyšování kognitivní modifikovatelnosti. Feuersteinuv program instrumentálního obohacení*. Praha: Karolinum.
- Gavora, P. 1992. *Žiak a text*. Bratislava: Slovenské pedagogické nakladateľstvo.
- Gavora, P. 2003. Modely a úrovne gramotnosti. In: *Gramotnosť. Vývin a možnosti jej didaktického usmernenia*. Bratislava: Univerzita Komenského, pp. 11 – 23.
- Gavora, P. 2008. *Ako rozvíjať porozumenie textu u žiaka*. Nitra: ENIGMA.
- Gavora, P. et al. 2010. *Elektronická učebnica pedagogického výskumu*. Bratislava: Univerzita Komenského.
- Hendl, J. 2008. *Kvalitatívny výzkum: základní teorie, metody a aplikace*. Praha: Portál.
- Jitendra, A. K., Burgess, C., Gajria, M. 2011. Cognitive Strategy Instruction for Improving Expository Text Comprehension of Students with Learning Disabilities: The Quality of Evidence. In: *Exceptional Children* [online]. Vol. 77, No. 2 [retrieved: 2018-03-20]. Available at: <http://www.questia.com/library/1G1-247223902/cognitive-strategy-instruction-for-improving-expository>.
- Kovalčíková, I. (ed.). 2010. *Kognitívna stimulácia individuálnych edukačných potrieb žiaka zo sociálne znevýhodneného prostredia*. Prešov: Prešovská univerzita v Prešove.
- Kovalčíková, I. 2017. *Kognitívna pedagogika I. Kognitívne determinanty edukačného procesu. Hypotetické, deduktívne a inferenčné myslenie*. Prešov: Vydavateľstvo Prešovskej univerzity.
- Krejčová, L. 2013. *Žáci potřebují přemýšlet*. Praha: Portál.
- Krejčová, L., Bodnářová, Z. et al. 2014. *Specifické poruchy učení. Dyslexie, dysgrafie, dysortografie*. Brno: Edika.
- Kulišťák, P. 2011. *Neuropsychologie*. Praha: Portál.
- Leeber, J. 2006. *Programy pro rozvoj myšlení dětí s odchylkami vývoje*. Praha: Portál.
- Lechta, V. et al. 2002. *Terapia narušenej komunikačnej schopnosti*. Martin: Osveta.
- Lechta, V. 2010. *Základy inkluzivní pedagogiky*. Praha: Portál.
- Liptáková, E. 2012. *Kognitívne aspekty vyučovania materinského jazyka v primárnej edukácii*. Prešov: Pedagogická fakulta Prešovskej univerzity v Prešove.
- Medina, J. 2012. *Pravidla mozgu. Nejnovější vědecké poznatky pro úspěch v práci, doma i ve škole*. Brno: BizBooks.
- Peat, D., Wilgosh, L., Mulcahy, R. 1997. Efficacy of cognitive strategy-based instruction for elementary students with learning disabilities: A retrospective study. In: *Canadian Journal of School Psychology* [online]. Vol. 12, No. 2, p. 135 – 142 [retrieved: 2018-03-20]. Available at: <http://www.publib.sk:2071/record/display.url?eid=2s2.00005561470&origin=resultslist&sort=plff&src=s&st1=%22Efficacy+of+Cognitive+Strategy+22&sid=0FC36F8F5AC8B331BFDC23E4CBF005DAmem16%3a1>.
- Pipeková, J. 2006. *Osoby s mentálním postižením ve světle současných edukativních trendů*. Brno: MSD.
- Pokorná, V. 2007. *Cvičení pro děti se specifickými poruchami učení: rozvoj vnímání a poznávání*. Praha: Portál.
- Pokorná, V. 2008. *Programy rozvoje osobnosti Feuersteinovo instrumentální obohacování. Učíme se učit se. O metodě*. [online]. [Retrieved: 2018-04-09]. Available at: <http://www.ucime-se-ucit.cz/o-metode/>.
- Pokorná, V. 2010a. *Teorie a náprava vývojových poruch učení a chování*. Praha: Portál.
- Pokorná, V. 2010b. *Vývojové poruchy učení v dětství a dospělosti*. Praha: Portál.
- Siegel, L. S. 2003. Basic Cognitive Processes and Reading Disabilities. In: *Handbook of Learning Disabilities* [online]. New York: Guilford Press. [Retrieved: 2018-04-18]. Available at: <http://www.questia.com/library/117190797/handbook-of-learning-disabilities>.
- Sindelarová, B. 1996. *Předcházíme poruchám učení: soubor cvičení pro děti v předškolní roce a v první třídě*. Praha: Portál.
- Sindelarová, B. 2007. *Předcházíme poruchám učení: soubor cvičení pro děti v předškolním roce a v první třídě*. Praha: Portál.
- Sindelarová, B. 2008. *Deficity částkových funkcí. Průručka poruch učenia a správania u detí a ich náprava*. Bratislava: Psychodiagnosticska.
- Švec, Š. et al. 1998. *Metodológia vied o výchove. Kvantitatívno-scientistické a kvalitatívno-humanitné prístupy v edukačnom výskume*. Bratislava: IRIS.
- Terry, M. 2002. Translating Learning Style Theory into Developmental Education Practice: An Article Based on Gregory's Cognitive Learning Styles. In: *Journal of College Reading and Learning* [online]. Vol. 32, No. 2 [Retrieved: 2018-04-18]. Available at: <http://www.questia.com/read/1G1-87146226/translating-learning-style-theory-into-developmental>.
- Valenta, M., Michalík, J., Lečbych, M. et al. 2012. *Mentální postižení v pedagogickém, psychologickém a sociálně-právním kontextu*. Praha: Grada.
- Valenta, M. et al. 2012. *Katalog posudzování míry speciálních vzdělávacích potřeb. Část II. Diagnostické domény pro žáky s mentálním postižením*. Olomouc: Univerzita Palackého v Olomouci, Pedagogická fakulta.

42. Valenta, M., Petráš, P. et al. 2012. *Metodika práce s dítětem a žákem s mentálním postižením* Olomouc: Univerzita Palackého v Olomouci, Pedagogická fakulta
43. *Vzdelávací program pre žiakov s mentálnym postihnutím ISCED 1 – primárne vzdelávanie*. 2009. [online]. Bratislava: MŠ SR. [retrieved: 2018-04-18]. Available at: <http://www.statpedu.sk/sk/Statny-vzdelavaci-program/VP-pre-deti-a-ziakov-so-zdravotnym-znevychodnenim/VP-pre-deti-a-ziakov-s-mentalnym-postihnutim.alej>.
44. *Vzdelávací program pre žiakov s ľahkým mentálnym postihnutím ISCED 1 – primárne vzdelávanie*. 2016. [online]. Bratislava: MŠ SR. [retrieved: 2018-04-18]. Available at: http://www.statpedu.sk/sites/default/files/dokumenty/statny-vzdelavaci-program/vp_pre_deti_s_mentalnym_postihnutim_isced_1.pdf.
45. Zelinková, O. 1994. *Poruchy učení*. Praha: Portál.
46. Zelinková, O. 2003. *Poruchy učení: specifické vývojové poruchy čtení, psaní a dalších školních dovedností*. Praha: Portál.
47. Zelinková, O. 2007. *Pedagogická diagnostika a individuální vzdělávací program*. Praha: Portál.
48. Zelinková, E. 2011. *Jazyková a komunikační kompetence dětí s mentálním postižením*. Ostrava: Ostravská univerzita.
49. Žovinec, E. 2014. *Kognitivné a metakognitivné prístupy k dyslexii – edukácia a poradenstvo*. Bratislava: IRIS.
50. Žovinec, E., Krejčová, L., Pospíšilová, Z. 2014. *Kognitivné a metakognitivné prístupy k dyslexii – edukácia a poradenstvo*. Bratislava: IRIS.

Primary Paper Section: A

Secondary Paper Section: AM, AN

Tables

Table 1: Reading Method

		spells	syllabifies	leaves words out	guesses words	double reading	fluent reading
Reading method	number of pupils	19	7	12	26	22	25
	share in %	41.30	15.22	26.09	56.52	47.83	54.35

Table 2: Mistakes in reading technique

Mistakes in reading technique		letters/sounds					syllables		
		confuses letters					leaves letters out	adds letters	confuses syllables
	similarly shaped	acoustically similar	dissimilar			leaves syllables out			adds syllables
	number of pupils	15	4	31	16	12	5	15	11
share in %	32.61	8.70	67.39	34.78	26.09	10.87	32.61	23.91	

Table 3: Reading comprehension

Comprehension		reproduces independently		reproduces only with the help of questions	does not understand the text
	number of pupils	12		14	20
	share in %	26.09		30.43	43.48

Table 4: Evaluation of Partial Cognitive Functions of the Pupils with Mild Intellectual

Variables	Average	Standard deviation	Dispersion	Minimum	Median	Maximum
Tactile perception and kinaesthetic sense	3.609	2.902	8.421	0	6	6
Auditory separation	3.804	5.536	30.65	0	1	18
Auditory separation	4.261	5.651	31.93	0	1	18
Spatial orientation – body scheme	7.435	3.264	10.651	0	9	9
Auditory-visual intermodal relationship	4.761	2.531	6.408	0	5	14
Auditory-visual intermodal relationship	3.848	2.385	5.687	0	4	10
Visual differentiation of shapes	7.043	2.812	7.909	2	7.5	10
Auditory separation	4.348	5.595	31.299	0	2	17
Time sequence perception – visual	9.83	6.78	46.01	0	10	25
Auditory memory	1.217	0.987	0.974	0	1	3
Auditory memory	2.087	0.755	0.57	1	2	3
Auditory memory	2.087	0.865	0.748	0	2	3
Two-dimensional spatial orientation/ visual separation	-	-	-	-	-	-
Two-dimensional spatial orientation/ visual separation	10.739	5.771	33.308	1	10.5	22
Two-dimensional spatial orientation/ visual separation	15.239	5.77	33.297	2	16.5	25
Auditory differentiation of speech	2.609	3.409	11.621	0	2	15
Visual memory	2.326	1.989	3.958	0	2	7
Visual memory	5.5	1.986	3.944	2	6	8
Visual memory	3.391	2.38	5.666	0	4	8
Time sequence perception – auditory	10.457	5.141	26.431	0	10	25
Visual separation	6.87	14.33	205.32	0	1	62
Visual-auditory intermodal relationship	4.891	4.9	24.01	0	3	20
Visual-auditory intermodal relationship	8.087	5.577	31.103	0	8	18

Table 5: Analysis of the relationship between reading method – spelling and partial cognitive functions

Independent variable	Spells – Number of students 19						Does not spell – Number of students 27						Type of test*	P-value
	Average	Standard deviation	Minimum	Median	Maximum	Normality test	Average	Standard deviation	Minimum	Median	Maximum	Normality test		
Tactile perception and kinaesthetic sense	5.368	1.892	0	6	6	<0.005	2.37	2.871	0	0	6	<0.005	1	0.001
Auditory separation	7.89	6.07	0	7	18	0.171	0.926	2.586	0	0	13	<0.005	1	0.000
Visual differentiation of shapes	8.368	1.95	4	9	10	<0.005	6.111	2.979	2	7	10	0.010	1	0.008
Time sequence perception - visual	12.74	5.61	5	10	25	0.204	7.78	6.88	0	7	25	0.080	2	0.013
Auditory memory	1.789	0.976	0	2	3	<0.005	0.815	0.786	0	1	2	<0.005	1	0.001
Visual separation	12.89	5.36	5	12	21	0.467	9.22	5.65	1	9	22	0.788	2	0.032
Two-dimensional spatial orientation	17.89	5.17	5	18	25	0.703	13.37	5.51	2	15	21	0.100	2	0.007
Auditory differentiation of speech	4	4.23	0	3	15	0.023	1.63	2.306	0	0	8	<0.005	1	0.038
Time sequence perception – auditory	13.63	5.67	2	13	25	0.010	8.222	3.309	0	10	15	<0.005	1	0.000

*Type of test: 1 – Mann-Whitney U-test, 2 – T-test

Table 6: Analysis of the relationship between reading method – leaving words out and partial cognitive functions

Independent variable	Leaves words out – Number of students 12						Does not leave words out – Number of students 34						Type of test*	P-value
	Average	Standard deviation	Minimum	Median	Maximum	Normality test	Average	Standard deviation	Minimum	Median	Maximum	Normality test		
Visual separation	18.5	23.88	0	4.5	62	<0.005	2.765	4.831	0	1	21	<0.005	1	0.005
Spatial orientation	18.58	5.93	5	20.5	25	0.275	14.059	5.308	2	15.5	24	0.036	1	0.013

*Type of test: 1 – Mann-Whitney U-test, 2 – T-test

Table 7: Analysis of the relationship between reading method – word guessing and partial cognitive functions

Independent variable	Guesses words – Number of students 26						Does not guess words – Number of students 20						Type of test*	P-value
	Average	Standard deviation	Minimum	Median	Maximum	Normality test	Average	Standard deviation	Minimum	Median	Maximum	Normality test		
Auditory separation	5.92	6.39	0	3	18	<0.005	1.05	2.188	0	0	9	<0.005	1	0.002
Auditory separation	6.62	5.88	0	5.5	18	0.019	1.2	3.563	0	0	16	<0.005	1	0.000
Auditory separation	6.62	5.78	0	4.5	17	0.009	1.4	3.747	0	0	16	<0.005	1	0.000
Auditory differentiation of speech	3.692	3.519	0	3	15	0.027	1.2	2.745	0	0	12	<0.005	1	0.001
Time sequence perception –	12.58	5.28	3	10	25	<0.005	7.7	3.435	0	10	10	<0.005	1	0.000

auditory														
Visual separation	10.46	18.08	0	2	62	<0.005	2.2	3.942	0	1	16	<0.005	1	0.031
Visual-auditory intermodal relationship	6.35	5.73	0	6	20	0.017	3	2.656	0	2.5	11	0.153	1	0.049

*Type of test: 1 – Mann-Whitney U-test, 2 – T-test

Table 8: Analysis of the relationship between reading method – double reading and partial cognitive functions

Independent variable	Double reading – Number of students 22						Without double reading – Number of students 24						Type of test*	P-value
	Average	Standard deviation	Minimum	Median	Maximum	Normality test	Average	Standard deviation	Minimum	Median	Maximum	Normality test		
Auditory separation	6.86	6.22	0	6	18	0.028	1	2.735	0	0	13	<0.005	1	0.000
Visual differentiation of shapes	8.091	2.266	2	9	10	<0.005	6.083	2.962	2	6.5	10	0.036	1	0.018
Time sequence perception - visual	12.09	5.89	0	10	25	0.396	7.75	7	0	6	25	0.072	2	0.028
Auditory memory	1.682	0.995	0	2	3	<0.005	0.792	0.779	0	1	2	<0.005	1	0.002
Spatial orientation	17.5	5.1	5	18	25	0.803	13.17	5.66	2	13.5	21	0.182	2	0.009
Auditory differentiation of speech	4.318	4.052	0	3.5	15	0.080	1.042	1.546	0	0	6	<0.005	1	0.001
Time sequence perception – auditory	13.09	5.43	2	10	25	<0.005	8.042	3.47	0	10	15	<0.005	1	0.000
Visual separation	11.41	19.21	0	2	62	<0.005	2.71	5.18	0	1	21	<0.005	1	0.033
Visual-auditory intermodal relationship	6.77	5.82	0	5	20	0.008	3.167	3.088	0	2	11	0.025	1	0.020

*Type of test: 1 – Mann-Whitney U-test, 2 – T-test

Table 9: Analysis of the relationship between reading method – fluent reading and partial cognitive functions

Independent variable	Fluent reading – Number of students 25						Reading is not fluent – Number of students 21						Type of test*	P-value
	Average	Standard deviation	Minimum	Median	Maximum	Normality test	Average	Standard deviation	Minimum	Median	Maximum	Normality test		
Auditory separation	0.611	3.054	0	0	15	<0.005	1.34	6.12	0	7	18	0.082	1	0.000
Auditory memory	0.16	0.8	0	1	2	<0.005	0.222	1.017	0	2	3	<0.005	1	0.005
Visual separation	1.16	5.78	1	8	22	0.454	1.08	4.95	5	12	21	0.450	2	0.011
Spatial orientation	1.09	5.44	2	12	21	0.338	1.05	4.81	5	18	25	0.377	2	0.001
Auditory differentiation of speech	0.411	2.056	0	0	8	<0.005	0.887	4.066	0	3	15	0.047	1	0.005
Time sequence perception – auditory	0.734	3.671	0	10	15	<0.005	1.21	5.55	2	10	25	<0.005	1	0.001
Visual-auditory intermodal relationship	0.584	2.922	0	2	11	0.028	1.28	5.86	0	7	20	0.016	1	0.008

*Type of test: 1 – Mann-Whitney U-test, 2 – T-test

Table 10: Analysis of the relationship between mistakes in reading technique – confusion of similarly shaped letters and partial cognitive functions

Independent variable	Confuses similarly shaped letters – Number of students 15						Does not confuse similarly shaped letters – Number of students 31						Type of test*	P-value
	Average	Standard deviation	Minimum	Median	Maximum	Normality test	Average	Standard deviation	Minimum	Median	Maximum	Normality test		
Auditory separation	7.33	6.45	0	9	18	0.058	2.774	4.631	0	0	16	<0.005	1	0.013

Visual differentiation of shapes	8.4	2.063	3	9	10	<0.005	6.387	2.918	2	7	10	0.009	1	0.029
Visual separation	13.53	5.82	5	14	22	0.252	9.387	5.327	1	10	21	0.599	2	0.021
Spatial orientation	18.33	5.6	5	19	25	0.094	13.742	5.31	2	15	24	0.328	2	0.010
Auditory differentiation of speech	3.8	3.858	0	3	15	0.010	2.032	3.071	0	0	12	<0.005	1	0.036
Visual separation	15.93	22.28	1	2	62	<0.005	2.484	3.915	0	1	16	<0.005	1	0.011

*Type of test: 1 – Mann-Whitney U-test, 2 – T-test

Table 11: Analysis of the relationship between mistakes in reading technique – omission of letters and partial cognitive functions

Independent variable	Leaves letters out – Number of students 16						Does not leave letters out – Number of students 30						Type of test*	P-value
	Average	Standard deviation	Minimum	Median	Maximum	Normality test	Average	Standard deviation	Minimum	Median	Maximum	Normality test		
Auditory separation	8.63	6.18	0	8	18	0.418	1.933	3.695	0	0	12	<0.005	1	0.000
Time sequence perception - visual	12.88	5.43	5	11.5	25	0.365	8.2	6.95	0	7.5	25	0.052	1	0.022
Spatial orientation	17.69	4.94	10	18	25	0.800	13.93	5.83	2	15.5	24	0.052	2	0.034
Auditory differentiation of speech	3.875	2.895	0	3.5	8	0.271	1.933	3.513	0	0	15	<0.005	1	0.008
Visual separation	11.5	17.61	0	2.5	62	<0.005	4.4	11.84	0	1	62	<0.005	1	0.019

*Type of test: 1 – Mann-Whitney U-test, 2 – T-test

Table 12: Analysis of the relationship between mistakes in reading technique – omission of syllables and partial cognitive functions

Independent variable	Leaves syllables out – Number of students 15						Does not leave syllables out – Number of students 31						Type of test*	P-value
	Average	Standard deviation	Minimum	Median	Maximum	Normality test	Average	Standard deviation	Minimum	Median	Maximum	Normality test		
Auditory separation	8.27	5.27	0	10	18	0.473	2.323	4.799	0	0	18	<0.005	1	0.000
Spatial orientation – body scheme	8.867	0.516	7	9	9	<0.005	6.742	3.786	0	9	9	<0.005	1	0.050
Time sequence perception - visual	15.33	4.72	9	15	25	0.491	7.16	6.01	0	6	25	0.032	1	0.000
Spatial orientation	18.53	4.44	11	18	25	0.730	13.65	5.72	2	15	24	0.063	2	0.006
Auditory differentiation of speech	4.667	3.811	0	4	15	0.171	1.613	2.741	0	0	12	<0.005	1	0.001
Time sequence perception – auditory	14.67	5.45	9	15	25	0.035	8.419	3.557	0	10	15	<0.005	1	0.000
Visual separation	15.33	22.19	0	3	62	<0.005	2.774	5.005	0	1	21	<0.005	1	0.009

*Type of test: 1 – Mann-Whitney U-test, 2 – T-test

Table 13: Correlation scale

(Source: http://www.nucem.sk/documents/25/maturita_2009/vysledky_a_vyhodnotenie/Prirucka_2009.pdf)

r	Correlation scale
Under 0.10	insubstantial
0.11 – 0.30	small
0.31 – 0.50	moderate
0.51 – 0.70	strong
0.71 – 0.90	very strong
0.91 – 1.00	almost perfect

Table 14: Analysis of correlation between reading comprehension and partial cognitive functions

Variable	Tactile perception and kinaesthetic sense	Auditory separation	Auditory separation	Spatial orientation – body scheme	Auditory-visual intermodal relationship	Auditory-visual intermodal relationship	Visual differentiation of shapes	Auditory separation	Time sequence perception – visual	Auditory memory	Auditory memory	Auditory memory
r	0.61	0.64	0.63	0.34	0.21	0.34	0.47	0.64	0.38	0.55	0.55	0.54
P-value	0.000	0.000	0.000	0.023	0.157	0.020	0.001	0.000	0.009	0.000	0.000	0.000
Correlation	strong	strong	strong	moderate	small	moderate	moderate	strong	moderate	strong	strong	strong

Variable	Visual separation	Spatial orientation	Auditory differentiation of speech	Visual memory	Visual memory	Visual memory	Time sequence perception – auditory	Visual separation	Visual-auditory intermodal relationship	Visual-auditory intermodal relationship
p	0.42	0.41	0.46	0.06	0.10	0.03	0.44	0.37	0.52	0.38
P-value	0.004	0.005	0.001	0.695	0.530	0.830	0.002	0.012	0.000	0.009
Correlation	moderate	moderate	moderate	insubstantial	insubstantial	insubstantial	moderate	moderate	strong	moderate

GENDER DIFFERENCES IN SUBJECTIVE WELL-BEING OF HIGH SCHOOL STUDENTS WITH HEALTH DISORDERS PREFERRING SEDENTARY LEISURE ACTIVITIES

^aHANA HOLIČKOVÁ, ^bDAGMAR NEMČEK

^aComenius University in Bratislava, Faculty of Physical Education and Sports, Department of Sport Sciences in Educology and Humanities, Nábr. Arm. Gen. L. Svobodu 9, 814 69 Bratislava, Slovakia

^bComenius University in Bratislava, Faculty of Physical Education and Sports, Department of Sport Sciences in Educology and Humanities, Nábr. Arm. Gen. L. Svobodu 9, 814 69 Bratislava, Slovakia
email: ^aholickova14@uniba.sk ^bdagmar.nemcek@uniba.sk

This scientific paper was supported by grant project VEGA No. 1/0409/19

Abstract: The aim of this study was to analyse and compare the subjective wellbeing (SWB) between male and female high school students with self-reported health disorders preferring sedentary types of leisure activities. The sample comprised of 63 high school male students (17.13±1.41 years) and 112 high school female students (16.47±1.51 years). The standardized Bern Subjective Well-Being Questionnaire for Adolescents was used as a primary research method. The male high school students with self-reported health disorders declare significantly higher SWB compare female peers, that was shown in Life satisfaction, Physical health and in positive SWB domains.

Keywords: self-reported health disorders, male and female high school students, subjective well-being domains, sedentary leisure activities.

1 Introduction

Subjective well-being (SWB) involves the various ways that people evaluate and experience their lives. In many ways, the term is synonymous with the everyday notion of happiness – positive feelings are an important aspect of well-being (Tov & Diener, 2013). The “bottom-up” theory of SWB argues that global SWB is based on a person’s weighting of well-being across key life domains (e.g., leisure, work, health) (Headley, Veenhoven & Wearing, 1991). Leisure can fulfil needs and desires that are thwarted in other areas of one’s life, such as work, which can protect one’s overall well-being (Kuykendall, Boemerma & Zhu, 2018). Leisure may provide certain unique well-being benefits that cannot be obtained through other domains in life, as leisure is typically characterized by autonomy or greater freedom of choice than other life domains (Graef, Csikszentmihalyi & Gianinno, 1983). Social leisure activities strongly positively contribute to SWB (Parsons et al., 2019), but on the other hand too much sedentary leisure activities in particular when accumulated in long uninterrupted bouts is associated with detrimental effects on health and wellbeing, a large number of chronic diseases (Wilmot et al., 2012; Chastin et al., 2015). There is a very close connection between sedentary leisure activities and health problems already in young age category people (Bendíková, Marko & Rozim, 2019). It has been suggested that young people spend too much time in sedentary activities, which further increases their risk of future health problems (Van Sluijs et al., 2008). The aim of this study was to analyse and compare the SWB between male and female high school students with self-reported health disorders preferring sedentary types of leisure activities.

2 Methods

2.1 Participants and data collection

The research sample comprised of 63 high school male students (mean age 17.13±1.41 years of age) and 112 high school female students (mean age 16.47±1.51 years of age) who self-reported some kind of health disorder (HD) and preferred sedentary types of activities in their leisure time. The most preferred sedentary leisure activities in male high school students were TV watching and playing on the electronic devices and the most preferred sedentary leisure activities in female high school students were meeting/chatting with friends/socializing, listen to the music and just doing nothing. Both genders of high school students self-

reported the mostly musculoskeletal disorders (32 %), allergies (24 %), cardiovascular and metabolic disorders (16 %) and combination of musculoskeletal and internal human systems disorders (28 %). The data were collected from September to December 2019 at six different high schools and vocational schools in Slovak cities Bratislava, Nitra, Liptovský Hrádok, Ružomberok, Spišská Nová Ves and Humenné. The questionnaires were distributed in paper form and respondents were instructed on how to complete it and informed of survey questions related to health status and preferred leisure time activities. For this study, we selected only students with self-reported health disorder and who had preferred sedentary leisure time activities. Each participant voluntarily provided written informed consent before participation in the research and the Ethics Committee of the Faculty of Physical Education and Sports, Comenius University in Bratislava (ref. no. 10/2019) had approved this research.

2.2 The Bern Subjective Well-Being Questionnaire for Adolescents (BFW)

A standardized, The Bern Subjective Well-Being Questionnaire for Adolescents (BFW) (Grob et al., 1991) was used as a primary research method. The BFW questionnaire consists of 28 items scale that measure both positive and negative feelings about the self, covering five main SWB domains (SWB-Ds): (1) Overall life satisfaction” (OLS) supported by 6 items, (2) “Current psychological problems” (CPP) supported by 7 items, (3) “Current physical difficulties” (CPD) supported by 8 items, (4) “Self-esteem” (SE) supported by 3 items and (5) “Depressive mood” (DM) supported by 4 items. Items of four domains (1, 2, 4, and 5) are answered using a 6-point Likert scale format ranging from strongly disagree (point 1) to strongly agree (point 6) and domain 3 Current physical difficulties are answered using a 4-point Likert scale format ranging from not at all (point 1) to very often (point 4). Two SWB-Ds (1 and 4) evaluate a positive attitude of SWB and higher scores indicate higher SWB and three domains (2, 3 and 5) evaluate a negative attitude of SWB and higher scores indicate a lower SWB. In this study, a Slovak version of the BFW was used (Džuka, 1995).

2.3 Data analyses

The program IBM SPSS Statistics version 23.0 was used for data processing. The data were describe using absolute and relative frequencies, including the mean (\bar{x}) and standard deviation (\pm SD). The Kolmogorov-Smirnov test was used to evaluate data normality and non-parametric Mann Whitney *U*-test was used to assess differences between two independent groups of male and female high school students with HDs. The significance level was set at $\alpha \leq 0.05$ (*) and $\alpha \leq 0.01$ (**). The rate of dependence (effect size) between the two samples of features was conveyed by means of the coefficient *r* ($r > 0.90$ - very large effect size, $r = 0.70-0.90$ - large effect size, $r = 0.50-0.70$ - medium effect size, $r = 0.30-0.50$ - small effect size, $r < 0.29$ - very small effect size) proposed by Pett (1997).

3 Results

SWB-Ds analyses show significantly higher Overall Life Satisfaction in the group of male students with HDs (4.45±0.94 points of the mean score) compare female students (4.08±1.03 points of the mean score) ($U=2768$, $p=0.018$, $r=0.184$) (Table 1). Results further revealed significantly higher occurrence of Current Physical Difficulties in the group of female students with HDs (2.18±0.64 points of the mean score) compare their male peers (1.97±0.51 points of the mean score) ($U=2872$, $p=0.041$, $r=0.178$). The higher score of Overall Life satisfaction and lower score of Current Physical Difficulties indicate a higher SWB in the group of male students with HDs preferring sedentary leisure activities compare female peers. Observed data generally presented significantly higher SWB in the group of

male students comparing female students with HDs showing significantly higher level of positive SWB-Ds ($U=2793$, $p=0.022$, $r=0.158$) (Figure 1).

The results of the present study further revealed no significant differences in Current Psychological Problems, Self-Esteem and Depressive Mood between male and female high school students with HDs (Table 1) neither in negative SWB-Ds (Figure 1).

Table 1. Differences in SWB between male and female students with HDs

SWB-Ds	Male students (n=63)	Female students (n=112)	U	p
	$\bar{M} \pm SD$ (point score)			
OLS	4.45±0.94	4.08±1.03	2768*	0.018
CPP	2.46±0.95	2.61±0.98	3234	0.360
CPD	1.97±0.51	2.18±0.64	2872*	0.041
SE	4.44±1.28	4.23±1.20	3065	0.149
DM	2.68±1.09	2.71±0.99	3349	0.577

Note. U = Mann-Whitney U-test statistics; p = statistical significance (p -values ≤ 0.05)

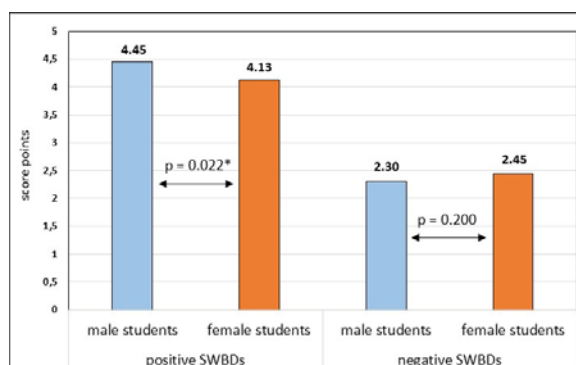


Figure 1. Differences in positive and negative SWB-Ds between male and female students with HDs

Analysing different items of the Overall Life Satisfaction domain we found that male students with HDs presented significantly higher SWB than female peers by reporting:

- "My future looks good";
- "I enjoy life more than most people";
- "I can deal well with the implementation of my life plans".

In the SWB-D of Current Physical Difficulties presented female students with HDs significantly higher occurrence of:

- stomach ache;
- dizziness;
- unable to fall asleep;
- headache.

Even in the SWB-D Self-Esteem were not found significant differences between male and female students with HDs, male students presented significantly higher positive attitude towards themselves comparing female students with HDs preferring sedentary leisure activities.

4 Discussion

SWB represents a general tendency to hold a positive, or not so positive, life view, which also influences the perception of different aspects of life such as health (Røysamb et al., 2003). Research studies has reported relatively strong relations between SWB and perceived health, the associations seem weaker and less stable when external or "objective" measures of specific disorders are used (Diener et al., 1999; Watten et al., 1997). The objective of the present study was to analyse and compare the SWB between male and female high school students with self-reported health disorders preferring sedentary types of leisure activities. The present study declared significantly higher SWB in the group of male high school students with self-reported

health disorders compare female peers by reporting significantly higher level of Overall Life Satisfaction and significantly lower occurrence of Current Physical Difficulties. Already some investigators were measure the SWB among adolescent's population according to the gender differences (Nemček, 2020). Similar finding was revealed by Ladecká, Nemček & Harčariková (2019) who analysed the SWB in the group of students with physical disabilities and compare it between genders. Female students of their study also declared significantly higher occurrence of Current Physical Difficulties compare males, but they also presented significantly higher occurrence of Current Psychological Problems compare male peers (Ladecká, Nemček & Harčariková, 2019). The authors of another research (Nemček, Kurková & Wittmannová, 2019) analysed and compare the SWB among healthy high school population preferring sedentary leisure activities. They found significantly higher level of positive SWBDs and significantly lower of negative SWB-Ds in the group of healthy male high school students compared female peers preferring sedentary leisure activities (Nemček, Kurková & Wittmannová, 2019). Compare the results of the present study, there was also found significantly higher level of positive SWB-Ds in the group of male students compare female peer, but not in negative SWB-Ds.

There is a growing public health concern over the effects that sedentary lifestyles are having on the physical and psychological health of children and adolescents (Bendíková, 2016; Marko & Bendíková, 2019). The SWB in the group of adolescents preferring sedentary leisure activities were investigated by collective of authors Nemček et al. (2020). In the group of male high school students, they found significant differences in all three negative SWB-Ds of BFW questionnaire between healthy adolescents and those with self-reported HDs. The male young people with HDs of their study showed significantly higher occurrence of Current Psychological Problems, Current Physical Difficulties as well as Depressive Mood compare healthy male peers. No significant differences were found in the group of female adolescents according to their self-reported health status (Nemček et al., 2020). In a meta-analysis, Linton (2000) concluded that there was a clear link between distress, anxiety, mood, emotions, and the onset of both acute and chronic pain. Common genetic factors contributing to the relationship between back/neck pain and anxiety/depression have been reported (Reichborn-Kjennerud et al., 2002), and the serotonin and noradrenaline systems of the brain appear to be involved in both psychological distress and pain sensitivity (Atkinson et al., 1999; Besson, 1999; Nemeroff, 1998).

The present study further refers about significantly higher level of positive feelings in the male group of students with HDs when they reported, that their future looks good, enjoy life more than most people, can deal well with the implementation of their life plans as well as showing positive attitude towards themselves compare female peers. The present study further refers about significantly higher level of negative feelings in the group of female students with HDs when they revealed significantly higher occurrence of stomachache, headache, dizziness and problems with sleep compare male students with HDs. Røysamb et al. (2003) found, that SWB is substantially related to perceived health, moderately and negatively related to musculoskeletal pain, and virtually unrelated to allergic disorders. Authors Nemček, Kurková & Wittmannová (2019) also found significantly higher level of positive feelings in the group of healthy male high school students comparing healthy female high school students preferring sedentary leisure activities. Male adolescent of mentioned study displayed, that they can deal well with the implementation of their life plans, do things as well as most people, feel as valuable as the others and have a positive attitude towards themselves. In the same investigation, published by Nemček, Kurková & Wittmannová (2019), healthy female students presented significantly higher occurrence of the same physical problems than female students of the present study but healthy female adolescents of study Nemček, Kurková & Wittmannová (2019) also reported many significant problems in psychological domain, like worries about

other people, relationships, study, health, partner and finances, and females of the present study did not.

5 Conclusion

We conclude that male high school students with self-reported HDs preferring sedentary leisure activities declare significantly higher SWB compare female peers. It has been shown mostly in Life satisfaction and Physical health domains as well as in positive SWB domains.

Literature:

- Atkinson, J. H., Slater, M. A., Wahlgren, D. R., et al.: Effects of noradrenergic and serotonergic antidepressants on chronic low back pain intensity. *Pain*, 1999; 83: 137–145.
- Bendíková E.: Changes in the posture of students due to equipment-aided exercise programs that are applied in physical and sport education. *Journal of Physical Education and Sport*, 2016; 16(2): 281–286.
- Bendíková, E., Marko, M. & Rozim, R.: Effect of 4-week physical program on musculoskeletal system changes in adolescent sport class students with focus in ice hockey. *Physical Activity Review*, 2019; 7: 63–70.
- Besson, J.M.: Pain: The neurobiology of pain. *Lancet*, 1999; 353: 1610–1615.
- Chastin, S.F.M., Buck, Ch., Freiburger, E., Murphy, M. et al.: Systematic literature review of determinants of sedentary behaviour in older adults: a DEDIPAC study. *International Journal of Behavioral Nutrition and Physical Activity*, 2015; 12: 127.
- Diener, E., Suh, E.M., Lucas, R.E., & Smith, H.L.: Subjective well-being: Three decades of progress. *Psychological Bulletin*, 1999; 125: 276–302.
- Džuka J.: Faktorová analýza modifikovanej verzie Bernského dotazníka subjektívnej pohody (BDP) [Factor analyses of modified version of Bern Subjective Well-Being Questionnaire (BFW)]. *Československá psychologie* 1995; 39(6): 512–522.
- Graef, R., Csikszentmihalyi M. & Gianinno, S.M.: Measuring intrinsic motivation in people's everyday lives. *Leisure Studies*, 1983; 2(2): 155–168.
- Grob, A., Lüthi, R., Kaiser, F.G, et al.: Berner Fragebogen zum Wohlbefinden Jugendlicher (BFW). *Diagnostica*, 1991; 37(1): 66–75.
- Headey, B., Veenhoven R. & Wearing, A.: Top-down versus bottom-up theories of subjective well-being. In: *Social indicators research*, 1991; 24(1): 81–100.
- Kuykendall, L., Boermerman L. & Zhu, Z.: *The importance of leisure for subjective well-being*. In: Diener, E., Oishi S. & Tay L. (eds). *Handbook of well-being*. Salt Lake City: DEF Publishers, 2018.
- Ladecká, P., Nemček, D. & Harčariková, T.: Subjective well-being of students attending the special vocational school for children with physical disabilities: Gender differences. *Ad Alta: Journal of Interdisciplinary Research*, 2019; 9(2): 427–431.
- Linton, S.: A review of psychological risk factors in back and neck pain. *Spine*, 2000; 25: 1148–1156.
- Marko, M., Bendíková, E.: Changes of body posture in elementary school pupils by applying propriofoot concept in P.E. lessons. *Acta Facultatis Educationis Physicae Universitatis Comenianae*, 2019; 59(2): 172–183.
- Nemček, D., Pačesová, P., Šmela, P., Ladecká, P. & Harčariková, T.: Health status differences in subjective well-being of male and female high school students preferring sedentary leisure activities. *Physical Activity Review*, 2020; 8(2): 1–8.
- Nemček, D., Kurková, P. & Wittmannová, J.: Gender differences in subjective well-being of healthy high-school students. *Acta Facultatis Educationis Physicae Universitatis Comenianae*, 2019; 59(2): 161–171.
- Nemček, J.: Gender differences in subjective quality of life of elite and competitive sports games players. *Acta Facultatis Educationis Physicae Universitatis Comenianae*, 2020; 60(1): 105–116.
- Nemeroff, C.B.: The neurobiology of depression. *Scientific American*, 1998; 278: 42–49.
- Parsons, H., Mackenzie, S.H., Filep, S. & Brymer, E.: *Subjective Well-being and Leisure*. In: W. Leal Filho et al. (eds.). *Good Health and Well-Being*, Switzerland AG: Springer Nature, 2019.
- Pett, M.A.: Nonparametric statistics for health care research: Statistics for small samples and unusual distributions. Thousand Oaks, CA: Sage; 1997.
- Reichborn-Kjennerud, T., Stoltenberg, C., Tambs, K., Røysamb, E. et al.: Back-neck pain and symptoms of anxiety and depression: A population-based twin study. *Psychological Medicine*, 2002; 32: 1009–1020.
- Røysamb, E., Tambs, K., Reichborn-Kjennerud, T., Neale, M.C. & Harris, J.R.: Happiness and Health: Environmental and Genetic Contributions to the Relationship Between Subjective Well-Being, Perceived Health, and Somatic Illness. *Journal of Personality and Social Psychology*, 2003; 85(6): 1136–46.
- Tov, W. & Diener, E.: *The Encyclopedia of Cross-Cultural Psychology*, First Edition. Edited by Kenneth D. Keith. © 2013 John Wiley & Sons, Inc. Published 2013 by John Wiley & Sons, Inc.
- Van Sluijs, E.M.F., Page, A., Ommundsen Y. & Griffin, S.J.: Behavioural and social correlates of sedentary time in young people. *British Journal of Sports Medicine*, 2008; 44(10): 747–755.
- Wilmot, E.G, Edwardson, C.L, Achana, F.A, Davies, M.J, Gorely, T., Gray, L.J., et al.: Sedentary time in adults and the association with diabetes, cardiovascular disease and death: systematic review and meta-analysis. *Diabetologia*, 2012; 55: 2895–905.

Primary Paper Section: A

Secondary Paper Section: AK

EXAMINATION OF TEACHER STUDENTS' INDUCTIVE THINKING ABILITY

^aPÉTER TÓTH, ^bKINGA HORVÁTH, ^cGYÖRGY JUHÁSZ

J. Selye University, Bratislavská cesta 3322, SK-94501

Komárno, Slovakia

email: ^atothp@ujvs.sk, ^bhorvathki@ujvs.sk, ^cjuhaszg@ujvs.sk

This research has been supported by the project titled „VEGA-1/0663/19 Analysis of science and mathematics education in secondary schools and innovation of teaching methodology”.

Abstract: Available literature on researching inductive thinking ability is really rich. Our study presents three types of approaches: it is (1) a constructive element of intelligence, (2) the decisive method of human learning, (3) a key competence playing an important role in understanding. The main objectives of our research were to (1) determine the development level of the inductive, and within that the abstract and analogue thinking of the teacher students starting their studies in higher education, (2) find the background variables by means of which significant differences can be found between the various student groups, (3) respond to the question whether any conclusions regarding the performance expected in the inductive test can be drawn based on the time spent on solving the tasks. The students' analogue reasoning and rule induction are more developed than their diagrammatic thinking. One of the preconditions of a good result achieved in the inductive test is the full utilization of the available time frame. Introducing the idea of specific performance we found that the students having achieved the best results were studying at teacher specialization in full time training, lived in cities and had parents with a degree. The students could be properly grouped according to the time used for problem solution: (1) negligent and superficial, (2) reflective but not persistent enough; (2) persistent and diligent. Knowing the type of training and specialization of the students helps defining/understanding the clusters.

Keywords: inductive, analogue and diagrammatic reasoning, teacher training, specific learning performance, task solution time

1 Background

The students' intellectual capacities to meet university requirements is one of the most significant risk preliminaries identified by the relevant literature (O'Neill et al., 2011; Stewart et al., 2015; Sarra et al., 2018). The justification of focusing at the vulnerability of university studies (Sosu- Pheunpha, 2019) is directly connected to the policies of the world's governments the objective of which is to achieve equity and social justice in the access to higher education (UNESCO, 2015). However, the impact of this vulnerability is not deterministic; it is in close connection with psychological factors like self-efficiency and self-control that are important indicators of university persistence (Richardson et al., 2012; Respondek et al., 2017). The papers focusing at the learning results reveal the fact that an integrated learning of the education content leads to better conceptual understanding, improves cooperation skills, the students' capacities to solve problems and critical and inductive thinking at all levels of school education (Roberts, 2009; Cervetti et al., 2012; Darwish, 2014; Zahatňanská – Nagy, 2020). The results of several studies have declared close connection between abstract reasoning and educational results (Bennedsen - Caspersen, 2006; Armoni, Gal-Ezer, 2007; Roberts, 2009). Abstract reasoning is inevitable to comprehend and interpret scientific concepts (Darwish, 2014).

Inductive reasoning and thinking can be explained from three various points of view.

The first idea reckons the ability of inductive implication and reasoning among the elements of intelligence (Wilhelm, 2005). Intelligence can be defined as using intentional mental operations to solve new problems. These mental operations include implications, the creation and classification of the concept, generation and testing of the hypothesis, identification of the relations, understanding the consequences, problem solution and the extrapolation and transformation of information (Dumontheil, 2014). Thus intelligence is closely connected to inductive reasoning and thinking (Ferrer et al., 2009). It is thought that intelligence is a basic constituent of cognitive development (Goswami, 1992) and provides as the base for gaining various capabilities in various fields in childhood and adolescence, as well (Blair, 2006; Ferrer et al., 2009). Childhood intelligence is an apt indicator to forecast cognitive school performance (Gottfredson, 1997; Primi et al., 2010). So

intelligence is a predictor of learning effectiveness, especially in new and complex situations.

The second view comprehends inductive reasoning, and within that abstract thinking, as an important method of human cognizance. By means of this we become able to extract the essence from complicated and abstract issues and to realize the interconnections. This is particularly essential in understanding knowledge in natural sciences. Abstract reasoning and thinking plays an important role in drawing conclusions, forming opinions, recognizing rules and regularities, i.e. in logical thinking as well as in concept creation (Inhelder, Piaget, 1958; Schwank, Schwank, 2015; Brendefur, Rich, 2018; Devi, 2019). Researchers have proved that the pupils quitting the nursery school in lack of the basic competencies in mathematics would face serious difficulties at primary and secondary schools, as well (Duncan et al., 2007; Jordan et al. 2009; Morgan, Farkas, Wu, 2009). It is, however, important to emphasize the fact that the development of inductive reasoning and thinking is influenced by several other biological, psychological, social and cultural factors, too (Amsel, Moshman, 2015).

According to the third approach, inductive reasoning is a key competence (Kramer, 2007) in achieving learning successes and results and in comprehension, which is mainly stressed by the teachers of mathematics, computer sciences and natural sciences (Iqbal, Shayer, 2000; Kuhn et al. 1977; Adey, Shayer, 1994; Szököl – Nagy, 2015). Puberty appears as the critical phase of the reorganization of regulatory systems (Steinberg, 2005). Blakemore (2012) has shown that puberty is a period of permanent neurological development that may last longer than that suggested by Inhelder and Piaget's (1958) and Piaget's theory (Piaget, 1972). This was also proved by the examination of pupils' skills to solve simple algebraic equations. The gained results showed that younger students were less precise and were slower when solving the equations with letters and symbols than they were when using numbers. Küchemann (1981) reported that most of the students under 15 do not know algebraic letters (symbols) as unknowns or universal numbers, which can be expected of operative thinkers. This difference disappeared with older pupils (aged 16-17), which refers to the fact that they reached an abstract level of argumentation (Markovits et al., 2015). Similar conclusions were drawn based on the analysis of their strategies, which indicates that the younger pupils had mostly used strategies like the embedment of numbers while older students had generally followed more abstract and rule-based strategies. Kusmaryono et al. (2018) reported that none of the pupils aged 14-15 had reached the quality stadium of inductive reasoning. Darwish (2014) presented similar results and also stated that only 42 percent of the first-grade teacher students at natural scientific specializations were capable of formal cognition, which shows that university students are late in cognitive development (Cohen, Smith-Gold, 1978) or in reaching the expected level of abstract thinking. These outcomes, too, point to the fact that the development of algebraic cognition is a process taking long time to evolve (Susac et al., 2014).

During the latest 25-30 years, many researches examined the inductive reasoning of teacher students (Astin, 1997; Bowman, 2010; Darwish, 2014). These on one hand prove that dealing with natural sciences needs a high level of inductive and abstract reasoning, which may ease the proper teaching of abstract theories (Darwish, 2014); on the other hand, they emphasize the importance of teachers' vocational development (Brendefur et al., 2016; Brestenská et al., 2019), and highlight the most effective elements of vocational development (Koellner et al. 2011; Desimone, 2011; Sztajn et al., 2011). Yoon et al. (2007) write that most of the researches related to the vocational development of mathematics disproved an improvement in the pupils' performance as the characteristics and competencies necessary to change the teachers' practice were lacking.

However, latest researches have found contrary results. Nagdi et al. (2018) identified cooperation, flexibility, the knowledge of pupils' needs and openness to equality and inclusion as the key elements of the personal characteristics of STEM (science, technology, engineering and mathematics) teachers. The notions conform to the literature on teacher identity (Akkerman, Meijer, 2011; Franzak, 2002; Schutz et al., 2018) where the nature of teacher identity is considered a dialogue concept in which personal and professional experiences interact with the so-called STEM-skill. Searching the problem from the students' aspect, one will find that the pupils' STEM knowledge, skills and abilities can be supported by the informal learning environment (Denson et al., 2015), which can have a positive impact on pupils' interest in STEM (Denson et al., 2015; Mohr-Schroeder et al. 2014) and may increase the probability of the continuation of a STEM career during higher education studies (Kitchen et al. 2018; Kong et al., 2014).

2 Aim of research

The main objective of the empiric research was to (1) determine the development of the inductive, and within that the abstract and analogue thinking of teacher students starting their studies in higher education, (2) find the background variables by means of which significant differences can be detected between the various groups of students and (3) respond to the question whether any conclusions regarding the performance expected in the inductive test can be drawn based on the time spent on solving the exercises.

3 Materials and methods in research

We face a question here: how could it be possible to measure reliably the students' inductive, and within that abstract reasoning without the specific subject knowledge and competences (e.g. in mathematics or physics). There are several methods available, like some intelligence tests (e.g. Raven), tests measuring abstract reasoning or measuring tools focusing at the given competence component.

During our research we applied the measurement tools elaborated by Psychometric Success WikiJob Ltd. (UK, London) that lays great stress on labour market expectancies (Newton, Bristoll, s.a.). These tests were built on single- and multiple-factor intelligence theories (Mackintosh, 1998).

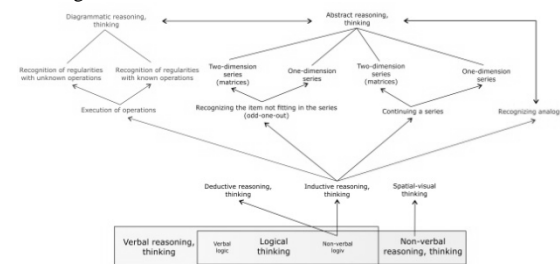
Spearman, for example, was of the opinion that there is one or several common factors existing in terms of the solution of each intellectual task that is a pledge of success (Mackintosh, 1998). He divided the g-factor of intelligence into two parts: (1) inductive logical (eductive) and (2) reproductive skills related to storing and recalling information. The Raven-test, for example, connects to the previous one, while vocabulary test belongs to the latter (Kane, Brand, 2003).

Eductive competences refer to logical operations based on conclusion by means of which, through the recognition and comprehension of interconnections and the consideration of the contextual content, new knowledge is created from the perceived information. To understand the whole of the problem, holistic approach is needed while its solution demands the ability to recognize the relations and interdependences between the parts. Understanding the problem is more than comprehensive pattern recognition (Gestalt); it is also necessary to highlight the essence and neglect unimportant elements. In most cases, these are not possible to be verbalized, therefore, the measuring tools mainly consist of geometrical figures (squares, polygons, circles etc.). The perception of these geometrical forms, the recognition of their typical characteristics and the comprehension of the relations between them is dependent on the existing knowledge on one hand and certain cultural effects on the other (Kane, Brand, 2003). The previous one is in harmony with the inductive operations (Klauer, Phye, 2008). As for the latter, one of the main advantages of the test must be stressed: it is, to a certain extent, culture-independent.

Paul Newton and Helen Bristoll (s.a.) elaborated an inductive reasoning test building on the Raven eductive skills measurement test but paying more attention to career aspects in nature sciences. To examine cognition based on inductive reasoning and thinking, they developed the skills structure presented in Figure 1.

The problem for the solver lies in the difficulty to realize the logical relations hiding behind the patterns in the tasks. The problems root in the difficulty to recognize the changes or the iteration of the following characteristics: (1) form, (2) size, (3) colour and (4) pattern. The tasks consist of visual patterns and geometrical figures, and the series (one- or two-dimension matrices) must be continued, or the elements not fitting be found, relying on the recognition of the logical interrelations behind them.

Figure 1: The task system examining inductive reasoning and thinking



In our research, we used an inductive and abstract reasoning online test made of 30 items where the certain types of exercises contained 6 items:

- Continuation of one-dimension series
- Recognition of the ('odd-one-out') elements not fitting in the one-dimension series
- Recognizing an analogue
- Recognizing regularity – unknown operation (examination of diagrammatic reasoning)
- Recognizing regularity – known operation (examination of diagrammatic reasoning)

One- (series) and two-dimension matrices demand the capability to recognize various interconnections that in many cases are not evident at the first instance. The recognition of connections between geometric figures can be isolated from the identification of single figures. This latter one must be clear-cut for each person in the experiment. According to Spearman (1927), the perception of the geometrical forms immediately elicits knowledge created about the connections, and this is true vice versa, as well. All this means that perception, observation and abstract thinking make one whole during cognition. When solving the problem, each characteristic of the geometrical figures must be observed simultaneously, their interconnections must be understood and perception must be precise to the smallest details. No good solution can be born without recognizing the "whole", however, identifying the "parts" is of decisive importance, as well (Georgiev, 2008).

In terms of identifying analogues, already Sternberg pointed to the fact that the difficulty of the problems lies in the recognition of regularities originating in the change of the characteristics of the certain objects (A, B, C, D) for which the relation(s) (R) in terms of A and B must be recognized and then applied in terms C and D to identify D (Sternberg, 1977):

$$A - R - B :: C - R - D$$

He found that the experimentee may follow two strategies in selecting object D: (1) (s)he considers the potential D candidates one by one, and examining each of their characteristics chooses the object fitting in the recognized relation the most (sequential search), or (2) examines the characteristics one by one in terms of each potential object D and then selects the one in the case of

which all the characteristics are the most suitable according to the recognized relation (alternative search).

The analogue mappings applied during the research are consistent while the structure mapping processes playing a role in the analogue are selective. The latter one refers to both the individual characteristics and relation (Boulton-Lewis, Halford, 1992).

The test examining diagrammatic thinking was focused at accomplishing tasks as well as recognizing and accomplishing them. Flow charts are presented through which the impacts exerted by the so-called operators (rules) on various figures can be detected. The first task of the experimentee is to conclude the functions of the certain operators or operations based on the diagrams (flow charts), and then relying on this knowledge, select the missing output.

The test measures the ability of how logically the subject is able to follow the arranged sign series. Although the test consists of simple flow charts, its solution requires the experimentee to be able to track the changes taking place in the form, colour and size of the objects. This skill is outstandingly important, for example, when analysing certain system processes, in error correction and in system planning (Stieff et al., 2010).

Items similar to the applied test can be seen at: <http://www.psychometric-success.com>

Several researches examined whether it was possible to draw conclusions in relation to the difficulty and performance from the time used for the solution of identical items. Jacobs and Vanderverter thought that the difficulty level of the items was in connection with the number of the characteristics that had to be compared and remembered (Georgiev, 2008), so those achieving better results were able to keep several things in mind at the same time; however, it could also mean that they spent more effort on the given item (Jacobs, Vanderverter, 1968). Vodegel et al. refer to the work of Home and Habon who found it was not possible to draw conclusions concerning the difficulty level of the items from the time spent on solution (Vodegel et al., 1994).

4 Materials and methods in research

The research involved 204 first-grade teacher students of J. Selye University. The demographical data of the participants are summarized below:

- Gender: 17.6% (N=36) male, 82.4% (N=168) female,
- Age: M=25.10 years, MOD: 20 years, SD=8.267 years, 76 persons (37.2%) between 19 and 20, while 49 persons (24.0%) between 21 and 22,
- Father's highest education level: primary school 9 persons (4.4%), vocational school 85 persons (41.7%), secondary technical school 72 persons (35.3%), secondary grammar school 18 persons (8.8%), higher education 20 persons (9.8%),
- Mother's highest education level: primary school 17 persons (8.3%), vocational school 47 persons (23.0%), secondary technical school 85 persons (41.7%), secondary grammar school 24 persons (11.8%), higher education 31 persons (18.2%),
- Place of living: city 92 persons (45.1%), other settlement 112 (54.9%),
- Country of secondary school leaving exam: Slovakia 120 persons (58.8%), Hungary 83 persons (40.7%),
- Type of the school of secondary school leaving exam: four-grade secondary grammar school 70 persons (34.3%), eight-grade secondary grammar school 9 persons (4.4%), secondary technical school 113 persons (55.4%) and adult education 12 persons (5.9%),
- Language of teaching at secondary school: Hungarian 182 persons (89.2%), Slovakian 12 persons (5.9%), bilingual 10 persons (4.9%),

- Specialization: teacher training 57 persons (27.9%), nursery school education 127 persons (62.3%), pedagogy and public education 19 persons (9.3%),
- Training: full-time 145 persons (71.1%), correspondence 59 persons (28.9%),
- Place of stay during the studies: live at home 127 persons (62.3%), at dormitory 71 persons (34.8%), in lodgings 6 persons (2.9%),
- Family conditions: live with their families 160 persons (78.4%), with life-partner or spouse 31 persons (15.2%), alone 7 persons (3.4%), with a friend 6 persons (2.9%).

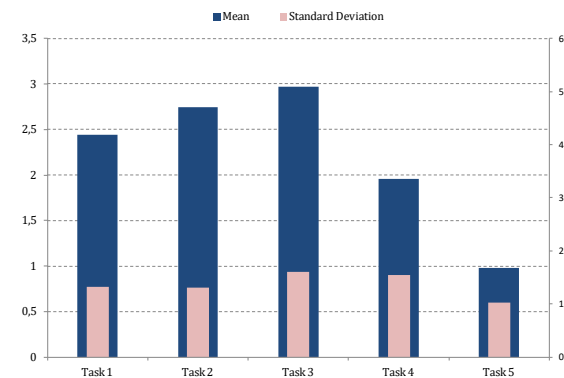
According to the above presented data, most of the students had their secondary school leaving exams in Hungarian, at secondary technical schools, and the rate of those having applied for the full-time nursery school teacher training is high. A high proportion of the students took their exams in Hungary. As for the parents' education level, the rate of those with secondary vocational education is high.

5 Results

First we compare the results achieved by the students during the solution of the certain tasks. There were 179 students who solved each type of the exercises. As shown in Figure 2, the results remained under the average. The students' diagrammatic reasoning proved to be especially underdeveloped. The best results were reached in the exercises demanding analogue thinking, however, standard deviation is also the biggest here.

According to Kolmogorov and Smirnov, the components of abstract reasoning and thinking are not of normal distribution, however, because of the permissive conditions (Kurtosis/Std. Error of Kurtosis and Skewness/Std. Error of Skewness, i.e. they are under 2.58) (Rumelhart, 1989) we still accept them as that.

Figure 2: Breakdown of averages and standard deviation of abstract reasoning by exercises



During the pilot measurement, the students had 25 minutes to solve the problems, which proved to be insufficient in some cases. The items could be solved only one after the other. The online system registered the time used by the students by items. Analysing the gained data, two statements can be made.

- Figure 3 indicates the average time spent by the students who started to solve the given item. As for task types 4 and 5, it can be seen that the average amount of time spent on the first exercise is very high as compared to that spent on the rest of the items. This means that it was difficult to understand these two types and to explore the interconnections. The high standard deviation value of the tasks proves this fact, as well.
- We created three categories by task types (weak performance: 0-2 points, medium performance: 3-4 points, good performance: 5-6 points). Figure 4 shows that the number of those gaining low numbers of points swelled at Task 4.

Figure 3: Time consumption by items

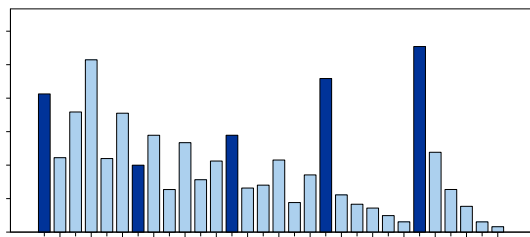
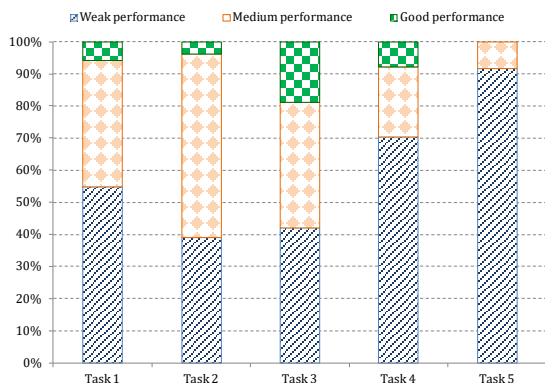
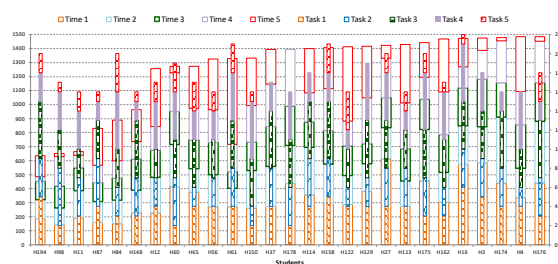


Figure 4: Proportion of student performance categories by task type



Now let us examine the students who achieved higher scores as compared to the whole of the group, i.e. whose abstract and inductive reasoning is more developed. There are 27 students of this type. The points (filled columns) and time usage (empty columns) of these students are presented in Figure 5, by time consumption, in an increasing order, from left to right. In the cases of the first six students it is clearly visible that they achieved higher scores even with relatively low time consumption. These students gained 16-20 points in a time less than 16 minutes (superficial but quick-witted). The next category is again made by six students, they achieved similar results in less than 21 minutes (considered and clever). The rest of the students used almost all of the time available (24-25 minutes) and reached good results (slow and clever).

Figure 5: Scores of 27 students achieved in the test and the time consumed

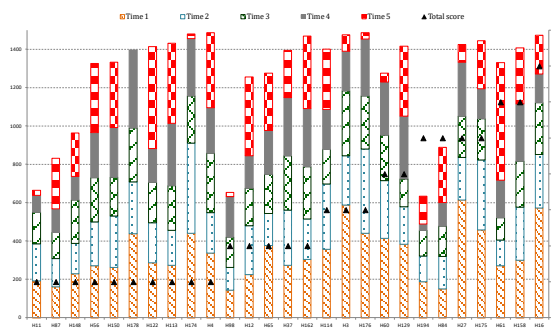


Remark: Time is indicated on the left hand vertical axis and the scores on the right one.

To demonstrate success, we introduced the concept of specific performance. In the inductive test, we can understand specific performance as the time necessary to achieve a unit of score, which was defined as the ratio of consumed time and achieved points by tasks: $\text{time} \times \text{score}^{-1}$ where time indicates the time spent on solving task x (6 items) by seconds, while score represents the score reached during this time. We put the students reaching the highest scores in this dimension, as well. We considered 300 sec/point as high specific performance, which means that the student achieved a high number of points using little time. The value between 300 sec/point and 450 sec/point was assessed as specific performance of medium level,

and the values above were considered low specific performance, i.e. a high amount of time was used to reach one unit of points.

Figure 6: Specific performance of the 27 students



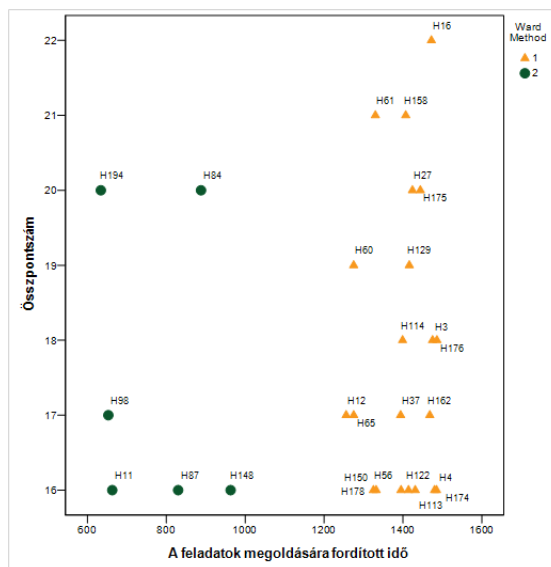
Remarks: Time is indicated on the left hand vertical axis and scores on the right one.

It can be clearly seen in Figure 6 that in almost each cases (except for H60, H174, H178 and H176) it was the last task demanding diagrammatic reasoning that reduced specific performances.

We ranked the students according to the total number of points gained in the five types of tasks (Figure 7). It can be clearly seen that in most cases, the students used the whole of the time frame available, however, each category includes one or two students who achieved results similar to those of the others by using little time. For example, in the group of 16 points, student H11 and H87, H98 in the group of 17 points and students H194 and H84 in the group of 20 points.

We can state that using the whole of the time available does not necessarily bring about a high score, however, it can be seen that almost each of the students having gained more than 20 points utilized the 25 minutes left for them for the test.

Figure 8: Time consumption and final score of the best 27 students, divided in two clusters



We also examined the results of the 27 students performing well in the test by cluster analysis (Figure 8). The first group indicated with triangles includes the sober ones utilizing the whole time frame, while the second group involves the impatient and superficial ones seeking quickness. We analysed the clusters according to the cluster centroids (Table 2). The averages were examined by variance analysis. No significant differences were found in terms of the achieved scores, however, there were significant differences between the certain cluster centroids in

terms of time consumption ($F=222,902$; $p<0,05$). Time consumption accounts for 89.9% of the standard deviation. We checked the reliability of the hierarchic cluster analysis by the K-mean process but found no major discrepancy between the results.

Table 2: Cluster centroids and standard deviations

Cluster		Number of points gained in the test	Time used for solving the task
1	N	21	21
	M	17.90	1399.19
	SD	1.947	73.352
2	N	6	6
	M	17.50	771.83
	SD	1.975	140.276
Total	N	27	27
	M	17.81	1259.78
	SD	1.922	280.295

Concerning the background variables of the 27 students having achieved good results, the following statements can be made:

- their parents have a degree, it is especially the rate of the mothers that is high as compared to the participants of the research,
- most of them are nursery school teacher students who
- took their secondary school leaving exams in Hungarian speaking schools and
- at a correspondence course.

We examined the background variables of the 7 students who had reached the best results (≥ 20 points) separately. In their cases, the pattern of the background variables changed to some extent:

- their parents have a degree, the rate of mothers with higher education is especially high as compared to all participants of the research,
- most of them are teacher students,
- they took their secondary school leaving exams in Hungarian-speaking schools and
- in full-time training.
- These students live in cities and
- possess work experiences, most of them in educational fields, despite the fact that five of the seven attend full-time training.

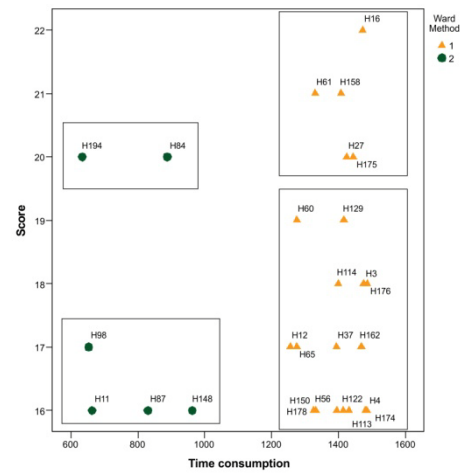
In terms of task solution, two groups can be created (Figure 8): superficial but quick-witted (≤ 1000 sec) and prudently thorough (>1000 sec).

The pattern of the superficial but quick-witted ones (6 persons) has the following characteristics:

- their parents do not have a degree,
- they live in smaller settlements,
- they studied in Hungarian-speaking secondary grammar schools previously,
- are in full-time training now,
- in teacher training.

In relation to the superficial but quick-witted ones it must be remarked that for students H83 and H194 it is rather the latter attribute that should be used because low time consumption goes hand in hand with high scores (Figure 9).

Figure 9: Time consumption and total score of 27 students distributed into 4 groups



And as for the prudently thorough ones (21 persons):

- parents with a degree make the majority but the rate of the mothers with no secondary final exam and that of the fathers with a secondary final exam is also high,
- they live in cities,
- significantly most of them are involved in the correspondence training
- and the nursery school teacher specialization.

Among the sedate ones, a group of students achieving good results with high time consumption can be observed (upper right corner of Figure 9) as well as another group reaching lower scores, however, cluster analysis did not give a proof of this.

We also checked the relation of time consumption and achieved scores in terms of the whole sample (Figure 10). This relation can be sufficiently described by an exponential function:

$$Score = 6.48 * \exp(0.00055 * \text{time consumption})$$

The model accounts for 39.9 percent of all of the variances. The ANOVA survey indicates a significant regressive relation ($F=100.318$; $p<0.05$).

Finally, we made the cluster analysis of the whole sample. We came to a conclusion similar to that regarding the students with good results, i.e. clusters can be created according to the time used for task solution. In this case, three groups can be created (Figure 11):

- neglectful and superficial ones,
- sober-minded but not persistent enough and
- persistent and diligent ones.

Figure 10: Relation between time consumption and total score of the whole sample

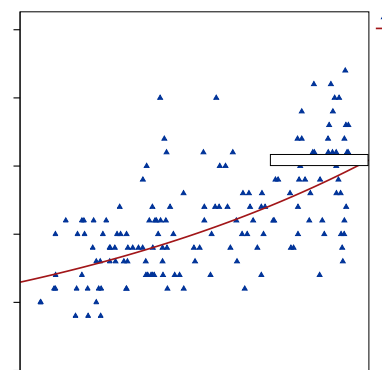


Figure 11: Clusters composed of the whole sample

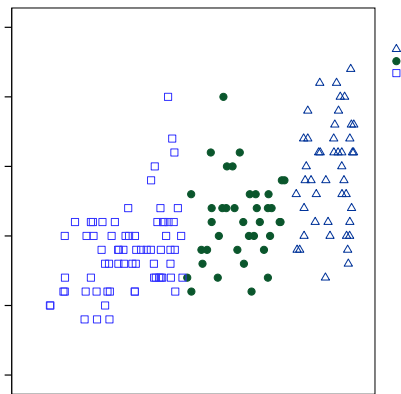


Table 3: Cluster centroids and standard deviation

Cluster		Total score during the test	Time used for task solution
1	N	45	45
	M	1378.36	14.51
	SD	84.658	3.841
2	N	38	38
	M	961.000	11.21
	SD	128.830	3.024
3	N	70	70
	M	455.79	8.93
	SD	166.251	2.994
Total	N	153	153
	M	852.61	11.14
	SD	419.463	4.023

Each of the three groups contain students having reached low as well as high scores, however, the tendency is what is described by the regression analysis.

Reliability here was checked by the K-means procedure and was found sufficient. The data of the cluster centroids are summarized in Table 3.

Figure 12: Belonging to the clusters by the type of training

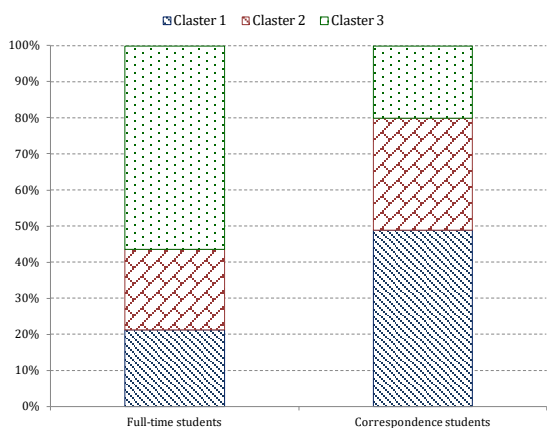


Figure 13: Belonging to clusters by specialization

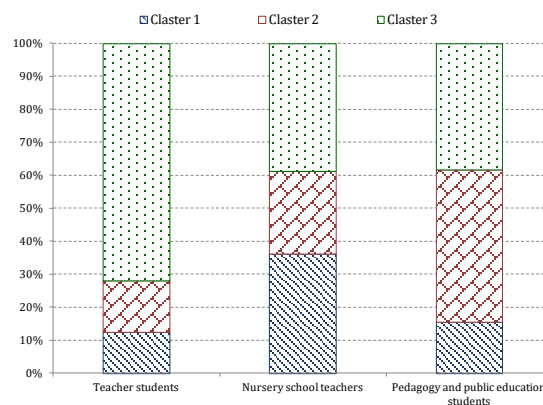


Table 4: Description of clusters

	Cluster 1	Cluster 2	Cluster 3
Time used for task solution	less	medium	more
Achieved result	5 – 20 points	6 – 20 points	7 – 22 points
Type of training	correspond-ence	full-time and correspond-ence	full-time
Specialization	nursery school teachers	pedagogy and public education	teacher students, nursery school teacher students

We examined the composition of the clusters in terms of the background variables for the whole sample (Figure 12-13). The higher rate of full-time students belongs to cluster C3 while that of the correspondence students to C1. Most of the teacher students belong to C3, most students of pedagogy and public education to C2 while nursery school teacher students mainly belong to C1 and C3. We proved it by Chi-square test that there is significant correlation between the type of training and classification into clusters ($F= 18.473$; $p<0.05$) as well as between the specialization and belonging to a cluster ($F= 15.138$; $p<0.05$). Table 4 presents the summary of these by describing the clusters.

6 Conclusions

The objective of our research implemented with the participation of 204 first-grade teacher students was to (1) determine the development level of their inductive, and within that abstract and analogue as well as diagrammatic reasoning and their rule induction; (2) respond to the question whether it is possible to draw conclusions from time consumption regarding the performance expected in the inductive text; (3) identify the background variables by means of which significant differences can be detected between the student groups. We have found the following answers.

- (1) The students' analogue reasoning and rule induction are much more developed than their diagrammatic reasoning.
- (2) One of the preconditions of achieving a good result in the inductive test is the utilization of the whole time available, however, maximal time utilization does not necessarily bring about outstanding performance. Each of the students having gained high scores used the available time fully. Introducing the notion of specific performance, we found that the students with the best results are involved in full-time teacher training, live in cities and their parents have a degree. Specific performance was mainly deteriorated by the high amount of time used for the diagrammatic exercises.
- (3) Students can be well grouped by time consumption: (a) neglectful and superficial, (b) considered but not persistent enough, (c) persistent and diligent. Knowing the type of training and specialization of the student helps us understand the clusters.

The deficiencies in diagrammatic reasoning are less problematic in teacher training; developed rule induction and analogue

thinking are, however, of outstanding importance in understanding the learning content.

In the next phase of the research we wish to explore what results will be achieved during their first-year studies by the students who have reached good results in the inductive test. Do good study results follow from developed inductive reasoning and thinking? And likely: are poor test results able to predict learning difficulties?

Literature

1. Adey, P., Shayer, M.: Really raising standards: Cognitive intervention and academic achievement. London: Routledge, 1994, ISBN 978-0-415-10145-5
2. Akkerman, S. F., Meijer, P. C.: A dialogical approach to conceptualizing teacher identity. *Teaching and Teacher Education*, 27(2), 2011, 308–319
3. Amsel, E., Moshman, D.: Logical and Hypothetical Reasoning in Adolescence Development of. In: Wright, J. D. (Ed.): *International Encyclopedia of the Social & Behavioral Sciences*. 14, Oxford: Elsevier, 2015, 306-312. ISBN 978-0-08-097087-5, <https://doi.org/10.1016/B978-0-08-097086-8.23089-4>
4. Armoni M, Gal-Ezer J.: Non-determinism: An abstract concept in computer science studies. *Computer Science Education*, 17(4), 2007, 243-262.
5. Bennedsen, J., Caspersen, M. E.: Abstraction ability as an indicator of success for learning object-oriented programming? *ACM SIGCSE Bulletin*, 38(2), 2006, 39-43.
6. Blair, C.: How similar are fluid cognition and general intelligence? A developmental neuroscience perspective on fluid cognition as an aspect of human cognitive ability. *Behavior and Brain Sciences*, 29(2), 2006, 109-125.
7. Blakemore, S. J.: Imaging brain development: the adolescent brain. *Neuroimage*, 61, 2012, 397–406.
8. Boulton-Lewis, G. M., Halford, G. S.: The processing loads of young children's and teachers' representations of place value and implications for teaching. *Mathematics Education Research Journal*, 4(1), 1992, 1-23.
9. Bowman, N. A.: College diversity experiences and cognitive development: A metaanalysis. *Review of Educational Research*, 80(1), 2010, 4-33
10. Brendefur, J. L., Thiede, K., Strother, S., Jesse, D., Sutton, J.: The Effects of Professional Development on Elementary Students' Mathematics Achievement. *Journal of Curriculum and Teaching*. 2016, 5(2), 95-108.
11. Brestenská, B., Fehér, Z., Jaruska, L., Juhász, Gy., Puskás, A., Szarka, K. 2019. Teacher trainees attitude towards the implementation of selected web-based applications in teacher training. In: CBU International Conference Proceedings 2019 : *Innovations in Science and Education* : March 20-22, 2019, Prague, Czech Republic: Innovations in Science and Education : March 20-22, 2019, Prague, Czech Republic. Petr Hájek, Ondřej Vít. Praha: CBU Research Institute, 2019, S. 387-392. ISBN 978-80-907722-0-5.
12. Cervetti, G., N., Barber, J., Dorph, R., Pearson, P., D. Goldschmidt, P.: The impact of an integrated approach to science and literacy in elementary school classrooms. *Journal of Research in Science Teaching*, 49(5), 2012, 631-658
13. Cohen, E., Smith-Gold, D. A.: Your students cognitive functioning: An important factor in readiness to learn. Williams, J., Felber, S., Vaughn, D. (Eds.): *Proceedings of the Annual Conference of Western*. College Reading Association, 11, 1978, 31-34, <https://doi.org/10.1080/24699365.1978.11669666>
14. Darwish, A. H.: The abstract thinking levels of the science-education students in Gaza universities. *Asia-Pacific Forum on Science Learning and Teaching*, 15(2), 2014, ERIC Number: EJ1053321, p24.
15. Denson, C. D., Hailey, C., Stallworth, C. A., Householder, D. L.: Benefits of informal learning environments: a focused examination of STEM-based program environments. *Journal of STEM Education: Innovations and Research*, 16(1), 2015, 11-15.
16. Desimone, L.: A Primer on Effective Professional Development. *Phi Delta Kappan*, 92(6), 2011, 68-71. <https://doi.org/10.1177/0031721711109200616>
17. Devi, K. S.: Application of Fundamental Mathematical Structure using a Self Game for Cognitive Development in Children. *International Journal of Trend in Scientific Research and Development*, 3(3), 2019, 843-846.
18. Dumontheil, I.: Development of abstract thinking during childhood and adolescence: The role of rostralateral prefrontal cortex. *Developmental Cognitive Neuroscience*. 10, 2014, 57-76.
19. Duncan, G. J., Dowsett, C. J., Claessens, A., Magnuson, K., Huston, A. C., Klebanov, P., Brooks-Gunn, J.: School readiness and later achievement. *Developmental Psychology*, 43(6), 2007, 1428-1446. <https://doi.org/10.1037/0012-1649.43.6.1428>
20. Ferrer, E., O'Hare, E. D., Bunge, S. A.: Fluid reasoning and the developing brain. *Frontiers in Neuroscience*, 3, 2009, 46-51.
21. Franzak, J. K.: Developing a teacher identity: the impact of critical friends practice on the student teacher. *National Council of Teachers of English*, 34(4), 2002, 258-280.
22. Georgiev, N.: Item Analysis of C, D and E Series from Raven's Standard Progressive Matrices with Item Response Theory Two-Parameter Logistic Model. *Europe's Journal of Psychology*, 4(3), 2008, <https://doi.org/10.5964/ejop.v4i3.431>
23. Goswami, U.: Analogical Reasoning in Children. In: Gentner, D., Holyoak, K. J., Kokinov, B. N. (eds.): *The Analogical Mind: Perspectives from Cognitive Science*. Hillsdale: Lawrence Erlbaum, 1992, 437-470, ISBN 978-0-262-57139-5
24. Gottfredson, L. S.: Why g matters: the complexity of everyday life. *Intelligence*, 24(1), 1997, 79-132
25. Inhelder, B., Piaget, J.: An essay on the construction of formal operational structures. The growth of logical thinking: From childhood to adolescence. London: Routledge and Kegan Paul, 1958, ISBN 978-0-415-21002-7
26. Iqbal, H. M., Shayer, M.: Accelerating the Development of Formal Thinking in Pakistan Secondary School Students: Achievement Effects and Professional Development Issues. *Journal of Research in Science Teaching*, 37(3), 2000, 259-274.
27. Jacobs, P. I., Vandeventer, M.: Progressive Matrices: An experimental, developmental, nonfactorial analysis. *Perceptual and Motor Skills*, 27(3), 1968, 759-766.
28. Jordan, N. C., Kaplan, D., Ramineni, C., Locuniak, M. N.: Early math matters: kindergarten number competence and later mathematics outcomes. *Developmental Psychology*, 45, 2009, 850-867.
29. Kane, H., Brand, Ch.: The importance of Spearman's g. As a psychometric, social, and educational construct. *The Occidental Quarterly*, 3(1), 2003, 7-30.
30. Kitchen, J. A., Sonnert, G., Sadler, P. M.: The impact of college-and university-run high school summer programs on students' end of high school STEM career aspirations. *Science Education*, 102(3), 2018, 529–547.
31. Klauer, K. J., Phye, G. D.: Inductive Reasoning: A Training Approach. *Review of Educational Research*, 78(1), 2008, 85-123.
32. Koellner, K., Jacobs, J., Borko, H.: Mathematics Professional Development: Critical Features for Developing Leadership Skills and Building Teachers' Capacity. *Mathematics Teacher Education and Development*, 13(1), 2011, 115-136.
33. Kong, X., Dabney, K. P., Tai, R. H.: The association between science summer camps and career interest in science and engineering. *International Journal of Science Education*, 4(1), 2014, 54–65.
34. Kramer, J.: Is abstraction the key to computing? *Communications of the ACM*, 50(4), 2007, 36-42, <https://doi.org/10.1145/1232743.1232745>
35. Kuhn, D., Langer, J., Kohlberg, L., Haan, N., S.: The development of formal operations in logical and moral judgment. *Genetic Psychology Monographs*, 95 (1), 1977, 97-188.
36. Kucheman, D.: Algebra. In: Hart, K. M. (Ed.): *Children's Understanding of Mathematics, 11-16*, 1981, London: John Murray. ISBN 978-1-905-20002-3
37. Kusmaryono, I., Suyitno, H., Dwijanto, D., Dwidayati, N.: Analysis of Abstract Reasoning from Grade 8 Students in Mathematical Problem Solving with SOLO Taxonomy Guide. *Infinity Journal*, 7(2), 2018, 69-82.
38. Mackintosh, N. J.: *IQ and human intelligence*. Oxford: Oxford University Press, 1998, ISBN 978-0-199-58559-5

38. Markovits, H., Thompson, V. A., Brisson, J.: Metacognition and abstract reasoning. *Memory and Cognition*, 43(4), 2015, 681–693.
39. Mohr-Schroeder, M. J., Jackson, C., Miller, M., Walcott, B., Little, D. L., Speler, L., Schooler, W., Schroeder, D. C.: Developing middle school students' interests in STEM via summer learning experiences: See Blue STEM camp. *School Science and Mathematics*, 114(6), 2014, 291–301.
40. Morgan, P., L., Farkas, G., & Wu, Q.: Five-year growth trajectories of kindergarten children with learning difficulties in mathematics. *Journal of Learning Disabilities*, 42(4), 2009, 306–321. <https://doi.org/10.1177/0022219408331037>
41. Nagdi, M., Leammukda, F., Roehring, G.: Developing identities of STEM teachers at emerging STEM schools. *International Journal of STEM Education*, 5, 36, 2018, <https://doi.org/10.1186/s40594-018-0136-1>
42. Newton, P., Bristoll, H.: *Numerical reasoning, verbal reasoning, abstract reasoning, personality tests*. Psychometric Success, s.a. <https://www.psychometric-success.com/> (Accessed on August 2020)
43. O'Neill, L. D., Wallstedt, B., Eika, B., and Hartvigsen, J.: Factors associated with dropout in medical education: a literature review. *Medical Education*, 45(5), 2011, 440–454. <https://doi.org/10.1111/j.1365-2923.2010.03898.x>
44. Piaget, J.: Intellectual evolution from adolescence to adulthood. *Human Development*, 15, 1972, 1–12.
45. Primi, R., Ferrão, M. E., Almeida, L. S.: Fluid intelligence as a predictor of learning: a longitudinal multilevel approach applied to math. *Learning and Individual Differences*, 20(5), 2010, 446–451.
46. Raven, J.: The Raven's Progressive Matrices: Change and Stability over Culture and Time. *Cognitive Psychology*, 41(1), 2000, 1–48
47. Respondek, L., Seufert, T., Stupnisky, R., Nett, U. E.: Perceived academic control and academic emotions predict undergraduate university student success: examining effects on dropout intention and achievement. *Frontiers in Psychology*, 8, 243, 2017, <https://doi.org/10.3389/fpsyg.2017.00243>
48. Rich, K., Brendefur, J. L.: The Importance of Spatial Reasoning in Early Childhood Mathematics. *Early Childhood Education*, 2018, <https://doi.org/10.5772/intechopen.81564>
49. Richardson, M., Abraham, C. and Bond, R.: Psychological correlates of university students' academic performance: A systematic review and meta-analysis. *Psychological Bulletin*, 138(2), 2012, 353–387
50. Roberts, P.: Abstract thinking: a predictor of modelling ability. *MODELS*, 2009, http://www.cs.colostate.edu/mode1s09/edu/Papers/1_RobertsFinal.pdf (Accessed on August 2020)
51. Rumelhart, D. E.: Toward a microstructural account of human reasoning. In: Vosniadou, S., Ortony, A. (Eds): *Similarity and analogical reasoning*. Crambridge: Cambridge University Press, 1989, 298–312.
52. Sarra, A., Fontanella, L., Di Zio, S.: Identifying students at risk of academic failure within the educational data mining framework. *Social Indicators Research*, 2018, 1–20.
53. Schutz, P. A., Hong, J., Francis, D. C.: *Research on teacher identity: mapping challenges and innovations*. Heidelberg: Springer Nature, 2018, ISBN 978-3-319-93835-6
54. Schwank, I., Schwank, E.: Mathematical Concepts during Early Childhood Across Cultures. In Wright, J. D. (Ed.): *The International Encyclopedia of the Social and Behavioral Sciences*, 2015, 772–784, ISBN 978-0-08-097087-5
55. Sosu, E. W. M., Pheunpha, P.: Trajectory of University Dropout: Investigating the Cumulative Effect of Academic Vulnerability and Proximity to Family Support. *Frontiers in Education*, 4(6), 2019, <https://doi.org/10.3389/educ.2019.00006>
56. Spearman, C.: The Abilities Of Man: Their Nature And Measurement. *Nature*, 120, 1927, 181–183.
57. Steinberg, L.: Cognitive and Affective Development in Adolescence. *Trends in Cognitive Sciences*, 9(2), 2005, 69–74. <http://dx.doi.org/10.1016/j.tics.2004.12.005>
58. Sternberg, R. J.: Component processes in analogical reasoning. *Psychological Review*, 84(4), 1977, 353–378.
59. Stewart, S., Lim, D. H., Kim, J. H.: Factors influencing college persistence for first-time students. *Journal of Developmental Education*, 38(3), 2015, 12–20.
60. Stieff, M., Hegarty, M., Dixon, B.: Alternative strategies for spatial reasoning with diagrams. In: Goel, A., Jamnik, M., Narayanan, N. H. (Eds.): *Diagrammatic Representation and Inference*. Heidelberg: Springer Nature, 2010, 115–127.
61. Susac, A., Bubic, A., Urbanc, A., Planinic, M.: Development of abstract mathematical reasoning: the case of algebra. *Frontiers in Human Neuroscience*, 8, 2014, 1–10.
62. Szökö, I., Nagy, M. 2015. The Quality of Education for the Development of Information and Communication Competencies of Teachers. In: R&E Source: SCHOLA 2015. *New Approaches to engineering pedagogy*. 11th International Scientific Conference., 2015, online, p. 1-4.
63. Sztajn, P., Campbell, M., P., Yoon, K., S.: Conceptualizing professional development in mathematics: Elements of a model. *PNA*, 5(3), 2011, 83–92.
64. UNESCO (2015): Incheon Declaration: Education 2030: Towards Inclusive and Equitable Quality Education and Lifelong Learning for all. World Education Forum 2015. (Incheon: Republic of Korea). Available online at: http://uis.unesco.org/sites/default/files/documents/education-2030-incheon-framework-for-action-implementation-of-sdg4-2016-en_2.pdf
65. Vodegel Matzen, L. B. L., Van der Molen, M. W., Dudink, A. C. M.: Error analysis of Raven test performance. *Personality and Individual Differences*, 16(3), 1994, 433–445.
66. Wilhelm, O.: Measuring Reasoning Ability. In: Wilhelm, O., Engle, R. W. (Eds.): *Handbook of understanding and measuring intelligence*. Thousand Oaks: Sage Publications, 2005, 373–392.
67. Yoon, K. S., Duncan, T., Lee, S. W. Y., Scarloss, B., Shapley, K.: Reviewing the evidence on how teacher professional development affects student achievement. Issues & Answers Report, REL 2007–No. 033. Washington: Department of Education, Regional Educational Laboratory Southwest, 2007. <http://ies.ed.gov/ncee/edlabs> (Accessed on July 2020)
68. Zahatňanská, M. Nagy, M. 2020. An attempt to identify problems in the behaviour of teenagers and adolescents in Slovakia in relation to their creativity and success in the school. AD ALTA vol.10, no.1, pp. 326–329. ISSN 1804-7890

Primary Paper Section: A**Secondary Paper Section: AM**

FORUM THEATER AND MOVEMENT

^aZUZANA HUBINSKÁ

Constantine The Philosopher University in Nitra, Faculty of Education, Department of Music, Dražovská 4, 949 01 Nitra, Slovakia
 email: ^az.hubinska@hotmail.sk

Abstract: In this article, we deal with an innovative approach to the methods of Forum Theater. We offer readers a proposal for a model of a Forum Theater performance based on the movement processing of individual situations, in which we emphasize the mediation of emotions displaying through natural movement expressions or slightly stylized dance elements. The main theme in the design of the performance, which is intended for the second stage of primary education, is the increasingly topical topic of cyberbullying. Despite the fact that we associate the Forum Theater with forms of creative drama, we can also utilize it in everyday teaching, for example in subjects aimed at creating social consciousness - civics. The article contains a brief description of the Forum Theater, an explanation of the concept of cyberbullying and a description of individual dance techniques, the means of expression of which we can use in the presentation. Last but not least, a specific proposal for a model of the Forum Theater performance - Cyberbullying - is a part of it.

Keywords: Forum Theater, movement, dance elements, cyberbullying, performance

1 Introduction

The Forum Theater is one of the forms of creative drama, based on the concept of the Theater of the Oppressed, founded by August Boal.¹ It was created in the 1960s in response to the worsening political situation in Brazil. August Boal is a prominent director, writer, theater theorist and, last but not least, a politician. After studying in New York, he returned to Brazil, where he had the opportunity to realize his ideas and seek new theatrical forms through experimentation. The works he created in this environment focused on authorial work, adapted to the Brazilian audience.² The aim was to gain a better understanding of the issue the Brazilian people were facing at the time. The political situation mentioned in the introduction exacerbated, several upheavals took place and that also reflected in the cultural environment. The creations of domestic authors were forbidden and the creators themselves were persecuted. Nevertheless, A. Boal could not be discouraged, he continued to present his works and gradually a new concept of theater began to be profiled, based on the dismantling of passive participation of spectators. A. Boal was even arrested, but under public pressure, he was allowed to exile in Argentina, where he continued to form the new theatrical concept.³ However, the situation in South America was not satisfactory and therefore he had to emigrate to Europe. There he encountered a different type of problems and pressure (invisible at first glance), to which he reacted in his work.⁴ In 1986 he returned to his native country, founded the main center of the Theater of the Oppressed and also other theater companies in Rio de Janeiro. Through several steps, he gradually gained recognition from both theater and the pedagogical community. The purpose of his life became the realization of various performances using the principles of the Theater of the Oppressed, as well as traveling, organizing workshops throughout the country and visiting various schools and universities.⁵

The Theater of the Oppressed is a specific type of theatrical concept that can also be used as a form of learning. It includes various techniques, exercises and games that, as a whole, encourage a certain change in the perception of society.⁶ The emphasis is on revealing various negative influences in the life of an ordinary person (oppression, non-freedom, etc.) and to help solve such problems through these authentic theatrical means. The interesting fact about this concept is that the audience is not

in the role of a passive observer but enters the story in the role of actors.⁷ For each country where this form is utilized, specific theatrical means, forms and techniques of the oppressed theater are selected, depending on the conditions and situation of the environment - most often Newspaper Theater (media control, censorship, the aim is to teach spectators to read correctly and reveal objective facts), Forum Theater and Sculpture Theater (absent of spoken word).⁸ This author deals with the topic of the Theater of the Oppressed in more detail: SONDROROVÁ, D. 2019. The Theater of the Oppressed as one of the means of resocialization of delinquent youth (In: Sapere Aude 2019. p. 70-76).

2 Forum Theater

*"It represents one of the best known and most used techniques of the Theater of the Oppressed"*⁹

In its inception it was used for political purposes, as through this form, theater actors appealed to the poor to express a different stance on social oppression. It is interpreted in the form of a compact performance, which presents the audience with attitudes to various problems, gives them the opportunity to realize their position and possibly change it.¹⁰ Its origins date back to the 1960s, when A. Boal and the Teatro de Arena undertook joint tours of the poor areas of northeastern Brazil. Through this form, he tried to arouse the oppressed peasants to revolt. However, he realized that he should not be the one to offer them a solution, but they should come up with it themselves. Another impulse was the experience from the dramaturgical seminar, when during the presentation of one play a quarrel arose between the participants, in which the spectator entered to express his motives. This situation fascinated him because he experienced how fiction grew into reality and he too began to think about breaking these boundaries.¹¹

The third stimulus in the gradual creation of a comprehensive form of the Forum Theater was the principle of the so-called "Joker". This character can play any role, stop and enter the play, comment on the performance in a social, political or historical context. Through this role, A. Boal influenced the conventional stylizations of contemporary theater.¹² However, the Forum Theater was not established until Boal's return to South America, which we described in the paragraph above. He started utilizing the so-called simultaneous dramaturgy, in which the audience could suggest different solutions to the situation within the interpretation of the performance. Based on one improvisation from theater-goer, who was not satisfied with the end of the story, he adjusted the rules and the audience became active participants in the performance - co-actors.¹³ The principle of the play allows viewers to watch the story and later invites them to incorporate. In the first moment, the audience is presented with a short story with a title theme that deals with social or political issues, where the main character - the protagonist/oppressed, tries to resist the antagonist/oppressor. The story ends with the loss of the main character and the Joker subsequently invites the audience to change the actions of the actors on the stage. The members of the audience can safely verify their opinions, attitudes, strategies and see if they can reverse the initial reactions for a positive result. They can find

¹ VALENTA, M. 2007. *Dramaterapie*. Praha: Grada, 2007. s. 49.

² SANTOS, B. et al. 2016. *Divadlem ke změně*. Praha: Antikomplex, 2016. s. 19.

³ VALENTA, M. a kol. 2006. *Rukověť dramaterapie a teatroterapie*. Olomouc: Univerzita Palackého, 2006. s. 26.

⁴ TKAČOVÁ, M. 2016. *Divadlo utlačovaných a specifika práce Elišky Lindovské*. Brno: JAMU, 2016. s. 17.

⁵ SOCHA, J. 2007. *Alternativa prevence sociálně patologických jevů na gymnáziích - Divadlo fórum*. [Bachelor work]. Brno: Masarykova univerzita, 2007. s. 9, 10.

⁶ MACKOVÁ, R. 2002. *Divadlo Fórum*. Brno: JAMU, 2002. s. 31.

⁷ HANZLÍKOVÁ, I. 2010. *Realizace Divadla fórum s klienty chráněného bydlení Domov Klíč - CSS Olomouc*. [Diploma work]. Olomouc: Univerzita Palackého, 2010. s. 15 - 16.

⁸ SANTOS, B. et al. 2016. *Divadlem ke změně*. Praha: Antikomplex, 2016. s. 21.

⁹ SONDROROVÁ, D. 2019. *Hudobno-dramatické aktivity a ich využitie v technike Divadlo fórum*. In *Teorie a praxe hudobní výchovy VI.*, 2019, č. 6, s. 189.

¹⁰ MATYÁŠOVÁ, L. 2005. *Divadlo fórum na školách žije*. In *Tvořivá dramatika*. 2005, č. 3, s. 15.

¹¹ BOAL, A. 2001. *Hamlet and the baker's son: My life in theatre and politics*. London: Routledge, 2001. s. 200-205.

¹² REMSOVÁ, L. 2011. *Divadlo utlačovaných a jeho edukační možnosti v sociální pedagogice*. [Dissertation work]. Brno: Masarykova univerzita, 2011. s. 45.

¹³ HANZLÍKOVÁ, I. 2010. *Realizace Divadla fórum s klienty chráněného bydlení Domov Klíč - CSS Olomouc*. [Diploma work]. Olomouc: Univerzita Palackého, 2010. s. 21.

themselves in these situations in real life and through this form they are given a possibility to prepare for a potential future.¹⁴ After twenty years of development, it is currently used in various forms and variants around the world. It appears in schools, universities, cultural centers, hospitals, prisons and other workplaces. However, its use must correspond to the situation and problems of the given society, which not only affect the whole society but also individuals.

As we mentioned above, the most important role in every performance of the Forum Theater is played by the Joker, who mediates the contact between the audience and the actors and at the same time leads the whole play.¹⁵ It also evokes the atmosphere. At the beginning, he should organize "warm-up" activities, acquaint the audience with the rules of the Forum Theater and introduce them to the characters of the story that will be performed. The Joker has the last word in any decision. It motivates viewers to stop situations, encourages their initiative, the courage to accept the role and responds to their wishes. During the performance, it is important for the Joker to focus on the audience's reactions and not on how the actors play. At the same time, he tries to maintain the thematic line of the entire event and returns to solving the problem. He leads the final discussion at the end of the performance. The Joker should be able to react quickly to unexpected situations, improvise and create procedures for the present group according to its specifics.

Actors have a more challenging role in this type of performance, as they need to follow the instructions of the Joker and take the initiative from the audience. They can only play one role, but there are also cases where they act in the position of several characters (each character should be a characteristic feature, such as clothing, props etc.). Actors must be able to quickly adapt to new solutions mediated by the audience or by the Joker,¹⁶ and at the same time they should be able to maintain the individual features of the characters even after multiple changes and replay of specific situations. An integral part of their expression should be the ability to improvise in connection with the reactions of the audience.¹⁷

Audience at the Forum Theater does not have a passive role, but is actively involved in the performance. In the first moment, they watch the first playback of the performance with a specific theme, then the Joker invites them to a discussion to express their opinion on the performed story. They have the opportunity to intervene, go back to a situation, design their own solution, to which the actors and the Joker respond, either guide the actor to a certain course of action or take on a placeholder/characteristic feature. They may repeat this principle several times until they reach a satisfactory outcome. However, it should not happen that the "substitutes", thus the audience, exceed the number of actors in the story (in this case, the situation is mediated by the Joker).

2.1 Principles and Rules of the Forum Theater

The Forum Theater has certain rules defined in its productions, which should always be adhered to. But if viewers possibly wish to change some of them, it depends on the specific situation and whether the audience is bold enough to enter and change the course of the story. Each performance is mediated as an "antimodel", which initially contains a tragic conclusion or a negative solution to the situation. During the course, the viewers are provided with key moments that lead to a gradual deterioration of the situation for the main character (it must be clear from each part who the oppressed is and who is the oppressor). The performance usually lasts no more than 15 minutes and the theme may be based on the social or political

sphere. After the first show, the Joker turns attention to the audience and ask them for help, as he has doubts about whether the protagonist (oppressed) behaved correctly. After the second demonstration, viewers have the opportunity to enter the story, stop it, propose another solution, change the situation in a certain part to change the course of events, give instructions that could lead to a better conclusion.¹⁸ However, the following conditions must be met throughout the change process:

- a) there must be no change in the social background, occupation, age and other attributes of the character,
- b) the character of the protagonist must not be altered,
- c) no supernatural forces are used to resolve the situation,
- d) it is forbidden to depict violence or use vulgarities on stage,
- e) different ways may be used to reveal characters' motivation to act.¹⁹

If the actor is replaced by a spectator, they observe the whole situation and are ready to return to the play, according to the Joker's instructions. The spectator who takes the place of the actor should promote their action and not just construct it in the form of a discussion. In this way they can safely test his designs and put them into practice. This experience should then extend into the real life of the participants through their actions, thus being able to cross the line between theater and real life. Other actors must accept the situation and environment created by the audience.²⁰

3 Use of Dance Elements in the Forum Theater

We decided to incorporate the Forum Theater into II. stage primary education, with pupils aged 12-15. This form can be implemented in primary art schools in the literary-dramatic or dance field and in primary schools in the subject of civics or ethics. Within the framework of the presented proposal, we place emphasis on the application of methods of creative drama, specifically on pantomime-movement methods, which are based on pantomime and movement (dance) etudes. They help to develop the coordination, control of movements and also largely contribute in the field of nonverbal communication.²¹ For this model of performance, we decided to use movement, or slightly stylized dance depiction of situations, respectively. We place emphasis on non-verbal communication, i.e. mediating the emotions of individual characters through movement. In the scenes described below, apart from the final fifth, any verbal expression is absent. Since the performers have, in addition to the use of natural movements (walking, running, working with props, etc.) and gestures, the possibility to slightly stylize the movement, we briefly describe what dance techniques can be applied in the interpretation.

3.1 Jazz Dance

Jazz dance developed together with jazz music in the environment of dance and entertainment companies. It developed in two directions: ballroom and stage dance. As a result of the penetration of jazz dance onto dance stages and the scene, the dancers were exposed to the issue of increasing demands on their natural sense of rhythm, spontaneous dance and captivating dynamics. Increased demands gradually forced a special method of jazz dance training. Unlike classical dance, for example, the starting posture and position do not try to create an impression of ease, but emphasize strength and a strong connection to the ground.²² With its African origins, the rhythm in jazz music and dance has multiplied into a polymetric and polyrhythmic form, and the multicultural European origins have

¹⁴ HORÁKOVÁ, A. 2016. *Divadlo fórum jako nástroj primární prevence rizikového chování*. Olomouc: Univerzita Palackého, 2016. s. 16.

¹⁵ UCHYTILOVÁ, B. 2003. *Divadlo fórum Augusta Boala*. In: Tvořivá dramatika, č. 2, 2003, s. 1.

¹⁶ OPLUŠTILOVÁ, A. 2007. *Divadlo fórum jako nástroj pro změnu postojů*. [Bachelor work]. Brno: Masarykova univerzita, 2007. s. 18, 19.

¹⁷ HANZLÍKOVÁ, I. 2010. *Realizace Divadla fórum s klienty chráněného bydlení Domov Klíč - CSS Olomouc*. [Diploma work]. Olomouc: Univerzita Palackého, 2010. s. 23.

¹⁸ MERTO VÁ, T. 2006. *Romové a Divadlo Fórum*. [Bachelor work]. Brno: Masarykova univerzita, 2006. s.26, 27.

¹⁹ OPLUŠTILOVÁ, A. 2007. *Divadlo fórum jako nástroj pro změnu postojů*. [Bachelor work]. Brno: Masarykova univerzita, 2007. s. 17.

²⁰ JINDRA, M. 2011. *Využití vybraných forem Divadla Utačovaných A. Boala při práci s adolescenty*. [Bachelor work]. Brno: JAMU, 2011. s. 21.

²¹ VALENTA, J. 2008. *Metody a techniky dramatické výchovy*. Praha: Grada, 2008. s. 352.

²² ŠIMEK, R. 1981. *Džezgymnastika*. Praha: Olympie, 1981. s. 84.

also layered its dynamics. A characteristic feature of jazz dance is that the individual parts of the human body move not only independently, but also in other directions, rhythms and dynamics. The movement is based on different movement centers (polycentrics), it is often performed simultaneously on different rhythms, while the dancer's ability to isolate the individual parts of the body in motion is essential.²³ The position of the dancer's body in a jazz dance is upright, pulled obliquely upwards with the weight on the front of the foot. The knees are bent, the center of gravity is reduced, which is disrupted at the moments of highlighting the vertical (jump, hop and others). The individuality of the style within the group style is emphasized.²⁴ The movement material consists of, for example: bounces, prance, pliés, brushes, isolations, leg extensions, leg swings, kick ball change, basic jazz walk, samba walk, jumps, turns, chassé and others.

3.2 Modern Dance

It is characterized by various styles of concert dance, the roots of which are not in classical dance. Its origins date back to the turn of the 19th and 20th centuries in America and Europe. It arose as an opposition to the usual forms of academic dance and ballet.²⁵ Modern dance developed depending on the peculiarity of the movement style of each artist, which depended on their physical conditions, as well as on the theoretical and content starting points that were the background of their work. Representatives of modern dance created new movement systems, which they subsequently codified. These movement systems served as training techniques for the dancers, preparing them to be able to interpret the choreographer's individual dance style.²⁶ The creators tried to return the dance to expressiveness, the ability to communicate emotional experiences in a current way, researched the problems of the individual within society, but also within his individuality, they also drew themes from literature, history, but also other cultures (Asia, Africa and others). Their foundation was the study of the possibilities of human body movement.²⁷ The most famous dance techniques that are taught to this day include:

Martha Graham's technique – the basic principle is the development of the principle of contraction and release, derived from the concept of breathing. Graham emphasized these phases for the needs of the theater, accentuating them mainly from a dynamic point of view. Exhalation during contraction is a significant dynamic action, initiated in the pelvic area, it forms and controls the entire torso of the dancer, the muscles of the whole torso are involved in the action, and subsequently also muscles of all peripheries (it is realized as an elevation). Release does not mean complete release or devitalization, it is the redirection of energy from the center to the outside, which fills the interior of the body with a new force (it is realized as a push). Both phases of respiration are equally dynamically and energetically activating. Body weight is concentrated and controlled from the active center in the pelvis. Other specific movements are the movement in a spiral (rotation of the body around the vertical axis), characteristic for work in space is the so-called shift of the weight – a significant shift of the body in the horizontal direction. We also utilize this movement pattern with regard to the action of the center – contraction/release – in the third part of the lesson, namely traveling. Shift of the weight provides the typical movement quality for this technique.²⁸

José Limón's technique – the basic concept is the metaphor "The body as an orchestra". The human body is able to break down the rhythm, determine the movement theme and develop it. Each

part of the body represents one musical instrument that can be expressed independently, but the symphony of all creates a symphony. He respects the rules of gravity, works with it, uses it and explores the spectrum of possibilities of motion freed from gravity all the way to motion that is completely subject to it. The basic principles of the technique are: alignment – basic position of the body understood as dynamic position, succession – i.e. gradual path of movement through individual parts of the body, opposition – the effort to create a feeling of length in the body, potential and kinetic energy, fall – i.e. complete relaxation of body muscles, return is realized in two ways: recovery/rebound, suspension – peak phase of movement (transient state), isolations – isolated movement of individual parts of the body,²⁹ weight – which we contextually use with gravity, it is a determining element of quality.³⁰

3.3 Postmodern Dance

The change in the perception of modern dance occurs in the 40s/50s of the 20th century. It was energetically started by a generation of young dancers and choreographers who radically rejected the creative methods and techniques of modern dance. The most important representatives of this period include choreographer Merce Cunningham and composer John Cage.³¹ M. Cunningham's effort was to free dance from the psychologization and social commitment of its predecessors. He tried to remove the symbolism or descriptiveness of dance.³² He pioneered the idea that dance is an independent art that does not need the support of music or visual effects.³³ His dance technique is very physically demanding. It is based on the equal use of the possibilities of movement of the torso and limbs. The work of the torso is characterized by the variability of the basic movements of the back, which are: curves – bending of the back in the sagittal (anteroposterior) plane. The three types we present differ in the area that the arch begins – upper back, middle back, lower back; tilt – bending of the back in a vertical plane; twist – rotation of the spine around the axis. The characteristic features of movement are very fast and unexpected changes: changes in direction, pace, space, movement. The movement vocabulary of his technique includes a whole range from pedestrian movements on the one hand to technically demanding movements (virtuoso movements) on the other. It does not describe the feelings that the movement should evoke. He finds the movement possibilities of the legs in different directions and at different speeds or types of phrases, the body changes simultaneously either with contrast to the legs or against. He uses these principles on the ground, in the air (in jumps), as well as together with changes in the direction of the torso.³⁴

3.4 Contemporary Dance

Representatives of the late 1960s, who wanted to push innovation in dance even further, sought naturalism in movement and were inspired by everyday movement. They completely rejected any technical virtuosity. They experimented with the form of dance and looked for new content and

²³ KUBICOVÁ, I. 1986. *Úvod do histórie moderného a džezového tanca*. Bratislava: Osvetový ústav, 1986. s. 22-24.

²⁴ GIORDANO, G. 1992. *Jazz Dance Class*. Londýn: Dance Books Ltd., 1992. s. 19-26.

²⁵ SORELL, W. 1967. *The Dance through the ages*. Veľká Británia: Thames and Hudson Ltd., 1967. s. 183.

²⁶ KUBICOVÁ, I. 1986. *Úvod do histórie moderného a džezového tanca*. Bratislava: Osvetový ústav, 1986. s. 4-8.

²⁷ KOVÁŘOVÁ, M. 2013. *Technika José Limóna*. Bratislava: Vysoká škola múzických umení, 2013. s. 99, 100.

²⁸ LETENAJOVÁ, O. 2010. *Tanečná technika Marthy Grahamovej: jej formovanie a didaktika*. Bratislava: Vysoká škola múzických umení, 2010. s. 17-27.

²⁹ KLOUBKOVÁ, I. 2008. *Výuka moderného tanca s využitím princípů techniky José Limóna*. Brno: Janáčková akademie múzických umění, 2008. s. 11-13.

³⁰ KOVÁŘOVÁ, M. 2013. *Technika José Limóna*. Bratislava: Vysoká škola múzických umení, 2013. s. 192 s.

³¹ He was an American composer of aleatory experimental music, writer and creator of audiovisual art. He went through various artistic directions. At first he was convinced that he wanted to be a writer, later he also devoted himself to fine arts and music. On his travels in France, he dedicated his life mainly to music and composition. He also worked as an accompanist in dance classes, where his close relationship with modern dance was formed, in close connection to the personality of Merce Cunninghamhim. He is the inventor of the prepared piano and the pentatonic scale. Well-known works include, for example, *Imaginary Landscape No. 4 for 12 Radio Receivers*, *Variations I., 4'33* and others. In 1952, he organized the "first happening". The term "happenings" refers to theatrical events that leave the traditional stage-spectator relationship and are performed without a specified duration. Instead, they are open to chance. They are also named this way because they take place in the present and try to halt the passage of time. In October 1961, Wesleyan University Press published *Silence*, a collection of Cage's lectures and writings that covered a wide range of topics.

³² CRAINE, D. 2002. *The Oxford Dictionary of Dance*. Oxford: Oxford University Press, 2002. s. 120, 121.

³³ ZITNANOVÁ, H. 1992. *Dejiny tanca pre tanečný odbor základných umeleckých škôl*. Bratislava: SPN, 1992. s. 70.

³⁴ HUSCHKA, S. 2000. *Merce Cunningham und der Moderne Tanz*. Würzburg: Königshausen & Neumann, 2000. s. 279-285.

expression for it, improvisation and conceptual creation came to the forefront. The movement of the human body has been studied in more detail, in unusual spatial positions, through the interconnection of movement patterns of animals and humans, or natural phenomena. They tried to find possibilities to apply improvisation as a principle of creating movement material and a form of performance.³⁵ Contemporary dance is an open system of training methods using concepts of movement developed from a new approach to the body and understanding of dance. We speak of an open system because it was not created by one person – a dancer or a choreographer (as it was during the development of the style of modern dance in the first half of the 20th century), but many teachers around the world are involved in developing the system while constantly integrating theoretical knowledge and practical experience. The form of movement is therefore very open – the movement vocabulary is not codified and the movement form is not systematized in steady exercises, as it was known in modern dance. The basic principles on which we are based are the effectiveness of motor coordination (maximum performance with minimal energy), dynamic understanding of the body and movement (perception and respect of constantly changing relationships of body parts during movement), dual body movement in motion and use of movement throughout spatial spectrum.³⁶

4 Model of Forum Theater Performance – Cyberbullying

In this chapter, we describe a specific performance related to the problem of cyberbullying. We will present students with a short story in which the main character is a timid girl, Laura, coming from a less financially secure family. Parents do not have the means to buy their daughter the latest mobile phone, or designer clothes and shoes. Ivana, a girl from a rich family who is the main shot-caller in the class society, is placed in the role of an antagonist. Her eyes and ears, that is, her friends Karin and Slávka, will not miss any detail. Karin is Ivana's faithful "sidekick", she agrees with all the ideas and opinions that the leader presents. For Slávka, there are moments when she cannot decide whether what they are doing is right or not. Another character is the cutest boy in the class, Tomáš, whom Ivana fancies very much and expects that the affection is mutual. The characters in the story are completed by a class teacher and a Joker.

4.1 Movement Characteristics of Characters

Laura (the protagonist) – shy and timid, violation of the basic body posture, sunk-in chest, drooping shoulders, use of gentle, slower, legato movements,
 Ivana (the antagonist) – dominant and fearless, upright posture, open chest, chin slightly raised, use of sharp, fast, staccato movements, work in space,
 Tomáš (classmate) – phlegmatic, movement mostly on the spot, use of gesture and minimalism in movement, focus on detail,
 Karin (classmate) – blindly following Ivana's opinions and attitudes, natural body posture, use of sharp, fast, staccato movements mostly on the spot,
 Slávka (classmate) – indecisive, natural body posture, alternation of legato and staccato movements,
 Class teacher – in addition to movement in the final scene, she is the only one who can use verbal expression,
 Joker – mediator of contact between actors and spectators, organizes individual activities, acquaints spectators with the characters of the story, invites them to initiative and involvement in the story, responds to their wishes.

The performance would consist of five scenes (parts), which are based on the construction of a classical ancient drama:

Scene 1 (exposure) – the situation takes place in the classroom, after the class teacher leaves, almost all the students pull out

their mobile phones and get on the internet. Three friends – Ivana, Karin and Slávka look at the news feed on Instagram, mockingly comment on the clothes of their classmates based on pictures and photos from the most followed accounts. Laura is sitting alone at her desk, upset because she does not have the latest phone, mobile internet or an Instagram account.

Scene 2 (collision) – Laura comes to class after the holidays, she is excited because she got a new phone. She wants to brag to the class leaders, but Ivana brushes her off, because she still doesn't have an account on Instagram, thus she doesn't have a clue about the latest fashion trends. Surprised and sad, Laura sits down at her desk. Tomáš notices this situation and decides to help Laura create a new profile.

Scene 3 (crisis) – after a few days, Ivana notices that Laura and Tomáš spend more time together. She starts to get jealous because she fancies Tomáš and wants his attention only to herself. As she confides in his two friends, Karin confirms to her that Tomáš and Laura have something going on, on the contrary, Slávka thinks that there is nothing between them. After the lesson, Tomáš and Laura stay alone in the classroom and begin to get closer.

Scene 4 (peripetia) – Ivana finds out that Tomáš was on a date with Laura, so she and her friends start to come up with a plan to discredit Laura and strike back at her. Since Laura does not dress in a modern and branded way, they decide to take a picture of her clothes every day and publish it with a mocking comment on Instagram. Ivana's revenge culminates in the moment when inconspicuously spreads glue on Laura's chair during the break. The class teacher comes to class and calls Laura to the blackboard. As Laura stands up, her pants tear. The class leaders pull out their mobile phones and start taking pictures of her. The whole class laughs and makes fun of her underwear. The teacher tries, in vain, to calm them down. Tomáš also laughs at Laura and she, deeply embarrassed and crying, leaves the classroom.

Scene 5 (disaster) – everyone is in the class, but Laura. The class teacher arrives and informs the students that Laura is no longer their classmate and has transferred to another school.

5 Conclusion

The choice of theme is an essential step in staging the Forum Theater. It usually corresponds and is based on the problems that are current for the selected age group of participants. As the topics of the Forum Theater focus on sensitive, in some cases even controversial situations: drug use, racism, conflicts in relationships, the exclusion of the individual from the collective, we chose a similarly current topic of CYBERBULLYING for our model. Today, young people mostly function within the online space, and this phenomenon poses certain dangers, such as online bullying. Using modern means of communication, adolescents can insult, threaten or reveal intimate information to the public. Cyberbullying is an invasion of privacy, which lasts much longer than ordinary bullying by comparison - what is online cannot be removed so easily. The reason for selecting this topic was also the fact that cyberbullying can be the result of reckless action, when the aggressor does not think through the possible consequences. However, even this act can have fatal consequences for the victim.³⁷ That is why we want to bring this topic to the attention of young people, to show them what their actions can cause and how to prevent inadequate behavior.

Another fact is that we did not use music in the individual scenes, as we did not want the performers and the audience to be influenced by an external factor. It often happens that the music pulls you to move, a situation we wanted to avoid in the proposed model. Our intention was for the pantomime-movement manifestations to be based on the inner emotions of the performers.

³⁵ POLÁKOVÁ, M. 2010. *Sloboda objavovať tanec*. Bratislava: Divadelný ústav, 2010. s. 26-29.

³⁶ POLÁKOVÁ, M. 2010. *Sloboda objavovať tanec*. Bratislava: Divadelný ústav, 2010. s. 86-87.

³⁷ *Čo je kyberšikana*. 2020. [online]. cyberhelp.eu. [cit. 2020-12-18].

Literature:

1. BOAL, A. 2001. *Hamlet and the baker's son: My life in theatre and politics*. London: Routledge, 2001. 84 s. ISBN 978-80-8083-440-1
2. CRAINE, D. 2002. *The Oxford Dictionary of Dance*. Oxford: Oxford University Press, 2002. 527 s. ISBN 0-19860-400-9
3. ČERMÁKOVÁ, I. 1999. *Augusto Boal a dramatická výchova*. In *Tvořivá dramatika*, 1999, č. 1, s. 5-20.
4. *Čo je kyberšikana*. 2020. [online]. cyberhelp.eu. [cit. 2020-12-18]. Available on the internet: http://cyberhelp.eu/sk/introduction/what_is
5. GIORDANO, G. 1992. *Jazz Dance Class*. Londýn: Dance Books Ltd., 1992. 209 s.
6. HANZLÍKOVÁ, I. 2010. *Realizace Divadla fórum s klienty chráněného bydlení Domov Klíč-CSS Olomouc*. [Diploma work]. Olomouc: Univerzita Palackého, 2010. 87 s.
7. HORÁKOVÁ, A. 2016. *Divadlo fórum jako nástroj primární prevence rizikového chování*. Olomouc: Univerzita Palackého, 2016. 72 s.
8. HUSCHKA, S. 2000. *Merce Cunningham und der Moderne Tanz*. Würzburg: Königshausen & Neumann, 2000. 496 s. ISBN 3-8260-1668-8
9. JINDRA, M. 2011. *Využití vybraných forem Divadla Utačovaných A. Boala při práci s adolescenty*. [Bachelor work]. Brno: JAMU, 2011. 60 s.
10. KLOUBKOVÁ, I. 2008. *Výuka moderního tance s využitím principů techniky José Limóna*. Brno: Janáčkova akademie múzických umění, 2008. 76 s. ISBN 978-80-86928-45-6
11. KOVÁŘOVÁ, M. 2013. *Technika José Limóna*. Bratislava: Vysoká škola múzických umění, 2013. 192 s. ISBN 978-80-89439-42-3
12. KUBICOVÁ, I. 1986. *Úvod do histórie moderného a džezového tanca*. Bratislava: Osvetový ústav, 1986. 47 s.
13. LETENAJOVÁ, O. 2010. *Tanečná technika Marthy Grahamovej: jej formovanie a didaktika*. Bratislava: Vysoká škola múzických umění, 2010. 87 s. ISBN 978-80-89439-06-5
14. MACKOVÁ, R. 2002. *Divadlo Fórum*. Brno: JAMU, 2002. 31 s.
15. MATYAŠOVÁ, L. 2005. *Divadlo fórum na školách žije*. In *Tvořivá dramatika*, 2005, č. 3, s. 15.
16. MERTOVIČ, T. 2006. *Romové a Divadlo Fórum*. [Bachelor work]. Brno: Masarykova univerzita, 2006. 65 s.
17. OPLUŠTILOVÁ, A. 2007. *Divadlo fórum jako nástroj pro změnu postojů*. [Bachelor work]. Brno: Masarykova univerzita, 2007. 85 s.
18. POLÁKOVÁ, M. 2010. *Sloboda objavovať tanec*. Bratislava: Divadelný ústav, 2010. 164 s. ISBN 978-80-89369-23-2
19. REMSOVÁ, L. 2011. *Divadlo utlačovaných a jeho edukační možnosti v sociální pedagogice*. [Dissertation work]. Brno: Masarykova univerzita, 2011. 376 s.
20. SANTOS, B. et. al. 2016. *Divadlem ke změně*. Praha: Antikomplex, 2016. 92 s.
21. SOCHA, J. 2007. *Alternativa prevence sociálně patologických jevů na gymnáziích – Divadlo fórum*. [Bachelor work]. Brno: Masarykova univerzita, 2007. 68 s.
22. SONDOROVÁ, D. 2019. *Hudobno-dramatické aktivity a ich využitie v technike Divadlo fórum*. In *Teorie a praxe hudobní výchovy VI*. Praha: Nakladatelství Karolium, 2020, č. 6, s. 189-194. 368 s. ISBN: 978-80-7603-163-0
23. SONDOROVÁ, D. 2019. *Divadlo utlačovaných ako jeden z prostriedkov resocializácie delikventnej mládeže*. In: *Sapere Aude* 2019. Hradec Králové: Magnanimitas, 2019. s. 70-76. ISBN 978-80-87952-29-0
24. SORELL, W. 1967. *The Dance through the ages*. Velká Británie: Thames and Hudson Ltd., 1967. 304 s.
25. ŠIMEK, R. 1981. *Džezgymnastika*. Praha: Olympie, 1981. 286 s.
26. TKAČOVÁ, M. 2016. *Divadlo utlačovaných a specifika práce Elišky Lindovské*. Brno: JAMU, 2016. 91 s.
27. UCHYTILOVÁ, B. 2003. *Divadlo fórum Augusta Boala*. In: *Tvořivá dramatika*, č. 2, 2003.
28. VALENTA, M. a kol. 2006. *Rukověť dramaterapie a teatroterapie*. Olomouc: Univerzita Palackého, 2006. 139 s.
29. VALENTA, M. 2007. *Dramaterapie*. Praha: Grada, 2007. 264 s. ISBN 80-24718-19-4
30. VALENTA, J. 2008. *Metody a techniky dramatické výchovy*. Praha: Grada, 2008. s. 352. ISBN 978-80-2471-865-1
31. ŽITŇANOVÁ, H. 1992. *Dejiny tanca pre tanečný odbor základných umeleckých škôl*. Bratislava: SPN, 1992. 96 s. ISBN: 80-08014-91-1

Primary Paper Section: A**Secondary Paper Section: AL, AM**

ENVIRONMENTAL EDUCATION IN THE FOREST ENVIRONMENT AND ITS KEY FACTORS IN PRE-ELEMENTARY EDUCATION

^aDANA CHLPOSOVA, ^bJOZEF VYBOSTOK, ^cDANA KOLLAROVA, ^dDARINA VYBOHOVA

^aNational Forest Centre - Institute for Forest Consulting and Education, Sokolská 2, 960 52 Zvolen, Slovakia

^bTechnical University in Zvolen, Faculty of Forestry, T.G.Masaryka 24, 960 53 Zvolen

^cConstantine the Philosopher University in Nitra, Department of

^dPedagogy, Drážovská cesta 4, 949 74 Nitra, Slovakia; email: The Methodology and Pedagogy Centre, Ševčenkova 11, 850 05 Bratislava; e-mail:

e-mail: ^adana.chlposova@nlcsk.org, ^bxvybostokj@turzvo.sk, ^cdkollarova@ukf.sk, ^ddarina.vybohova@mpc-edu.sk

This study was supported by the Slovak Research and Development Agency under the contract No. APVV-18-0484 as a part of the research Forest Pedagogy and Education to Sustainable Development in pre-primary and primary education.

Abstract: The forest environment is a varied community consisting of plants, fungus, animals, as well as air, water, and soil resources. It is important in pre-elementary education for children to learn by direct observation and investigation. This approach to education is possible by integrating the methods of forest pedagogy. The research shows the results obtained through Delphi method about a perception of key factors, that condition the learning about the forest as well as creating a relationship of a child with its closest environment on a forest example.

Keywords: forest pedagogy, forest example, relationship of child and environment, Delphi method

Introduction

The importance of environmental education and training as part of a lifelong learning is indubitable. Ultimately, this is also proven by the required goals of the Global Education Agenda 2030¹, which focus on environmental education and sustainable development. The environment consists of several components that are interrelated. One of them is forests. According to Eliáš (2010), forests belong to the most important landscape ecological stabilizing elements. Marušáková, et al. (2019) also agree that forests also perform important economic and societal functions. Therefore, it is unquestionable that learning about forest ecosystems and leading to societal responsibility for this natural resource should be part of environmental education and training. Not only in terms of content, but also in terms of where the education itself takes place.

By regular contact of a preschool child with the forest environment, we lay the foundations of values for building his relationship to himself, to others, to living and inanimate nature. This is also indicated by the results of the *Green Public Health - Benefits of Woodlands on Human Health and Well-being study* (2013), according to which the physical and emotional benefits of living in nature are strongly reflected in childhood experiences. For the personal development of children, it is necessary to concentrate on nature, where materials, colors, shapes and scents are extremely important.

In our paper, we focused on the education of preschool children in environmental education, specifically in the forest environment. In preschool education, it is important that children learn by directly observing and exploring the surrounding reality. Such an approach to education is also possible by integrating forest pedagogy programs into education, both at its formal and informal level.

Forest pedagogy in kindergartens is such a pedagogical-didactic approach in which kindergartens can call experts to accomplish their educational goals. In the case of forest pedagogy we are talking about foresters - trained forest teachers. In Slovakia, we have kindergartens that cooperate with various institutions that

can provide them for specific topics with a forest teacher. One of them is the National Forest Center - Institute for Forest Consulting and Education (IFCE) in Zvolen, which as a contributory organization falls under the Ministry of Agriculture and Rural Development of the Slovak Republic. Kindergarten teachers are showing increasing interest in education in the field of forest pedagogy. They are aware that not only cooperation with foresters impacts the formation of a relationship with nature and the forest environment, but also other factors affect forming of a comprehensive development of the personality of a preschool child. As already mentioned, in our paper we focused on examining the factors of the part of environmental education that focuses on the forest environment and sustainability. The study presents the results of research using the Delphi method, where we were examining through expert opinions (experts in forestry, forestry politics, education, environmental education, forest pedagogy), which key factors determine informal pre-primary education of children in environmental education in the forest environment.

1 Forest environment as a means of education

Slovakia, located in the heart of Europe, can be proud of its beautiful nature. With a share of forest area of 41.2% of the total land area, we belong to the European countries with the highest forest cover (Zelená správa, 2019²). The forests of karpatský oblúk (the Carpathian arch) belong to the most valuable forest ecosystems in Europe. Within this entire geographical area, there is a relatively frequent occurrence of old-growth forests leftovers and natural forest communities. Čaboun (2008) reminds that Slovakia is a geographically diverse country, which largely spreads over mountainous and rugged territory. Highlands and mountains cover 60% of Slovakia and lowlands approximately 40%. It is important to appreciate the value of this irreplaceable wealth.

The forest environment is a diverse community of plants, fungi, animals, as well as air, water and soil. The forest as a means of education is becoming the research subject for children, because of its various changes. The forest is like a textbook that renews, enriches and changes every year. It also allows us to explain numerous natural phenomena by direct observation, but also to discover beauty and form a relationship, not only to the forest, but to all living and inanimate objects.

By thinking about education in nature, specifically in the forest environment, we need to know the answers to the questions under what conditions is this education possible and what comes into the play in this process.

Knowing the factors that affect the formal and informal environmental education of preschool children is one of the prerequisites for the successful integration of environmental education in the forest environment.

Environmental education in preschool education in Slovakia is a part of all educational areas of the State Educational Program (more on www.statpedu.sk, 2016), but in primary education it is one of the cross-sectional subjects of educational areas. It is peculiar that the forest environment is in the program mentioned rather marginally. However, if we search in the topics, content standards or performance standards, the terms forest, forest environment, tree or needles, we will find only one reference. In reference to the educational area *Man and Society*, subarea *Geography and surroundings*, where the performance standards state that the child "should use terms such as hill, forest, field, meadow, river, lake and pond when talking about the landscape." In the content standards are also stated the proposed activities for the teacher, when "she conducts a guided interview on the topic of the natural beauty of our country; talks to children about their

¹ <https://unesdoc.unesco.org/ark:/48223/pf0000245656>

² Report on Forestry in the Slovak Republic for 2019

experiences with the landscape and how people change the landscape (for example, by building cities, dams, etc.). Here is a room for evaluation questions such as - How does the child perceive the diversity of the landscape? How does he or she describe the country? How does he or she perceive its transformation by man? (more on www.statpedu.sk, 2016, p. 64). As emphasized by G. Imashey et al. (2020), environmental education is a continuous process of training, self-education, gaining experience, which leads to the personality development, because value orientations are formed by acquired specific knowledge about environmental protection and care for nature, that become standards of behavior in everyday life.

Forest pedagogy takes place in natural conditions, in a forest environment. There was developed the *Concept of Forest Pedagogy as a part of environmental education* (Marušáková, et al. 2010) in Slovakia. It was approved by the Ministry of Agriculture and Rural Development of the Slovak Republic no. 2824 / 2011-710. It defines the forest pedagogy as follows: *Forest pedagogy as a part of environmental education is learning about the forest ecosystem and educating for a long-term sustainable way of life on the example of the functioning of forest ecosystems. Forest pedagogy activities can be in the form of formal and non-formal education.*

The education of forest teachers together with the coordination of forest pedagogy activities is in Slovakia provided by the National Forest Centre (more on www.lesnapedagogika.sk). It is an accredited educational program Forest Pedagogy in the range of 80 hours, which can be completed by experts - foresters. At the request of kindergartens or primary schools within the frame of formal education, graduates of the Forest Pedagogy program can teach topics related to the forest environment - *animals in the forest, deciduous and coniferous trees, anthill, trees and fruits, living and inanimate nature, the profession of a forester, hunting bees, etc.* If the forester - forest pedagogue covers the topics of the National Educational Program and respects all didactic principles we can talk about forest pedagogy within the formal education. However, it has its place mainly in non-formal education. The kindergarten can contact a forest pedagogue also to pursue hobbies in the field of environmental education, or we can carry out various activities with foresters in cooperation with parents, or there can be established hobby departments (hunting, forestry, beekeeping) in leisure centers.

Since its establishment in 2006, the National Forest Centre has also been working actively in the field of environmental education. It cooperates with all types of schools. It has experience in implementing national and international projects that focus on environmental education and education for sustainable development. We can mention following nationwide projects – *Les ukrytý v knihe* (The Forest Hidden in the Book), *Detická lesnícka univerzita* (Children's Forestry University), *Lesná olympiáda* (Forest Olympics), etc. These projects have been conducted successfully for several years. That has probably caused a great interest of teachers in forest pedagogy and cooperation with forest pedagogues. The research carried out by the National Forest Centre in 2015 focused on finding out interest in experiential forest pedagogy programs, in which 81 kindergartens and primary schools participated, revealed, among other things, that 58% of respondents positively evaluate a stay in a forest natural environment with a forest pedagogue. In second place with 38% were experiential programs in a forest classroom that is located in a forest environment. Events for the public organized by foresters, a visit of a forester in a school facility were appreciated by 25% of respondents and multimedia educational programs about the forest were positively evaluated by 16% of respondents (Sarvašová et al., 2016).

Several classes have participated in walks with forest teachers in recent years. And their interest in such activities persists. The kindergarten teachers are showing great interest in forest pedagogy. This is also reflected in the number of teachers who registered for innovative education *Teaching about the forest*, by which the National Forest Centre has expanded its offer of

environmental education also to primary education teachers and educators.

In 2019, we started a research project in Slovakia. The core of it is applied pedagogical research - *Forest pedagogy and education for sustainable development in pre-primary and primary education*. We based its starting points also on the results of some of our and foreign pedagogical research (Kollárová, 2018, Warden, 2012) as well as the results of cooperation between the Faculty of Education of Constantine the Philosopher University in Nitra and the National Forest Centre - Institute for Forest Consulting and Education. The key idea of the project is to support new trends in education that aim at innovative and activating approaches, with an emphasis on linking theory to practice.

2 Research on identifying factors involved in environmental education of preschool children

To identify the key factors, we decided to use a quantitative-qualitative research strategy.

The aim of the research was to find out which factors affect the informal pre-primary education of children in environmental education in the forest environment. Since this is mainly a qualitative methodology, where we studied what subjective characteristics link the participants to factors affecting the child's knowledge and forming the relationship to nature - to the forest environment, we did not set hypotheses. We focused on the research question, based on the research goal - *Which factors influence the non-formal pre-primary education of children in environmental education in the forest environment*. Partial goals of the research, or more precisely the questions, were which factors we can consider positive and which negative.

2.1 Research methods

To get the answers to these research questions, we decided to use the Delphi method. The Delphi method is a method of qualitative research based on structured group communication. The basis is the "Syndrome of Groupthink" by gathering the opinions of selected experts on the issue (Cialkowski et al. 2008). As stated by the authors (McKenna 1994, Lynn et al., 1998), the goal is to reach a consensus, group viewpoint on a given research question. It should be noted that there is no consistent method when applying the Delphi method. There can be found several approaches in literature (Hasson, Keeney, McKenna, 2000). The principle of the Delphi method is based on using a teamwork, provided that when more experts - participants will give their opinion on the topic, they are less likely to make the wrong decision. There is a greater risk of incorrect decisions when expert works alone.

When applying this research method the selection of experts is crucial (Goodman, C.M., 1987; Baker, J et al. 2006). The experts answer the questions through multi-round inquiries with controlled feedback between rounds. During repeated inquiries, they can change or correct their opinion according to the feedback from other experts. It is important that their anonymity is maintained throughout the whole inquiry process. It removes concerns about expressing their own opinion. The number of experts is not limited. It is also taken into consideration that not all the experts will send their answers.

According to Palán (2002), this method is most often used to anticipate (predict) further developments in a certain area and to make prospective estimates. Novák (2007) indicated that it is appropriate to apply it for those areas of research where we need to obtain expert opinions on issues that are difficult to detect by statistical or other methods.

For the needs of our research, we have chosen three rounds of research. The research took place since March 2019 to April 2020. The research itself was preceded by a preparatory phase, where a research problem and a research question were identified and a panel of experts was selected.

Another research tool was a questionnaire. All items in the questionnaire were closed-ended. We needed to find out what level of influence the participants attribute to these factors, therefore the tool in each item was the Likert scale (Rod, 2012).

2.2 Research file

Qualitative research is characterized by the fact that the participants of the research group must have something in common. When compiling the research file - a panel of experts, we wanted to capture the widest possible range of diversity of perspectives and at the same time to link the theory to the practice and specific experiences of experts. The final panel of experts consisted of experts from forestry, forestry politics, education, environmental education and forest pedagogy. The criteria for selecting the experts - research participants were set as follows:

- the participant knows the system of environmental education, its goals, methods and forms;
- the participant has real experience with the practical implementation of environmental programs in the forest environment;
- the participant is an academic with knowledge of forestry sciences, environmental sciences.

The anticipated number of experts was 15. Each participant was addressed separately. After the initial electronic contact and informing about the research goals, 13 experts were involved in the further implementation. They worked in the following areas: university / academic environment (4 participants), school / kindergarten (2 participants), educational institution providing environmental education (5 participants), organization providing environmental education programs (2 participants). There were a total of 13 participants. We would like to remind that during each communication was maintained anonymity, it has been communicated exclusively electronically and the participants did not know the list of other participants - experts.

2.3 Research methodology

The first round of an evaluation took place in the following period: 01. 03. - 14. 03. 2019.

In the first round, the participants were asked an open-ended question: *"Indicate which factors do you think influence the non-formal pre-primary education of children in environmental education in the forest environment"*. The aim was to identify as many factors as possible - positive as well as negative, which have an impact on non-formal pre-primary education in environmental education in the forest environment.

The categorization of factors was not predetermined. The number of factors formulated by individual experts ranged from 4 to 46. The total number of answers to this question was 159. Many factors were the same, they were only formulated differently. Therefore, it was inevitable to make one list of factors as the intersection of all responses with minimal adjustments, in order to preserve the authenticity of the panelists' responses. The final list contained 67 factors, which were also used in other phases of the research.

The next step of this round was the definition of the so-called areas. An area is a group of factors with the same specification. Experts themselves predicted (anticipated) areas that correspond to the natural process of education, i.e. educator, learner, parent (in the case of preschool children) location, content, goals, methods, means.

For further research we identified 8 areas: 1. *Location*; 2. *Target group and its predispositions*; 3. *Parents / family environment*; 4. *Kindergarten teacher*; 5. *Environmental education, its goal and content*; 6. *Environmental education - methods and forms*; 7. *Educator for environmental education from the external environment*; 8. *External factors*.

Subsequently, the factors in each area were divided into two groups - positive and negative. The full overview of the areas and their factors is stated in Tables 1 - 16, which we present in the following part of the study.

2.4 Research results using the Delphi method

Results of the 1st round of research using the Delphi method

The ratio of factors with positive and negative influence was relatively balanced, positive factors in the number of 35 slightly exceeded negative factors in the number of 32.

- *Factors with a positive impact* - most factors with a positive impact were in the areas of: Environmental education - methods and forms - 9; Environmental education, its goal and content -7; Location - 6. The least factors (2) had following areas: Target group and its predispositions and Parents / family environment.
- *Factors with a negative impact* - most factors with a negative impact occurred in these areas: External factors - 9; Educator for environmental education from the external environment - 6; Location - 6. We noticed one negative impact in the area: Environmental education, its goal and content.

Participants attach the highest importance to the field of environmental education as such in terms of methods, forms, goals and its content.

The second round of evaluation took place between 10.02 – 22.02 2020.

In this phase, we focused on the evaluation of the factors identified in the first round, in terms of the extent of their impact on non-formal pre-primary education of children in environmental education in the forest environment. As a research tool, we chose a questionnaire, which, unlike the first round, consisted of closed-ended questions. Given the goal of the inquiry, we used the Likert scale (Rod, 2012), which is frequently used to measure attitudes and opinions. Experts expressed their opinions on each factor using a five-point scale, with grade 5 indicating the greatest degree of influence of the factor and grade 1 indicating the least degree of influence of the factor. We sent the questionnaire to all the participants who answered in the first round. The return rate of the questionnaires was 100%. The data collection was then followed by its analysis. The mean and median were calculated for each factor. We assumed that all values 1 to 5 of the Likert scale have the same importance, therefore we calculated them using the following formula:

$$\bar{x} = \frac{\sum_{i=1}^5 x_i n_i}{\sum_{i=1}^5 n_i}$$

If the average is less than 3, then this factor is not important, if it is higher than 3, then this factor is important. If the average value is higher than 4, then this factor is a key factor. The results are interpreted in the following Tables 1-16. We distinguish between positive and negative factors and feature them separately.

In the following section, we graphically present by using tables the factors that *positively affect the informal pre-primary education* of children in environmental education in the forest environment. Positive factors are in Tables 1 - 8.

Table 1: Measure of impact – Location

AREA	IMPACT SCALE - X_j					Mean	Median
	1 least impact greatest impact 5						
	1	2	3	4	5		
LOCATION	No. of votes from panelists						
	Absolute number - n_j						
It is important to choose a suitable route in terms of terrain and relief	0	1	2	3	6	4,17	4,5
Attractiveness of the forest environment with the possibility of direct observation, the presence of various objects (feeder, tree stand, nest, anthill)	0	0	2	6	4	4,17	4
Use of the kindergarten environment itself (kindergartens should be a real example of a positive attitude towards nature in their own processes)	0	0	3	6	3	4	4
Children's residence (city, town, village, dispersed settlement)	0	1	5	3	3	3,67	3,5
Visiting other places or events focused on environmental education (e.g. The Museum of Forestry and Wood Technology, Forestry Days, Forestry Open-Air Museum in Vydrovská dolina, etc.)	0	3	6	1	2	3,17	3
Type of forest (old forests, thicket stands, monoculture forests, mixed stands, commercial forests, protection forests, special purpose forests)	3	2	5	1	1	2,58	3

Table 2: Measure of impact - Target group and its predispositions

AREA	IMPACT SCALE - X_j					Mean	Median
	1 least impact greatest impact 5						
	1	2	3	4	5		
TARGET GROUP AND ITS PREDISPOSITIONS	No. of votes from panelists						
	Absolute number - n_j						
Adequate length of stay in the forest according to the age of children	0	0	2	5	5	4,25	4
Alternation of short attention spans	0	1	4	4	3	3,75	4

Table 3: Measure of impact - Parents / family environment

AREA	IMPACT SCALE - X_j					Mean	Median
	1 least impact greatest impact 5						
	1	2	3	4	5		
PARENTS / FAMILY ENVIRONMENT	No. of votes from panelists						
	Absolute number - n_j						
Supportive family environment (children go to nature with their parents from an early age, parents build children's relationship to responsible behaviour towards nature)	0	0	0	3	9	4,75	5
Parental support, involvement of parents in kindergarten activities, parental involvement	0	2	2	5	3	3,75	4

Table 4: Measure of impact - Kindergarten teacher

AREA	IMPACT SCALE - X_j					Mean	Median
	1 least impact greatest impact 5						
	1	2	3	4	5		
KINDERGARTEN TEACHER	No. of votes from panelists						
	Absolute number - n_j						
Teacher's didactic ability (teacher's ability to engage, motivate, explain, listen, manage children's work, use appropriate experiential activities, games in the forest)	0	0	0	5	7	4	5
Teacher 's relation to environmental education, forest, forestry, forester' s work	0	0	2	3	7	4	5
Personal involvement of the teacher beyond his or her duties	0	0	2	4	6	4	4

Teacher's erudition in the field of environmental education, knowledge of natural processes of the forest environment	0	0	3	6	3	4	4
Teacher awareness of forest pedagogy programs	0	0	6	2	4	3	3

Table 5: Measure of impact - Environmental education, its goal and content

AREA	IMPACT SCALE - X_j					Mean	Median
	1 least impact greatest impact 5						
	1	2	3	4	5		
ENVIRONMENTAL EDUCATION, ITS GOAL AND CONTENT	No. of votes from panelists						
	Absolute number - n_j						
Forming the foundations for building a positive relationship with nature (in the cognitive, affective and psychomotor areas) and the perception of oneself as its active part (learning to live in nature, with nature and for nature)	0	0	1	5	6	4,42	4,5
Linking non-formal education in the forest environment to the already learned subject matters and subject matters that are currently being studied within formal education	0	0	0	8	4	4,33	4
Forming the foundations of the perception of the relationship between nature and its positive impact on human health	0	1	1	6	4	4,08	4
A balanced ratio of educational and training goals appropriate to the age and individual predispositions of children	0	1	2	4	5	4,08	4
Systematic approach to information provision (logical structure, logical order)	0	0	4	4	4	4	4
Basics of developing key competencies	0	0	5	3	4	3,92	4
Forming the foundations of environmental protection and creation	0	0	5	3	4	3,92	4

Table 6: Measure of impact - Environmental education - methods and forms

AREA	IMPACT SCALE - X_j					Mean	Median
	1 least impact greatest impact 5						
	1	2	3	4	5		
METHODS AND FORMS	No. of votes from panelists						
	Absolute number - n_j						
Natural activity and creativity of children, joy of games and movement in nature	0	0	0	3	9	4,75	5
Mediation of a personal experience with nature by using all the senses	0	0	2	0	10	4,67	5
Experiential nature of activities	0	0	0	4	8	4,67	5
The right choice of teaching methods and forms of teaching	0	0	1	5	6	4,42	4,5
The possibility of using forest as a source of ideas and source of raw materials for creative activities (use of leaves, fruits, moss, flowers to create works of art - contact with nature through natural materials)	0	0	2	6	4	4,17	4
Opportunity to observe some professionals while working. / loading and unloading of wood, planting tree seedlings, taking care of animals, etc./	0	1	1	8	2	3,92	4
Possibility to connect it with sport activities, culture, social phenomena	0	0	6	4	2	3,67	3,5
Effective involvement and enough teaching aids	0	1	5	4	2	3,58	3,5
The potential of modern technologies and their effective use in educational activities	0	1	6	5	0	3,33	3

Table 7: Measure of impact - Educator of environmental education (EE) from the external environment

AREA	IMPACT SCALE - X_j					Mean	Median
	1 least impact greatest impact 5						
	1	2	3	4	5		
EDUCATOR OF ENVIRONMENTAL EDUCATION (EE) FROM EXTERNAL ENVIRONMENT	No. of votes from panelists						
	Absolute number - n_j						
Lecturer training, his erudition in pedagogical	0	0	1	2	9	4	5

procedures, appropriately chosen forms of education							67	
The willingness and ability of the forest pedagogue "to adapt to children's level of the mental maturity and their height."	0	0	1	4	7	4,5		5
Influence of external authorities (possibility of implementation of EE educators in the environment of kindergartens)	0	0	5	6	1	3,67		4

Table 8: Measure of impact - External factors

AREA	IMPACT SCALE - X_i					Mean	Median
	1 least impact greatest impact 5						
	1	2	3	4	5		
EXTERNAL FACTORS	No. of votes from panelists						
	Absolute number - n_i						
It is important with which organizations dealing with environmental education the kindergarten cooperates	1	0	4	3	4	3,75	4
Financing of activities offered by commercial or contributory organizations or using projects funding	1	1	6	3	1	3,17	3

Results of the 2nd round of the Delphi research method for positive factors

Most factors with a positive impact with an average above the value of 4 occurred in the following areas: *Environmental education, its goal and content* – there were 7 factors and 5 of them reached the required value; *Environmental education - methods and forms* - there were 9 factors and 5 of them reached the value of 4.

Among all the factors, the highest value of influence was achieved by: *Natural activity and creativity of children, joy of playing games and movement in nature; Supportive family environment for children*. The factor of *Natural activity and creativity of children, the joy of games and movement in nature* was clearly attributed by the participants to a higher degree of influence over the factor of *The Potential of modern technologies and their effective use in educational activities*. The participants attributed identical requirements to the kindergarten teacher and the environmental education educator from the external environment. Factors with the highest value in the given areas: *Didactic ability of the teacher (the teacher's ability to engage, motivate, explain, etc. and The training of the lecturer, his erudition in pedagogical procedures, appropriately chosen forms of education*.

As for the *Place* area, the participants considered the factors of *Choosing a suitable route in terms of terrain and attractiveness of the forest environment with the possibility of direct observation, the presence of various objects (feeder, tree stand, etc.)* to be the most important. For informal pre-primary education of children in environmental education in the forest environment is that considered to be the key in developing their cognitive processes.

Similarly as we described the factors with a positive impact, in the following section we present *the factors that negatively affect* the non-formal pre-primary education of children in environmental education in the forest environment. They are presented in Tables 9 - 16.

Table 9: Measure of impact – Location

AREA	IMPACT SCALE - X_i					Mean	Median
	1 least impact greatest impact 5						
	1	2	3	4	5		
LOCATION	No. of votes from panelists						
	Absolute number - n_i						
Accessibility of the forest environment to the kindergarten (it is far from the forest, there is no forest environment near the kindergarten)	0	1	3	2	6	4,08	4,5
It is necessary to pay attention to safety in the forest in terms of cleanliness (e.g. garbage)	1	2	2	5	2	3,42	4

There may be a restriction of entering the forest in terms of logging or other forestry activities	1	2	4	2	3	3,33	3
Lack of necessary infrastructure in the forest for rest (benches, rubbish bins, rest areas, nature trails, etc.)	3	0	5	3	1	2,92	3

Table 10: Measure of impact - Target group and its predispositions

AREA	IMPACT SCALE - X_i					Mean	Median
	1 least impact greatest impact 5						
	1	2	3	4	5		
TARGET GROUP AND ITS PREISPOSITION	No. of votes from panelists						
	Absolute number - n_i						
Kindergarten daily schedule	0	2	2	6	2	3,67	4
Health status of children (allergies, children with behavioral disorders, etc.)	0	3	2	4	3	3,58	4
Physical fitness of children	0	2	3	5	2	3,58	4

Table 11: Measure of impact - Parents / family environment

AREA	IMPACT SCALE - X_i					Mean	Median
	1 least impact greatest impact 5						
	1	2	3	4	5		
PARENTS / FAMILY ENVIRONMENT	No. of votes from panelists						
	Absolute number - n_i						
Negative relationship patterns in family towards nature, inappropriate upbringing in the family and the absence of developing responsibility for one's own behavior and actions	0	0	0	5	7	4,58	5
Social status of the family (possibility to get clothes and footwear suitable / of good quality for the forest environment	0	4	4	4	0	3	3
Parental consent and the demand to be informed in advance about the event is required	1	5	2	2	2	2,92	2,5

Table 12: Measure of impact - Kindergarten teacher

AREA	IMPACT SCALE - X_i					Mean	Median
	1 least impact greatest impact 5						
	1	2	3	4	5		
KINDERGARTEN TEACHER	No. of votes from panelists						
	Absolute number - n_i						
Teachers' interest in knowledge of the forest, which may not always correspond to publicly presented facts, and a willingness to apply it and communicate it to children	0	0	2	6	4	4,17	4
Active or passive cooperation of teachers in the activities of forest pedagogy	0	0	4	6	2	3,83	4
Not sufficient number of kindergarten teachers	0	4	5	1	2	3,08	3
Excessive expectations of teachers from forest pedagogy programs	0	3	6	2	1	3,08	3

Table 13: Measure of impact - Environmental education, its goal and content

AREA	IMPACT SCALE - X_i					Mean	Median
	1 least impact greatest impact 5						
	1	2	3	4	5		
ENVIRONMENTAL EDUCATION, ITS GOAL AND CONTENT	No. of votes from panelists						
	Absolute number - n_i						
The focus is on formal education	0	0	3	5	4	4,08	4

Table 14: Measure of impact - Environmental education - methods and forms

AREA	IMPACT SCALE - X_i					Mean	Median
	1 least impact greatest impact 5						
METHODS AND FORMS	1	2	3	4	5	No. of votes from panelists	Absolute number - n_i
	Formality, use of monotonous "lecture" forms	0	0	0	3		
Education based on instructing, without examples of real activities (children imitate the behavior of adults) in a real environment	0	0	2	5	5	4,25	4
Lack of critical thinking when selecting activities ("pseudo environmental activities")	0	0	3	4	5	4,17	4

Table 15: Measure of impact - Educator of environmental education (EE) from the external environment

AREA	IMPACT SCALE - X_i					Mean	Median
	1 least impact greatest impact 5						
EXTERNAL ENVIRONMENTAL EDUCATION EDUCATOR	1	2	3	4	5	No. of votes from panelists	Absolute number - n_i
	Lack of qualified environmental education (EE) lecturers	0	0	3	4		
Forest teachers and EE workers are available only for limited amount of time (restrictions by the employer)	0	1	2	5	4	4	4
Insufficient staff capacity e.g. State Nature Conservancy for systematic cooperation with kindergartens	0	0	4	6	2	3,83	4
Availability of forest teachers near to kindergartens	0	0	5	4	3	3,83	4
In ethnically mixed areas, the ability of a forest educator and EE worker, to communicate with children in a language they understand.	1	3	3	3	2	3,17	3

Table 16: Measure of impact - External factors

AREA	IMPACT SCALE - X_i					Mean	Median
	1 least impact greatest impact 5						
EXTERNAL IMPACTS	1	2	3	4	5	No. of votes from panelists	Absolute number - n_i
	Lack of projects for the involvement of this target group in non - formal education	0	2	3	6		
Weather (low temperatures, strong wind, wet terrain)	0	2	5	3	2	3,42	3
The problem of finding a suitable date with regard to kindergarten programs and the kindergarten daily schedule	0	2	6	2	2	3,33	3
It is necessary to pay for the transport of children to the forest	0	1	8	1	2	3,33	3
Random natural phenomena		2	7	1	2	3,25	3
Bad experience of kindergartens from the previous program focused on environmental education	1	2	3	5	1	3,25	3,5
It is required to pay for activities	0	3	5	2	2	3,25	3
Overexposure of offers of educational programs for kindergartens from external environment	1	1	8	2	0	2,92	3
The consent of the forest owner / forest manager to enter the forest is required	4	2	4	1	1	2,42	2,5

Results of the 2nd round of the Delphi research method for factors with a negative effect

There were significantly fewer factors *with a negative impact* in the second round of the Delphi method study, which reached a value of 4 than the positive factors with this value. Most factors with an average higher than 4 were achieved by the factors in the field of: *Environmental education - methods and forms* (all three mentioned factors reached the value of 4) - *Formality, the use of monotonous lecture forms; Education based on instructions,*

without examples of real activities; The lack of critical thinking. The last mentioned considered experts to be the most important of them. It is interesting that for the informal pre-primary education of children in environmental education in the forest environment, the factor of *The lack of the necessary infrastructure in the forest for rest* is negligible for them. Similarly, *The consent of the forest owner / forest manager to enter the forest* is a negligible factor for them. It should be emphasized that when talking about the *External Factors* area, which has the highest number of factors, none of its factors reached the value of 4.

Evaluation of the 3rd round of research using the Delphi method The third (final) round of research using the Delphi method was carried out in the following period: 08. 04. - 17. 04. 2020. The purpose of the third round was to review the order of factors in terms of their impact on informal pre-primary education of children from environmental education in the forest environment. As a research tool, we used a questionnaire in which the factors for each area were sorted in ascending order from the largest impact to the least impact. The order corresponded to the results achieved in the second round. The sums of the order for individual factors were calculated and for each area of factors also *Kendall's Coefficient of Concordance W* was calculated. With its help we could assess the degree of closeness of the relationships between the evaluation of the influence of individual factors by experts. The coefficient takes values from 0 (means no relationship) to 1 (indicates a strong relationship), according to the formula:

$$W = \frac{\sum X^2 \cdot (\sum X)^2}{12 k^2 \cdot (n^3 - n)}$$

We sent the questionnaire to 13 participants, 12 of them were sent back. Based on the evaluation of the 3rd round, the final order of factors in individual areas was defined. The results are interpreted in the following tables. We proceeded in the same way as in the previous phases, i.e. we evaluated both the positive and the negative factors separately. The key factors from the second round, whose average value reached 4 and more, are highlighted in bold in the tables.

Positive factors obtained by the questionnaire survey:

Table 17: Sequence of factors – Location

FACTOR	Sum of order	Final order
It is important to choose a suitable route in terms of terrain and relief	24	1
Attractiveness of the forest environment with the possibility of direct observation, presence of various objects (feeder, tree stand, nest, anthill)	25	2
Use of the kindergarten environment itself (kindergarten should be a real example of a positive attitude towards nature also in their own processes)	39	3
Residence of children (city, town, village, dispersed settlement)	44	4
Visiting other places or events focused on environmental education (e.g. The Museum of Forestry and Wood Technology, Forestry Days, Forestry Open-Air Museum in Vydrovská dolina, etc.)	60	5
Type of forest (old forests, thicket stands, monoculture forests, mixed stands, commercial forests, protection forests, special purpose forests)	60	5
Kendall's Coefficient of Concordance W - 0.51		

Table 18: Sequence of factors - Target group and its predispositions

FACTOR	Sum of order	Final order
Adequate length of stay in the forest according to the age of children	16	1
Alternation of short attention spans	20	2
Kendall's Coefficient of Concordance W - 0.11		

Table 19: Sequence of factors - Parents / family environment

FACTOR	Sum of order	Final order
Supportive family environment for children (children go to nature with their parents from an early age, parents build children's relationship to responsible behavior towards nature)	13	1
Parental support, involvement of parents in kindergarten activities, parental involvement	23	2
Kendall's Coefficient of Concordance W - 0,69		

Table 20: Sequence of factors - Kindergarten teacher

FACTOR	Sum of order	Final order
Teacher's didactic ability (teacher's ability to engage, motivate, explain, listen, manage children's work, use appropriate experiential activities, games in the forest)	25	1
Personal involvement of the teacher beyond his or her duties	29	2
Teacher's relation to environmental education, forest, forestry, forester's work	35	3
Teacher erudition in the field of environmental education, knowledge of natural processes of forest environment	35	3
Teacher's awareness of forest pedagogy programs	56	4
Kendall's Coefficient of Concordance W - 0,40		

Table 21: Sequence of factors - Environmental education, its goal and content

FACTOR	Sum of order	Final order
Forming the foundations for building a positive relationship with nature (in the cognitive, affective and psychomotor areas) and the perception of oneself as its active part (learning to live in nature with nature and for nature)	28	1
Linking non-formal education in the forest environment to the already learned subject matters and subject matters that are currently being studied within formal education	30	2
A balanced ratio of educational and training goals appropriate to the age and individual predispositions of children	34	3
Forming the foundations of the perception of the relationship between nature and its positive impact on human health	51	4
Systematic approach to information provision (logical structure, logical order)	57	5
Basics of developing key competencies	64	6
Forming the foundations of environmental protection and creation	65	7
Kendall's Coefficient of Concordance W - 0,39		

Table 22: Sequence of factors - Environmental education - methods and forms

FACTOR	Sum of order	Final order
Mediation of a living personal experience with nature by using all the senses	24	1
Experiential nature of activities	31	2
Natural activity and creativity of children, joy of games and movement in nature	32	3
The possibility of using a forest as a source of ideas and sources of raw materials for creative activities (use of leaves, fruits, moss, flowers to create works of art - contact with nature through natural materials)	48	4
The right choice of teaching methods and forms of teaching	56	5
Opportunity to observe some professions at work / loading and unloading of wood, planting tree seedlings, taking care of animals, etc./	68	6
Possibility to connect it with sport activities, culture, social phenomena	84	7
Effective involvement and enough teaching aids	91	8
The potential of modern technologies and their effective use in educational activities	106	9
Kendall's Coefficient of Concordance W - 0,79		

Table 23: Sequence of factors - Educator of environmental education from the external environment

FACTOR	Sum of order	Final order
The willingness and ability of the forest pedagogue "to adapt to children's level of the mental maturity and their height."	18	1
Training of the lecturer, his erudition in pedagogical procedures, appropriately chosen forms of education	19	2
Influence of external authorities (possibility of implementation of EE educators in the environment of kindergarten)	35	3
Kendall's Coefficient of Concordance W - 0,63		

Table 24: Sequence of factors - External factors

FACTOR	Sum of order	Final order
It is important with which organizations dealing with environmental education the kindergarten cooperates	13	1
Financing of activities offered by commercial or contributory organizations or using projects funding	23	2
Kendall's Coefficient of Concordance W - 0,69		

During the third round, there was a minimal change in the order of factors positively influencing non-formal pre-primary education of children in environmental education in the forest environment compared to the second round. The most significant was the change in the field of *Methods and forms of environmental education*, where experts moved the factor of *Mediation of living personal experience with nature by using all the senses* to the first place before the factor of *Natural activity and creativity of children, joy of games and movement in nature*. In the field of Environmental Education Educator from the external environment, the factor - *The willingness and ability of the forest pedagogue "to adapt to children's level of the mental maturity and their height."* moved to the first place before *Training of the lecturer, his erudition in pedagogical procedures, appropriately selected forms of education*.

The values of the Kendall's Coefficient of Concordance show compatibility in the evaluation of the order of individual factors in terms of the impact on non-formal pre-primary education of children in environmental education in the forest environment. The greatest agreement was reached in the area of: *Methods and forms of environmental education* (W - 0.79), followed by the areas of *External factors* (W - 0.69); *Parents / family environment* (W - 0.69). On the contrary, the smallest agreement was reached in the area of the *Target group and its predispositions* (W - 0.11).

Negative factors, which were indicated by the questionnaire survey, are first presented graphically:

Table 25: Sequence of factors - Location

FACTOR	Sum of order	Final order
Accessibility of the forest environment to the kindergarten (it is far from the forest, there is no forest environment near the kindergarten)	13	1
There may be a restriction of entering in terms of logging or other forestry activities in the forest	32	2
It is necessary to pay attention to safety in the forest in terms of cleanliness (e.g. garbage)	34	3
Lack of necessary infrastructure in the forest for rest (benches, rubbish bins, rest areas, nature trails, etc.)	41	4
Kendall's Coefficient of Concordance W - 0,60		

Table 26: Sequence of factors - Target group and its predispositions

FACTOR	Sum of order	Final order
Health status of children (allergies, children with behavioral disorders, etc.)	21	1
Kindergarten daily schedule	25	2
Physical fitness of children	26	3
Kendall's Coefficient of Concordance W - 0,05		

Table 27: Sequence of factors - Parents / family environment

FACTOR	Sum of order	Final order
Negative relationship patterns towards nature in the family, inappropriate upbringing in the family and the absence of developing responsibility for one's own behavior and actions	15	1
Social status of the family (possibility to get clothes and footwear suitable / of good quality for the forest environment)	27	2
Parental consent and the demand to be informed in advance about the event is required	30	3
Kendall's Coefficient of Concordance W - 0,44		

Table 28: Sequence of factors - Kindergarten teacher

FACTOR	Sum of order	Final order
Teachers' interest in knowledge of the forest, which may not always correspond to publicly presented facts, and a willingness to apply it and communicate it to children	22	1
Active or passive cooperation of teachers in the activities of forest pedagogy.	24	2
Not sufficient number of kindergarten teachers	35	3
Excessive expectations of teachers from forest pedagogy programs	39	4
Kendall's Coefficient of Concordance W - 0,29		

Table 29: Sequence of factors - Environmental education, its goal and content

FACTOR	Sum of order	Final order
The focus is on formal education		
Kendall's Coefficient of Concordance W -1 *		

* In the next analysis, we did not consider this Coefficient of Concordance as the highest, given that there was only one factor and the result would be quite distorting.

Table 30: Sequence of factors - Environmental education - methods and forms

FACTOR	Sum of order	Final order
Formality, the use of monotonous "lecture" forms	15	1
Lack of critical thinking when selecting activities ("pseudo environmental activities")	27	2
Education based on instruction, without examples of real activities (children imitate the behavior of adults) in a real environment	30	3
Kendall's Coefficient of Concordance W - 0,44		

Table 31: Sequence of factors - Educator of environmental education (EE) from the external environment

FACTOR	Sum of order	Final order
Lack of qualified environmental education (EE) lecturers	23	1
Forest teachers and EE workers are available only for limited amount time (restrictions by the employer)	28	2
Insufficient staff capacity e.g. State Nature Conservancy for systematic cooperation with kindergartens	33	3
Availability of forest teachers near to kindergarten	43	4
In ethnically mixed areas, the ability of a forest educator and an EE worker, to communicate with children in a language they understand.	53	5
Kendall's Coefficient of Concordance W - 0,40		

Table 32: Sequence of factors - External factors

FACTOR	Sum of order	Final order
Weather (low temperatures, strong wind, wet terrain)	41	1
The problem of finding a suitable date with regard to kindergarten programs and the kindergarten daily schedule	45	2
Lack of projects for the involvement of this target group in non - formal education	53	3
It is necessary to pay for the transport of children to the forest	55	4
Bad experience of kindergartens from the previous program focused on environmental education	63	5
It is required to pay for activities	63	5
Overexposure of offers of educational programs for kindergartens from external environment	63	5
Random natural phenomena	64	6
The consent of the forest owner / forest manager to enter the forest is required	93	7
Kendall's Coefficient of Concordance W - 0,21		

In the group of factors negatively influencing non-formal pre-primary education of children from environmental education in the forest environment, compared to the second round, there was a change of order in 4 areas. The most significant change of the order was in the area: *External factors*, where the factor *Lack of projects for the involvement of this target group in non - formal education* fell to third place and the factor *Weather (low temperatures, strong wind, wet terrain)* finished in first place. In

the area of the target group and its predispositions, the factor *Health status of children (allergies, children with behavioral disorders, etc.)* took first place before *Kindergarten daily schedule*.

From the point of view of key factors of individual areas, the order of the second round remained the same. According to Kendall's Coefficient of Concordance was the highest agreement reached in the *Location area* (W - 0.60).

2.5 Interpretation of research data results

The research carried out by the Delphi method, which addressed the research question: *What factors influence the non-formal pre-primary education of children in environmental education in the forest environment*, the following results have been obtained: Experts identified 67 factors, of which 35 were positive and 32 were negative. The most factors belonged to these areas: *Environmental education - methods and forms* - 12; *External factors* - 11; *Location* - 10. The participants consider these areas to be important. In both groups of factors, factors with a rating higher than 4 occurred. These can be considered to be the key factors. The experts identified the most key factors in the areas of *Environmental Education - methods and forms* - 8; *Environmental education, its goal and content* - 6; *Kindergarten teacher* - 5.

The *Place* area had 4 key factors, but in the area of *External Factors* with a high number of factors, none of them reached a value of 4. Therefore, the participants do not consider them to be important.

We can declare that the key factors influencing non-formal pre-primary education of children in environmental education in the forest environment, identified by the Delphi method are factors from the areas of *Environmental education - methods and forms* and *Environmental education, its goal and content*. We will list them as the participants named them:

- Mediation of a living personal experience of nature with all the senses;
- Experiential nature of activities;
- Natural activity and creativity of children, the joy of games and movement in nature;
- The possibility of using forest as a source of ideas and source of raw materials for creative activities (use of leaves, fruits, moss, flowers to create works of art - contact with nature through natural resources);
- Forming the foundations for building a positive relationship with nature (in the cognitive, affective and psychomotor areas) and the perception of oneself as its active part (learning to live in nature, with nature and for nature);
- Linking non-formal education in the forest environment to the already learned subject matters and subject matters that are currently being studied within formal education;
- A balanced ratio of educational and training goals appropriate to the age and individual predispositions of the children;
- Systematic approach to information provision (logical structure, logical order).

Other important factors that can be perceived as essential are:

- It is important to choose a suitable route in terms of terrain and relief;
- Attractiveness of the forest environment with the possibility of direct observation, the presence of various objects (feeder, tree stand, nest, anthill);
- The use of the kindergarten environment itself (kindergarten should be a real example of a positive attitude towards nature also in their own processes);
- Didactic ability of the teacher (ability of the teacher to engage, motivate, explain, listen, manage children's work, use appropriate experiential activities, games in the forest;

- Personal involvement of the teacher beyond his or her responsibilities;
- The teacher's relationship to environmental education, forestry, forest, forester's work;
- Teacher's erudition in the field of environmental education, knowledge of natural processes of the forest environment;
- The willingness and ability of the forest pedagogue "to adapt to children's level of the mental maturity and their height.:";
- Training of the lecturer, his erudition in pedagogical procedures, appropriately chosen forms of education;
- Supportive family environment of children (children go to nature with their parents from an early age, parents build children's relationship to responsible behavior towards nature);

Defining the negative factors draws our attention to possible threats and problems in the implementation of non-formal pre-primary education of children in environmental education in the forest environment. The participants defined that the most factors with a negative impact on this education are in the area of External Factors - 9, but none of the factors can be considered as a key factor. The experts defined the most key negative factors again for the field of *Environmental Education - methods and forms*. These factors are:

- Formality, the use of monotonous "lecture" forms;
- Lack of critical thinking when selecting activities ("pseudo environmental activities");
- Education based on instructioning, without examples of real activities (children imitate the behavior of adults) in a real environment.

They also mentioned other, less significant factors that have a negative impact on the informal pre-primary education of children from environmental education in the forest environment:

- Lack of qualified lecturers focusing on environmental education;
- Forest teachers and EE workers are available only for limited amount of time (restrictions by the employer);
- The focus is on formal education;
- Teachers' interest in knowledge from the forest, which may not correspond to publicly presented facts, and a willingness to apply it and communicate it to children;
- Negative relationship patterns towards nature in the family, inappropriate upbringing in the family and the absence of developing responsibility for one's own behavior and actions;
- Accessibility of the forest environment to the kindergarten (it is far from the forest, there is no forest environment near the kindergarten).

Regarding the mentioned results, it is important to state that the factors formulated in the initial phase were not so clear in the later decision-making of the participants. Some were categorized, very clearly defined, others included a number of related factors. Therefore, it is possible that such factors had greater strength in the final evaluation. During the second round, one expert was concerned about the unclear formulation of the factor. Clearly, precision plays an important role in the initial specification of factors. To clarify, we declare that for maximum authenticity, we altered the formulation of factors to the least extent. It was found out during the research that experts did not perceive the differences between formal and non-formal education, or did not consider them to be important. Therefore, those that may not be directly related to informal environmental education and training have also emerged in the group of factors, e.g. lack of teachers in kindergarten, or enough or lack of teaching aids.

2.6 Research conclusions and recommendations

The use of the Delphi method in the expert determination of factors influencing non-formal pre-primary education, which

takes place in a forest environment, is of great importance for pre-school children. This approach to environmental education provides children with a direct personal experience through the senses and contact with nature. It was found out that children have the opportunity to get to know the nature through activity and experience, specifically the forest environment, which supports their emotional development (mostly emotions of joy - from movement, overcoming obstacles, from the sounds of nature), psychomotor development (movement in uneven natural terrain, overcoming obstacles in nature environment, which requires jumping, walking on tiptoes, finding balance, etc.). They learn to name and describe the observed natural phenomena and in the end develop their creativity. Experts also indicated that the attractiveness of the forest environment with the possibility of direct observation of various objects such as feeder, tree stand, nest or anthill, plays an important role in this type of education. These are some of the peculiarities that make the forest environment unique. Experts indicated that we do not need supporting teaching aids and modern digital technologies in this education. It must be said that the teacher himself has a crucial role in this process with his didactic skills, personal involvement, often beyond work responsibilities and his positive attitude towards environmental education, forest, perhaps also forestry and the work of a forester. Similar requirements apply also to the lecturer of environmental education from the external environment. On the other hand, as the results of the research revealed, for the success and effectiveness of environmental education, it is necessary to avoid teachers' formality and a lack of critical thinking when selecting activities. There is also no place for education based on instructions, without examples of real activities in a real environment. This reaffirms the need to illustrate subject matters in the real environment

It has to be reminded that the degree of risk from the point of view of environmental education educators, specifically forest pedagogy, is the insufficient number of qualified lecturers, the amount of time they can devote to these activities and certain restrictions on the part of the employer for the implementation of activities. Other factors that have emerged, could be certain restrictions on visiting the forest because of logging or other forestry activities. When entering the forest, it is necessary to think about increased safety of children, in terms of cleanliness of the environment, for example in the form of garbage or the lack of infrastructure in the forest for rest. However, experts did not consider this aspect to be that important. Similarly, they did not consider the need to finance the transport of children to the forest or the importance of the owner's consent to enter the forest, to be significant. The research results showed that the biggest risk for education in the forest appears to be its availability to kindergarten.

We can therefore state that the forest is a suitable place for the implementation of environmental education of preschool children, regardless of formal or non-formal environmental education. The research results also showed that the connection of formal and informal concepts has a synergistic effect. It is crucial to know the positive and negative aspects entering the process of education in all directions and to have effective concepts that will be able to enter this process. Miňová (2005) also points out that the possibilities of implementing environmental education in pre-school education are wide. From learning about scientific practices through observation, exploring the collecting and processing of information, to developing critical thinking and decision making.

3 Conclusion

One of the offered alternatives of effective environmental education in both school and out-of-school environment can be forest pedagogy. The core of forest pedagogy is learning about the forest ecosystem and educating people to a sustainable way of life on the example of the forest. It is based on experiential learning, sensory perception and a holistic approach to personality development. A forest teacher as an educator or lecturer of environmental education can be a helpful guide who can share wisdom and experience, while not robbing the child of

the process of his own research, knowledge and the experience in the forest itself. In the future, such an approach to education can also help to build and strengthen the child's value system, such as respect and responsibility for nature and the environment, as well as love and empathy for the living organisms and people around us. With its attractiveness and unique elements, the forest environment plays an important role in the process of education and personality formation, which was also shown by our research. In addition, a stay in the forest brings also other benefits. Cervinka et al. (2014) emphasize that the physical and emotional benefits of staying in nature are strongly reflected in childhood experiences. For the development of children, it is necessary to pay attention to nature. Materials, colors, shapes and scents are extremely important to them. Adults often go to nature, if they have become familiar with nature as children.

Literature:

1. BAKER, J., LOVELL, K., HARRIS, N. 2006. How expert are the experts? An exploration of the concept of 'expert' within Delphi panel techniques. In: *Nurse Res.* 2006. 14 (1). p. 59–70. [cit. 2020-03-10]. Available: <https://journals.rcni.com/doi/abs/10.7748/nr2006.10.14.1.59.c6010>
2. CERVINKA, R. et al. 2014. *Green Public Health - Benefits of Woodlands on Human Health and Well-being.* Wien: BFW-Berichte 147/2014. 85p. ISBN 978-3-902762-36-8.
3. CIAŁKOWSKA, M., ADAMOWSKI, T., PIOTROWSKI, P., KIEJNA, A. 2008. What is the Delphi method? Strengths and shortcomings. In: *Psychiatria Polska.* 2008. 42(1): p. 5-15. [cit. 2020-03-05]. ISSN 2391-5854. Available: <http://www.psychiatriapolska.pl/2008-42-1.html>
4. CABOUN, V. 2008. *Les a ekosystém.* Zvolen: Národné lesnícke centrum. 52p.
5. ELIAS, P. 2010. Ecosystem Services and Quality of Human Life in Rural Areas. In: *Životné Prostredie.* 2010, Vol. 44, No. 2, p. 88 – 91. ISSN 2585-7800.
6. GOODMAN, C. M. 1987. The Delphi technique: a critique. In: *Journal of Advanced Nursing.* 1987. 12: p. 729-734. [cit. 2020-05-03]. Available: <https://doi.org/10.1111/j.1365-2648.1987.tb01376.x>
7. HASSON, F., KEENEY, S., & McKENNA, H. 2000. Research guidelines for the Delphi survey technique. In: *Journal of Advanced Nursing.* 2000. 32(4). p. 1008-1015. [cit. 2020-03-10]. ISSN-0309-2402. Available: https://Delphi/Hasson_delphi.1365-2648.2000.t01-1-01567.x.pdf
8. IMASHEV, G., KUANBAYEVA, B., YELEZHANOVA, S. 2020. Innovative Approaches to the Development of Environmental Education in High School. In: *AD ALTA Journal of Interdisciplinary Research.* 10/01-X, 2020. p. 22-26. [cit. 2020-10-10]. ISSN 246-6733.
9. KOLLAROVA, D. 2018. Potenciál lesnej pedagogiky v primárnom vzdelávaní. In: *Slavonic Pedagogical Studies Journal.* Vol. 7, No. 1. 2018, pp. 155 – 162. ISSN 1339-8660.
10. LYNN, M. R., LAMAN, E. L., ENGLEBARDT, S. P. 1998. Nursing administration research priorities: a national Delphi study. In: *Journal of Nursing Administration.* 1998. 28(5), p. 7-11. [cit. 2020-03-10]. Available: 10.1097/00005110-199805000-00002
11. MARUSAKOVA, L. et al. 2010. *Lesná pedagogika ako súčasť environmentálnej výchovy na Slovensku - Konceptia rozvoja.* Zvolen: Národné lesnícke centrum, 2010. 65p. ISBN 978-80-8093-126-1.
12. MARUSAKOVA, L., SALLMANNSHOFERET, M., et al. 2019. *Human Health and Sustainable Forest Management.* Bratislava: Forest Europe, Liaison Unit. 2019, p.169. ISBN 978-80-8093-265-7.
13. McKENNA, H. P. 1994. The Delphi technique: a worthwhile approach for nursing? In: *Journal of Advanced Nursing.* 1994. 19(6), p. 1221-1225. [cit. 2020-03-10]. Available: <https://doi.org/10.1111/j.1365-2648.1994.tb01207.x>
14. MINOVÁ, M., GMITROVA, V., KNAPIKOVA, Z., MOCHNACOVA, H. 2005. *Environmentálna výchova v materskej škole.* Prešov: Rokus. ISBN 80-89055-53-2.
15. NOVAK, J. et al. 2007. Současné procesy ovlivňující sociálně prostorovou diferenciaci České republiky. In: *Urbanismus a územní rozvoj.* 2007. X, (5). [cit. 2020-04-10]. Available: http://www.natur.cuni.cz/ksgrrsek/urrlab/user/documents/default/diferenciace/clanek_UUR.pdf.
16. PALAN, Z. 2002. *Lidské zdroje – Výkladový slovník.* Praha: Academia, ISBN 80-200-0950-7.
17. ROD, A. 2012. Likertovo škálování. In: *Electronic journal for philosophy.* Praha. ISSN 1211-0442.
18. SARVASOVA, Z. et al. 2016. *Vybrané príklady lesnej pedagogiky zo Slovenska a Nórska.* Zvolen: Národné lesnícke centrum, 2016, 152p. ISBN 978-80-8093-216-9.
19. *Správa o lesnom hospodárstve v Slovenskej republike za rok 2019 – Zelená správa.* 2020. Zvolen: Ministerstvo pôdohospodárstva a rozvoja vidieka SR, Národné lesnícke centrum. 68p. ISBN 978-80-8093-316-6.
20. *Štátny vzdelávací program pre predprimárne vzdelávanie v materských školách.* 2016. Ministerstvo školstva, vedy, výskumu a športu SR. Bratislava: Štátny pedagogický ústav. 2016. 2016-17780/27322:1-10A0. 112p. [cit. 2020-04-10]. Available: https://www.statpedu.sk/files/articles/nove_dokumenty/statny-vzdelavaci-program/svp_materske_skoly_2016-17780_27322_1-10a0_6jul2016.pdf
21. VINCIKOVA, S., a kol. 2015. *Environmentálna výchova ako priestor pre rozvoj intelektovo nadaných žiakov.* Bratislava: Strom života. 2016. 167p.
22. WARDEN, C. 2012. *Nature Kindergartens and Forest Schools.* Fowlis Wester : Mindstretchers Ltd. 2012. pp. 263. ASIN B0081SJSR4.

Primary Paper Section: A

Secondary Paper Section: AM, EH

THE PROCESS OF FINANCIAL PERFORMANCE EVALUATING OF THE COMPANY

^aANNA JACKOVÁ

University of Žilina, Univerzitná 8215/1, 010 26 Žilina
email: ^aAnna.Jackova@pd.uniza.sk

This paper has been written the support of VEGA 1/0544/19 – Formation of the methodological platform to measure and assess the effectiveness and financial status of non-profit organizations in the Slovak Republic.

Abstract: Evaluation of the company's financial performance is a key and irreplaceable tool of the company's financial management, because the aim of the evaluation is to look for ways to improve the company's financial performance and thus manage and increase its competitiveness. Every company should have its own evaluation process, which is important not only for the data collection itself. It also affects the analysis itself, implementation into the company and presentation to stakeholders.

Keywords: Financial performance, traditional methods of financial performance evaluation, modern methods of financial performance evaluation.

1 Introduction

Today, the market is dominated by high competitiveness of companies. Since Slovakia's accession to the European Union, the economy has undergone changes that complicate business conditions in Slovakia. "Only those companies that respond flexibly to these changes in the business environment, which do not rely on current performance, but are looking for a way to continuously increase it will be successful. One of the main goals of financial management of companies can therefore be generally formulated as a continuous increase in company performance. The growth of a company's performance presupposes its effective evaluation and management based on its repeated measurements," (Pavelková, Knápková, 2009, p. 13).

In a way, every company monitors its financial performance at least once a year. Traditional methods of the financial performance evaluation of a company are becoming less and less effective, so it is necessary to implement the so-called modern methods of company performance evaluation to its management.

2 Financial performance of the company

Renowned economists define a company's performance as follows: "A company's performance is its ability to enhance the resources invested, generate profits, increase the value of the company and at the same time it is the ability to secure future development," (Wagner, 2009, p. 17). "The company's performance is the efficiency of the inputs transformation of the company's transformation process into outputs, while the obvious form of its manifestation is the company's financial situation. It is a phenomenon that predetermines the outputs (results) of the company, but at the same time it also results in them," (Zalai, 2010, p. 271). "Company's performance is the ability of a company to achieve the desired effects or outputs, preferably in measurable units. With this statement, the issue of performance is divided into two issues, namely:

1. What are the required outputs?
2. How to evaluate (and how to measure) their performance (in what units of measurement)?" (Lesáková, 2007, p. 22).

The most important part of company's performance is the financial performance of the company. "Financial performance is traditionally measured by value criteria, which are constructed on the basis of data from financial statements, with the greatest emphasis on generating profit using the resources obtained," (Fibířová, 2005, p. 7). Profit is thus one of the strategic goals of the company, but it is not the main goal. "It is a means to achieve the main goal and a measure of the evaluation of the company's economic results. Nevertheless, it cannot be considered as the only criterion that would comprehensively evaluate the company," (Živělová, 2007, p. 17).

3 Methods of evaluating the financial performance of the company

The literature presents a wide range of financial indicators, which can be used to evaluate the financial performance of the company. Among the most common indicators that characterize the company's performance in the financial perspective are indicators of traditional and modern methods of evaluating the company's financial performance.

Traditional methods are mainly based on profit maximization. The explanatory ability of traditional indicators is based on the display of information achieved in previous periods and thus do not provide an objective view of the potential growth of the company's financial performance in the future. Therefore, in assessing the future success of the company, modern methods of evaluating the financial performance of the company are also used, because modern indicators prefer to measure the performance of the company in terms of increasing its value. In particular, information is needed to assess a company's financial performance. The predominant share of information sources is represented by the financial statements of financial accounting, but above all by the data contained in the financial statements.

The financial statements of the company inform about the conditions under which the reproduction process took place, what was its course and results. A lot of important information can be obtained from a relatively small space. The data on the company's activities are factually, temporally and formally correct. The method of preparation of the financial statements, its structure and the statements that make it up depend on whether the company accounts in the system of single or double-entry bookkeeping. Businesses of greater economic importance are generally required to account in the system of double-entry bookkeeping, which is often referred to as financial accounting. Its aim is to quantify the economic result of the company.

The double-entry financial statements consist of the balance sheet, the profit and loss statement and the notes. The balance sheet provides information on the company's assets and financial resources for its coverage, which characterizes the conditions under which the reproduction process took place. The profit and loss statement provides information on the income, expenses and profit or loss of the company, broken down by economic and financial activity. The notes contain information that explains and supplements the data in the balance sheet and profit and loss statement. From the point of view of the company's analysis, the cash flow statement is particularly relevant. It informs about the income and expenses of the company and their difference, i.e. the state of financial resources. Its need is due to the fact that in some cases the revenues of the company does not equal the income, the costs do not equal the expenses, and thus the economic result may not be (and usually is not) identical with the cash available to the company.

3.1 Traditional methods of financial performance evaluation

Traditional methods of evaluating the financial performance of a company use only financial analysis. Its subject is the financial situation of the company. "Financial analysis is used to comprehensively assess the financial situation of the company. It helps to determine whether the company is sufficiently profitable, whether it has a suitable capital structure, whether it uses its assets efficiently, or whether it is able to repay its liabilities on time. Ongoing knowledge of the company's financial situation allows managers to make the right decisions in obtaining financial resources, in determining the optimal financial structure, in the allocation of free financial resources, in the provision of business loans and in the distribution of profits," (Knápková, Pavelková, Šteker, 2013, p. 23). The aim of financial analysis is to use financial data to evaluate the past and

current performance of the company and to assess its sustainability.

The most used methods of financial analysis include cross-sectional methods (technical and fundamental analysis) and elementary methods (analysis of absolute indicators, analysis of difference indicators, analysis of ratio indicators and analysis of summary indicators).

3.1.1 Cross - sectional methods

Technical analysis and fundamental analysis are part of the cross-sectional methods of financial analysis of a company.

Technical analysis

"Technical analysis uses mathematical, mathematical-statistical and other algorithmic methods for quantitative processing of economic data with subsequent qualitative economic assessment of results. In this sense, financial accounting is a suitable database, it provides information in quantitative, numerical form, in a uniform language of business communication," (Bartošová, 2020, p. 37).

Fundamental analysis

"Fundamental analysis is based on a large amount of information, processes qualitative data, but also uses quantitative information, from which it draws conclusions without the use of algorithmic procedures. The analyses are based on extensive knowledge of the interrelationships between economic and non-economic phenomena, on the experience of experts, but often also on the direct participants in economic processes and on their subjective estimates. The process of fundamental analysis is specific to each individual company and depends on the subjective attitude of the analyst. For this reason, too, there is no single concept or methodology governing the process of its implementation. Fundamental analysis considers several factors that illustrate the situation of the company and therefore it is appropriate to carry it out at the same time as technical analysis, which does not have such a wide scope, but has standardized procedures for company evaluation," (Bartošová, 2020, p. 38).

3.1.2 Elementary methods

Elementary methods are considered simpler in terms of mathematical procedures used (especially arithmetic and percentage) and in terms of ease of thought, respectively. trying to describe complex things simply. These include the analysis of absolute indicators, the analysis of difference indicators, the analysis of ratio indicators and the analysis of summary indicators.

Analysis of absolute indicators

Absolute indicators can be analysed using horizontal and vertical analysis. Horizontal analysis is often referred to as trend analysis. It is based on comparing the items of individual statements in several periods. The analysis is more readable if the development of items is expressed by the difference between the data of two adjacent years or by the index of year-on-year changes of these data. "Vertical analysis, also called percentage analysis, is the expression of individual items in the financial statements as a percentage of a single selected basis. For the analysis of the balance sheet, the total value of assets or liabilities is usually chosen as the basis, and for the analysis of the profit and loss statement, it is the size of total revenues or costs," (Knápková, 2010, p. 66).

Analysis of difference indicators

Differential indicators are mainly used to analyse and manage the financial situation of the company with an orientation towards its liquidity. The difference indicators include net working capital (total current assets - total current liabilities), net cash (ready cash - liabilities payable immediately) and net cash assets (total current assets - inventories - liabilities payable immediately).

Analysis of ratio indicators

Ratio indicators are the most popular method of financial analysis. They provide a quick and inexpensive picture of the basic characteristics of the analysed company. "Such basic characteristics include, for example:

- turnover (activity indicators),
- liquidity (liquidity ratios),
- financial structure, indebtedness (indebtedness indicators),
- profitability (profitability indicators),
- position on the capital market (market value indicators).

Each basic characteristic is expressed in the analysis by several ratio indicators, which always indicate it from a different point of view," (Kotulič, 2010, p. 58).

Activity indicators show the commitment of capital in various forms of assets. They make it possible to express, quantify and analyse how efficiently a company uses its assets. Adequate use is a condition of a balanced financial situation.

Liquidity indicators provide information on solvency, i.e. liquidity of the company. In essence, they compare the amount of what can be paid (indicator numerator) with what needs to be paid (indicator denominator). The liquidity of a particular asset expresses the ability of that asset to be converted into cash quickly and with the lowest possible loss.

Indebtedness indicators are used to monitor the structure of the company's financial resources. They express the extent of the use of equity and debt to finance the needs of the company. The share of own and foreign resources affects the financial stability of the company. A high share of own resources provides the company with stability, independence, with their low share the company is unstable, market fluctuations and credit uncertainty can have serious consequences.

Profitability indicators are used to assess the company's ability to generate financial resources from its own operating activities for operations, to finance investments, to pay out profit shares and to repay payables. They express the result of the company's efforts, i.e. the efficiency of the company's work. They show the combined effect of liquidity, activity and indebtedness on the company's net profit.

Market value indicators express how the company is evaluated by investors. The construction of indicators allows the comparison of their values between individual companies in the market. The basic market value indicators include net earnings per share, return on shares from profit and dividend yield on shares.

Analysis of summary indicators

These include creditworthiness and bankruptcy models, which represent an aggregate characteristic (synthetic quantity), into which the financial indicators with the greatest telling power are summarized, while they are assigned the appropriate weight. They serve for quick orientation of investors and creditors, as well as to classify companies according to their quality (performance and credibility) into pre-specified categories. "There is no precise boundary between creditworthiness and bankruptcy models, as they have a lot in common and their result is a fixed evaluation coefficient. We find the difference only in the purposes for which they were created and in the input data that were used," (Sedláček, 2008, p. 109).

Creditworthiness models reflect the level of quality of the company according to its performance and are oriented to investors and owners. Bankruptcy models are intended primarily for creditors who are interested in the company's ability to repay its obligations.

"Models based on empirical-inductive systems of indicators, which mostly use the following methods, are increasingly used in the prediction of financial distress of a company:

1. method of one-dimensional discriminant analysis - it is a mathematical-statistical method that predicts the financial distress of the company on the basis of a simple characteristic, using a single indicator (for example Beaver test),
2. method of multidimensional discriminant analysis - it is a mathematical-statistical method that predicts the financial situation of the company through various combinations of simple characteristics, using a set of multiple indicators, which are usually assigned different weights (for example Altman's model, Taffler's model, Springate's model, Fulmer's model, Beerman's test, creditworthiness index, IN indices, CH-index),
3. method of point evaluation - predicts the financial development of the company using point scales, which are usually determined by expert methods (Quick test, Argenti's model)," (Kotulič, 2010, p. 113).

3.2 Modern methods of financial performance evaluation

Modern methods of evaluating the financial performance of the company were created on the basis of criticism of previous traditional methods. The reason was that most of them are based on accounting methods and procedures that do not always correspond to the economic view of the company's performance. Therefore, modern methods work not only in terms of accounting profit but also in terms of economic profit, the costs of which are made up not only of accounting costs but also of alternative costs, which are also called opportunity costs.

The most popular modern methods include the EVA (Economic Value Added), MVA (Market Value Added), Excess Return, Shareholder Value Added and, most recently, the Balanced Scorecard (BSC) methods.

EVA

The main task of the EVA method is to measure the economic profit of the company, which the company achieves when not only current costs are paid, but also the costs of foreign and especially own capital (equity). It tells about the internal performance of the company. The basic formula for the calculation is:

$$\text{EVA} = \text{NOPAT} - C * \text{WACC}$$

where:

EVA is Economic Value Added; NOPAT is Net Operating Profit After Tax; C is Capital; and WACC is Weighted Average Cost of Capital.

$\text{EVA} > 0$ means that the return on capital is greater than its price, and then the company creates value for its owners. $\text{EVA} < 0$ means that the revenue is less than the cost and the company destroys the value.

MVA

The MVA method measures the difference between the market value of a company and the value of invested capital. A prerequisite for the rational behaviour of the investor is an interest in increasing their wealth, and the difference between these two quantities expresses the value created.

While the previous EVA method measures a company's success over the past year, the MVA method is a look to the future that reflects market expectations about the company's prospects. The MVA can be calculated assuming that the market value of equity is known as follows:

$$\text{MVA} = \text{market value of equity} - \text{book value of equity}$$

There is also another way to calculate MVA:

$$\text{MVA} = \text{value of equity} - \text{total invested capital}$$

Excess Return

"The Excess Return method, like the MVA method, is based on market value. The following relationship is used for the calculation:

$$\text{Excess Return} = \text{actual value of wealth in period } n - \text{expected value of wealth in period } n$$

where:

- the actual value of the wealth corresponds to the future value of the benefits to the owners (the future value of the dividends paid, the shares repurchased and the market price of the share in the company at the end of the reference period),
- the expected value of the wealth expresses the value of the invested capital at the end of the reference period, which company should achieve at the investor's required return.

The advantage of Excess Return over MVA is the fact that it takes into consideration the investor's requirements for capital exaluation. Otherwise, it has the same shortcomings and its calculation is more complicated," (Pavelková, Knápková, 2009, p. 48).

Shareholder Value Added

Share value added (SVA) expresses the difference in the value of the company to shareholders at the end and at the beginning of the measured period. The value of the company to shareholders is derived from the present value of the forecast of future cash flows, processed for about 5 to 15 years, and from the residual value of the company at the end of the predicted period. The observed SVA values are comparable to the reference value, which is the market price of the company's shares. The performance of a company in this method is assessed solely from the perspective of the shareholder investing in equity.

BSC

The modern value approach to business performance management is the BSC method. "It's a strategic system for measuring performance, which together with the strategy interacts with at least four important components - financial, customer, internal business processes and learning and growth," (Varcholová, 2007, p. 146).

The main benefit of the BSC method is the extension and interconnection of measuring the performance of companies from purely financial indicators to indicators from other areas influencing the performance of the company - indicators of the driving forces of the future. The BSC method is an important communication tool for management, emphasizing that value and other indicators must be appropriately linked and transformed for managers at all levels of corporate governance. Managers should be informed in this way about the economic consequences of their own decisions, and thus motivated to influence them. It is a response to the increasingly criticized explanatory power of value criteria in measuring the performance of the company and assessing the success of its survival in the future. When implementing the BSC method, the benchmarking method also proved to be effective (copying and taking over experience from companies that work with this method with certain results).

4 Proposition of the process of evaluating the financial performance of the company

The proposed process for evaluating the financial performance of the company should serve to cover the identified deficiencies and thus ensure the minimization of losses during the accounting period. The previous chapters were devoted to traditional and modern methods of evaluating the financial performance of the company. The evaluated company must therefore be analysed by using these methods, to find out on the basis of which indicators the company evaluates its financial performance. It can be stated that companies mostly monitor their liquidity, or use some other indicators (for example profitability) of evaluation from

traditional methods. They do not use modern methods of evaluation at all, or minimally. But when assessing the financial performance of a given company, the environment in which it is located and in which it operates must not be forgotten. Therefore, it is necessary to analyse the internal and external environment of the company. Only in this way will the company obtain, for the purposes of evaluating its financial performance, the necessary information about its internal environment, external environment, the current state of its financial performance and its prediction for the future. The proposed process for evaluating the financial performance of a company consists of the following steps.

The first step is to collect the data itself. It covers how information is used in the company, what information sources are in it, then the emergence of new information and knowledge, their flows within the company and into its external environment. The proposed documents for the evaluation of the financial performance of the company include financial statements of the company, annual reports, various statistical data and internal material of the company.

The second step is the analysis of the internal environment of the company, which examines and evaluates its internal environment. The analysis of the internal environment of the company in a clear form shows its strengths and weaknesses. In this sense, they can represent strengths of skills, abilities and potential that will allow a company to gain a market advantage in the form of better products, better services or optimization of business processes. Therefore, it is necessary to analyse the organizational structure of the company, its production program and human and information resources.

The third step of the proposed process is the analysis of the external environment of the company, which also affects its performance. The external environment in which the company is located consists of two spheres, namely the macro-environment and the sectoral environment. Therefore, the company should use competition analysis, PEST analysis, Porter's model and SWOT analysis. An analysis of the competition is important for the company, as it can use its own criteria in which it can be compared with the competition. In the PEST analysis, the company can monitor the external influences that affect it. For a company, this means summarizing an overview of political, legislative, economic, technical, technological and social impacts. Porter's model represents market research for the company, which is necessary and provides informative value from five important areas. It is appropriate if the company displays the results from the Porter model in a transparent model, where the forces affecting the external environment will be shown. The last analysis of this step is a SWOT analysis, by which the company can reveal the strengths and weaknesses within the company, but also the threats and opportunities that come to it from the external environment.

The fourth step of the proposed process for evaluating the financial performance of a company is its financial analysis, as the basis of traditional evaluation methods. It is this analysis that will serve the company as a comprehensive basis for a more detailed assessment of the current financial situation and performance. Financial analysis also serves to determine the health of the company. With its help, the company is able to evaluate the past, present and precondition for the future. The aim of this analysis is to identify weaknesses that could lead to problems in the future and to identify strengths on which the company can build in the future.

The last step is to evaluate the financial performance of the company using some modern methods, which are listed in the previous chapter.

It is important that, after each analysis performed, conclusions are drawn with specific findings and measures in place so that negative impacts can be minimized. Only by honest analysis can a company gain a competitive advantage, reveal its shortcomings and increase its financial performance.

5 Conclusion

As already mentioned, financial performance has the most important position in the performance of a company. This is because it is a subjective measure of how well a company can use assets from its core business and generate income. This term is also used as a general measure of the overall financial health of a company for a given period.

It is increasingly difficult for companies to secure long-term success on the market. Only a company that is able to face changes in the business environment will gain a stable position on the market. Therefore, the evaluation of a company's financial performance becomes a key and irreplaceable tool for the financial management of any company in order to constantly look for ways to improve it in order to maintain long-term competitiveness.

"When evaluating the company's performance, two basic principles of finance must be respected:

- The euro gained today has a higher value than the euro we get tomorrow.
- The safe euro has a higher value than the risky euro," (Kotulič, 2010, p. 131).

Literature:

1. Bartošová a kol.: *Finančný reporting a analýza*. Žilina: Edis, 2020. 187 p. ISBN 978-80-5541-661-8.
2. Fibírová, J., Šoljaková, L.: *Hodnotové nástroje řízení a měření výkonnosti podniku*. Praha: ASPI, 2005. 263 s. ISBN 80-7357-084-X.
3. Kabát, L., Majková Sobeková, A., Baštinová, A.: *Účtovnictvo*. Bratislava: Ekonómia, 2013. 638 p. ISBN 80-8078-020-X.
4. Knápková, A.: *Finanční analýza: komplexní průvodce s příklady*. Praha: Grada Publishing, 2010. 205 p. ISBN 978-80-247-3349-4.
5. Knápková, A., Pavelková, D., Šteker, K.: *Finanční analýza: komplexní průvodce s příklady*. Praha: Grada Publishing, 2013. 236 p. ISBN 978-80-247-4456-8.
6. Kotulič, R., Király, P., Rajčániová, M.: *Finančná analýza podniku*. Bratislava: Ekonómia, 2010. 238 p. ISBN 978-80-8078-342-6.
7. Lesáková, L. a kol.: *Finančno-ekonomická analýza podniku*. Banská Bystrica: UMB, 2007. 208 p. ISBN 978-80-8083-379-4.
8. Pavelková, D., Knápková, A.: *Výkonnost podniku z pohledu finančního manažera*. Praha: Linde, 2009. 333 p. ISBN 80-86131-63-7.
9. Sedláček, J.: *Finanční analýza podniku*. Brno: Computer Press, 2008. 154 p. ISBN 978-80-251-1830-6.
10. Varcholová, T. a kol.: *Meranie výkonnosti podnikov*. Bratislava: Ekonóm, 2007. 168 p. ISBN 978-80-225-2421-6.
11. Wagner, J.: *Měření výkonnosti*. Praha: Grada Publishing, 2009. 256 p. ISBN 978-80-247-2924-4.
12. Zalaí, K. a kol.: *Finančno-ekonomická analýza podniku*. Bratislava: Sprint dva, 2010. 446 p. ISBN 978-80-89393-15-2.
13. Živělová, I.: *Podnikové finance*. Brno: Mendelova zemědělská a lesnická univerzita v Brně, 2007. 111 p. ISBN 978-80-7375-035-0.

Primary Paper Section: A

Secondary Paper Section: AH

USE OF AGRICULTURAL LAND CATEGORIES IN EU COUNTRIES

^{1a}KRISTINA KABOURKOVÁ, ^{1b}MAREK VOCHOZKA,
^{2c}JAROSLAV STUHLÝ

¹*Institute of Technology and Business, School of Expertness and Valuation, Okružní 517/10, 37001 Ceske Budejovice, Czech Republic*

²*Institute of Technology and Business, Faculty of Corporate Strategy, Okružní 517/10, 37001 Ceske Budejovice, Czech Republic*

email: ^akabourkova@mail.vstecb.cz, ^bvochozka@mail.vstecb.cz, ^cstuchly@mail.vstecb.cz

Abstract: In the introductory part, the authors deal with the importance of agricultural lands, its effect on water management, use of land in agriculture, the influence on the climatic conditions and the whole Earth's ecosystem, examining the system from the perspective of Czech accounting and IFRS. In the working part, the authors focus on the comparison of the state of used agricultural land in thousands of ha in the EU countries by individual categories using historical statistical data from Eurostat on the quantity and structure of used agricultural land. The authors present relevant time series in tables and graphs; the comparison of categories of land in individual EU countries was presented in the form of graph. There was made a comparison of individual EU countries by the size of used agricultural land per one inhabitant. In the conclusion part, trend function calculated for all EU countries is used to make prediction for individual categories of agricultural land for the year 2020.

Keywords: agricultural land, EU countries, categories of land, arable land, grassland, permanent grassland, prediction.

1 Introduction

The total area of the agricultural land fund in the CR as of 31 December 2017 was 4,205,288 ha, which accounts for 53.32% of the overall area of the land fund of the CR. To this date, the area of arable land was 2,958,603 ha (37.5% of the overall area of the land fund), in the case of hop gardens, it was 10,066 ha, 20,008 ha for vineyards, 164,815 ha for gardens, 45,245 ha for orchards, and 1,006,552 ha for permanent grassland (meadows, pastures). The area of forestry land was 2,671,659 ha (33.9% of the overall area of the land fund), water bodies 166,253 ha, build-up areas and courtyards 132,333 ha. Other areas occupied 711,464 ha; however, the amount of the land used for agricultural purposes is smaller.

Act No 334/1992 Sb. (Czech Republic, 1992a) on the Protection of Agricultural Land Fund governs the protection of the land in the Czech Republic, stipulating that the agricultural land fund involves the fundamental natural heritage of our country, irreplaceable means for production and one of the essential components of the environment. It comprises cultivated lands (arable land, hop-fields, vineyards, fruit orchards, gardens, meadows and pastures) and temporarily barren land, fish or waterfowl breeding ponds, barren land necessary for agricultural production (dirt roads) irrigation water tanks, anti-erosion terraces etc. The Act governs that the non-agricultural purposes should primarily use barren land (building gap sites etc.) (Slábová, 2006). Unfortunately, today's practices incline to break this law, leading to building public and private structures mostly on the agricultural land. Most parts of the total area do not enjoy adequate cultivation regarding the size of the individual fields, not providing separation by ever-green baulks that would form vital bio corridors for ecological stability.

Devising large-area systems resulted in mutually unconnected small-sized woods. The technology of up-to-date agriculture is not eco-friendly and poses a high risk of damaging the environment (Gremlica et al., 2002).

The agricultural land mostly involves arable land (fields), meadows and pastures, fruit orchards, vineyards and hop fields. Arable land refers to an area for growing crops. The article aims at analysing the current structure of used agricultural land in the EU countries by comparing historical data and revealing the necessity for a continuous change in the system and composition of the land. The Eurostat data will also determine linear trend functions for individual EU countries and all basic categories of

cultivated land to predict values of respective time series for the year 2020.

2 Literature research and used data and methods

Soil is the outermost layer of the Earth's crust, consisting of water, air, regolith, organic matter and living organisms. It originates from the transformation of inorganic and organic substances, serving as a natural habitat of fauna and flora, and ceases to exist by erosion. Soil evolves very slowly; one-centimetre Earth's crust can form up to hundreds of years. Humanity has always depended on cultivating soil as it has been a source of food and various non-productive and ecosystem functions.

Soil enables plant growth, retains and uses water, contributes to the hydro-thermal balance of the atmosphere, regulates gas exchange between land and atmosphere, allows nutrient and substance exchange, contributes to the environment, covers the Earth and provides the place for building.

Although the global population may use roughly 87 million km² of land, the human factor has irreversibly damaged its substantial part, which led to its degradation. Urban areas have the most profound influence on the evolution of soil and its quality. The soil decline and destruction mean a big problem for humanity, unfortunately leaving politicians and other important persons unconcerned.

People often have no other but to harm the nature from, sometimes allegedly, economic necessity. As an example may serve a situation when poor peasants in Brasil have been burning down tropical rainforest to raise soya and breed livestock. It is, unfortunately, the general philosophy of today's consumer society (CSO, 2018).

The truth is that a human being substantially contributes to the soil degradation, removing natural vegetation (mostly for building reasons), mining, dumping or harmfully cultivating (monocultures, excessive spraying, lack of organic matter, using heavy mechanisms etc.). These bad practices have penetrated on a global scale – developing and developed countries. As humanity has dismally failed to use the land carefully and efficiently, the soil is subject to bit-by-bit degradation and prevented from expanding, leading to mortal danger of the human species (Šimek et al., 2019).

What poses the essential global issue is soil desertification (transforming fertile land into the barren desert), disintegrating social systems and causing migration from the affected territory. In 1992, the OSN introduced the Convention to Combat Desertification to the countries stricken by severe drought or desertification. The treaty aims to provide humanitarian aid in afflicted territories – mostly in Africa. The Convention came to force in 1996; the CZ ratified the agreement in 2000 (Slábová, 2006).

Yet, we need to say that large international organizations have not seriously dealt with the issue of soil degradation, which is the biggest threat to this essential constituent of the environment. No sooner than in 2015 did the OSN summon the General Meeting to tackle this problem, assessing the Earth's crust condition. Document Status of the World's Soil Resources employed about 200 scientists from 60 countries, including the Czech Republic. The analysis considers erosion and expanding built-up areas in Europe as the fastest growing menace (Protection of the Nature, 2020).

Europe is a continent that strongly depends on the land outside its territory. The land area of the EU is about 640 million hectares per year, i.e. 1.5 times more than the overall size of all member countries. The Czech Republic uses another 18,500 km² outside its borders, i.e. roughly 44% of its agricultural land, not

including consumption of raw materials such as cotton, metals etc. The average EU member uses about 1.3 ha of land per year, which is six times more than the total population of Bangladesh. Such an insatiable European demand for land has a massive disastrous impact on the environment, politics and social life (Soil Atlas, 2018).

The Czech Republic currently faces severe drought, fundamentally caused by deforestation, destroying groves and concreting the landscape. The intense water drain from roofs, industrial areas, public places and roads straight to the sewerage (the whole procedure does not include water-accumulating land) and temperature rise involving increased water vapour currently pose enormous problems.

The soil in the Czech Republic has lost the ability to soak and retain water, as heavy downpours wash away its most fertile layer. Approximately 20 million tonnes of arable land disappear every year, thus reducing its capacity to preserve water equal to 6 millions m³ of water per year, which is total consumption of roughly 130,000 people (De Luce, 2020).

Soil constitutes an integral part of the environment with a large scale of functions – multifunctionality, which involves, in terms of human needs, three groups: utility, environmental and cultural. The utility function serves as an essential production tool in agriculture and forestry, giving rise to crops and forest fruits, produces a space for human activities (housing, recreation, life etc.), economic use (constructions, infrastructure, dumping etc.) and provides invaluable natural resources.

From all kinds of erosion, water erosion presents the deadliest threat to the land in the Czech Republic. Due to the intensified agricultural production in the past, the Czech Republic has the hugest land blocks in Europe, which only leads to even more severe water erosions. National land redistribution involved massively removing hydrographic and other landscape elements, destroying baulks, grassing valley lines, dirt roads, liquidating luxuriant vegetation that effectively reduced rapid erosion. (Ministry of Agriculture, 2018).

Soil sealing directly relates to uncontrolled sprawling (suburbanization) and currently, together with erosion, poses an enormous problem to agricultural land. Soil sealing means covering the area with impermeable materials, causing that the soil loses its natural properties and is unable to perform its essential functions. What brings about soil sealing is relatively low plot prices, when investors prefer building on a greenfield rather than using built-up city area or renovating older buildings (brownfield). (Ministry of Agriculture, 2018).

The recent decades have seen intense pressure on exempting agricultural lands from the land fund with the prospect of subsequent development. This step is, however, irreversible, because it prevents our society from a commodity of ever-increasing value (Polanecký et al., 2018).

Doc. Hruška from Global Change Research Institute of Academy of Science claims that industrial agriculture uses large amounts of artificial fertilizers and pesticides (in the event of the CZ, the situation applies to vast fields without ecological elements such as baulks, meadows, wetlands and alleys), leading to the loss of biodiversity and water contamination caused by nitrogen-pesticides chemical compounds. Industrial agriculture as such shall thereby not draw on public funds due to its unsustainability and damage caused to the public property. Based on this situation, renowned scientists (coordinated by Dr Guy Pe'er from German Centre for Integrative Biodiversity Research iDiv in Leipzig) appeal in People and Nature Magazine to the European Parliament, member states of the EU and the European Commission to adopt ten emergency measures aiming at sustainable food production, preserving biodiversity and mitigating climatic changes (Czech Society for Ornithology, 2020).

The Civil Code defines the land as real property, and according to Czech accounting, regulations shall be reported and evaluated

independently with no possibility of depreciation. The plot involves areas not only above but also beneath the surface, including constructions built on the land, subject to temporary structures and vegetation on the parcel. The building parcel does not comprise engineering networks (water pipelines, sewerage, power networks etc.). The buying party shall divide the purchasing price into a part relating to building and concerning the land parcel. What applies here is the proportional distribution provided by an expert and a professional evaluation of the land using, e.g. price maps (Ryneš, 2019).

Lands are always long-term tangible assets irrespective of valuation unless sold as a commodity. The valuation involves forest grasslands and trees and bushes not integrated into the cultivation of permanent vegetation.

The accounting and tax viewpoint also draws a line between the land and the parcel. The land refers to the Earth's surface detached from neighbouring parts by a boundary of administration unit or boundary of cadastre unit, real property boundary, possession, land type etc. The parcel means a land determined by a planimetric survey point and depicted and designated by a land parcel number in the cadastral map.

The land can be bargained by purchase, gratuitous acquisition, deposit from another person, or transferred pursuant to the effective legislation, or transferred from private enjoyment to business purposes. The accounting case is discharged as of the date of the delivery of the proposal for filing to the cadastre. (Sagit, 2020)

International Accounting Standards IAS 16 define lands as tangible assets held by the accounting unit for uses in the production, supplying or services, so that they could be rented to other persons, or for administrative purposes for enjoyment in the duration of exceeding one period. Lands recognized as assets are evaluated through purchase costs, including the purchasing price and taxes. Lands of which the real value can be precisely determined after the recognition are reported in the revaluated amount that complies with the real value to the date of the revaluation after deducting accumulated losses from the reduced value. Revaluation should be performed on the regular basis, so that the accounting value is not significantly different from the real value, determined at the end of the accounting period. The real value of the land is usually calculated from the market price recommended by a qualified expert (Oswald, 2020). VAT Act does not explicitly define term 'land', only stating that pursuant to the cadastral law, the land refers to an Earth's surface sector limited by means listed in the real property cadastre. The boundaries are either natural, or made by a human. The Civil Code defines the land as a land recorded in the real property cadastre with allocated land parcel number.

Lands in the territory of the Czech Republic recorded in the real property cadastre are liable to the property tax, subject to lands composed of protective woods and special-purpose woods or lands used for the protection of the CZ (Czech Republic, 1992b). The analytical part examines historical data comparing the structure of the currently used agricultural land according to categories within individual EU countries and throughout the European Union. Specific member states of the EU are explored in terms of their average value UAA per inhabitant. Calculated linear trend functions predict agricultural activities regarding land categories for all member states of the EU and, also, the total sum for the whole EU.

The applied statistical tools involve tables, diagrams and charts of descriptive statistics and intermediate time series resources. Calculations suggested in tables and diagrams were elaborated by Excel Program (Chajdiak, 2013, Stuchlý, 2015).

3 Results

Immediate time series represent historical data on the size, structure and development of the used agricultural land. The analyses thereby involve conventional methods of calculating and interpreting some of the numeral characteristics of time series

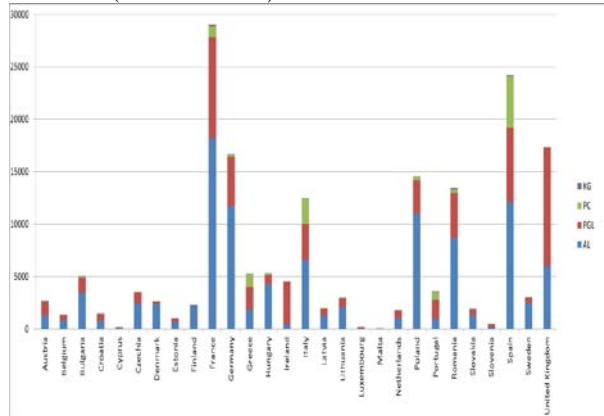
and their average values, depicted or illustrated in tables and charts. Eurostat collects data on the structure and development of Utilized Agricultural Area by Categories in 2007–2018 in EU countries in thousands of ha. The Utilized agricultural area (abbreviated as UAA) describes the area used for farming. It includes the following land categories: arable land (AL); permanent grassland (PGL); permanent crops (PC); other agricultural land such as kitchen gardens (KG) even if they only represent small areas of total UAA. The term does not include unused agricultural land, woodland and land occupied by buildings, farmyards, tracks, ponds, etc. Table 1 and Figure 1 comprise up-to-date data on general categories of agricultural land from the last season of 2018.

Table 1. Up-to-date general categories of the used agricultural land in thousands of ha in EU countries in 2018

Land	UAA	AL	PGL	PC	KG
Austria	2653.84	1327.15	1258.81	66.87	1.02
Belgium	1356.08	856.83	479.64	19.62	0
Bulgaria	5030.28	3463.67	1399.04	152.73	14.84
Croatia	1485.65	803.9	607.56	72.34	1.85
Cyprus	131.94	104.3	1.59	26	0.05
Czechia	3523.22	2489.99	990.09	42.35	0.78
Denmark	2632.5	2389.8	212.7	30	0
Estonia	1004.21	679.15	311.76	4.1	9.19
France	29020.16	18229.91	9593.99	1044.79	151.48
Germany	16645.1	11730.9	4713.4	199.4	1.4
Greece	5288.05	1849.64	2171.27	1258.8	8.34
Hungary	5343.78	4333.7	799.28	173.37	37.43
Ireland	4516.04	449.94	4064.21	1.88	0
Italy	12484.98	6544.69	3482.73	2425.52	32.04
Latvia	1937.9	1294.8	634.8	8.3	0
Lithuania	2947.23	2113.28	794.97	31.07	7.91
Luxembourg	131.56	62.28	67.71	1.56	0.01
Malta	11.58	9.23	0	1.27	1.08
Netherlands	1822.4	1020.79	763.79	37.82	0
Poland	14539.55	11009.21	3149.87	352.57	27.9
Portugal	3591.42	919.18	1876.94	778.96	16.33
Romania	13413.74	8685.63	4288.41	341.06	98.64
Slovakia	1919.54	1347.77	523.55	17.52	30.7
Slovenia	477.93	172.98	277.17	27.78	0
Spain	24201.91	12125.53	7037.37	4924.94	114.07
Sweden	3000.39	2541.99	455.14	3.25	0
United Kingdom	17357	6044	11277	36	0
EU	178739.9	104842.84	61256.89	12083.27	556.86

Source: Eurostat (2020).

Figure 1. Actual Values (in year 2018) of Utilized Agricultural Area in EU (in thousand of ha)

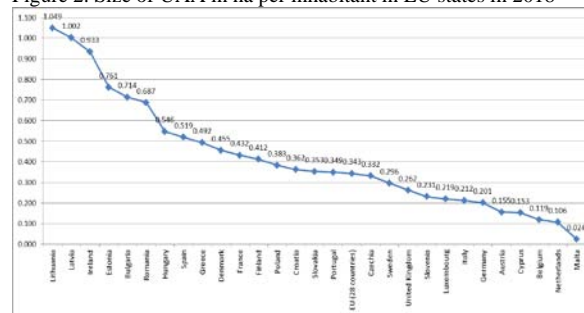


Source: Authors.

The suggested data on individual EU countries represent time series reflecting the condition of the used agricultural land in thousands of ha in 2018. Largest countries (France, Spain, Great Britain and Germany) show the highest values of the used agriculture land; on the other hand, small states (Malta, Luxembourg, Cyprus and Slovenia) indicate the lowest rates. The CZ enjoys 3,523.22, Slovakia 1,919.54 and the whole EU 178,739.88 thousands of ha of agricultural land.

Upon analysing data about the population in EU countries (Eurostat, 2018), we can compare EU countries according to the average size of UAA per inhabitant in 2018. Figure 2 suggests the results.

Figure 2. Size of UAA in ha per inhabitant in EU states in 2018



Source: Authors.

Countries with higher UAA/inhabitant values (in ha per inhabitant) heavily focus on agricultural production (Lithuania 1.049 and Latvia 1.002), as contrasted to states with lower UAA/inhabitant rates, which are either smaller, or more concerned with industry (Malta 0.02, The Netherlands 0.11, Belgium 0.12). The CZ reflects the average value 0.33, Slovakia 0.35 and the EU as a whole 0.34 ha/inhabitant.

Owing to a different size of individual nations, a method of relative percentage breakdown is more suitable to identify individual land categories from the overall used agricultural land (see Table 2 and Figure 3).

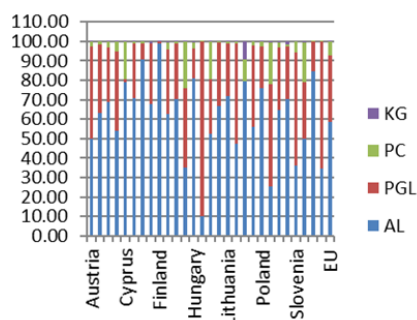
Table 2. Distribution of general categories of the used agricultural land in 2018 (in % from UAA) in EU countries

Land	AL	PGL	PC	KG
Austria	50.01	47.43	2.52	0.04
Belgium	63.18	35.37	1.45	0.00
Bulgaria	68.86	27.81	3.04	0.30
Croatia	54.11	40.90	4.87	0.12
Cyprus	79.05	1.21	19.71	0.04
Czechia	70.67	28.10	1.20	0.02
Denmark	90.78	8.08	1.14	0.00
Estonia	67.63	31.05	0.41	0.92
Finland	98.71	1.06	0.15	0.08
France	62.82	33.06	3.60	0.52
Germany	70.48	28.32	1.20	0.01
Greece	34.98	41.06	23.80	0.16
Hungary	81.10	14.96	3.24	0.70
Ireland	9.96	89.99	0.04	0.00
Italy	52.42	27.90	19.43	0.26
Latvia	66.81	32.76	0.43	0.00
Lithuania	71.70	26.97	1.05	0.27
Luxembourg	47.34	51.47	1.19	0.01
Malta	79.71	0.00	10.97	9.33
Netherlands	56.01	41.91	2.08	0.00
Poland	75.72	21.66	2.42	0.19
Portugal	25.59	52.26	21.69	0.45
Romania	64.75	31.97	2.54	0.74

Land	AL	PGL	PC	KG
Slovakia	70.21	27.27	0.91	1.60
Slovenia	36.19	57.99	5.81	0.00
Spain	50.10	29.08	20.35	0.47
Sweden	84.72	15.17	0.11	0.00
United Kingdom	34.82	64.97	0.21	0.00
EU	58.66	34.27	6.76	0.31

Source: Authors.

Figure 3. Classification of individual categories of agricultural land in EU countries (in % of UAA)



Source: Authors.

Finland (98.71%), Denmark (90.78) and Hungary (34.82%) have the largest area of arable land; on the other hand, Ireland (9.96%), Portugal (25.59%), The United Kingdom (34.82%) shows the lowest numbers of the respective land. The area of the CZ is 70.67%, Slovakia is 70.21 and the whole EU amounts to 58.66%.

The largest proportional grassland area is in Ireland (89.99%), The United Kingdom (64.97%) and Slovenia (57.99%), while the smallest proportion involves Malta (0%), Finland (1.06%) and Cyprus (1.21%). The grassland area of the CZ is 28.10%, Slovakia 27.27% and the EU 34.27%.

The largest proportional area of permanent crops is in Greece (23.80%), Portugal (21.69%) and Spain (20.33%), whereas the smallest proportion falls to Ireland (0.04%), Sweden (0.11%), and Finland (0.15%). The area of the CZ is 1.20%, Slovakia 0.91% and the EU 6.76%.

The largest proportional area of kitchen gardens is in Malta (9.33%), Slovakia (1.60%) and Estonia (0.92%), while no kitchen gardens exist in Belgium, Denmark, Ireland, Latvia, The Netherlands, Sloveni, Sweden and The United Kingdom. The area of kitchen gardens in the CZ is 0.02% and the EU 0.31%.

Historical data from Eurostat website for 2020 involve linear trend functions of the intermediate value prediction of individual time series according to all categories of the used agriculture land for all EU countries and their summarized values. If data tables lacked some values, trend functions employed only a specific continuous time series (including without limitations kitchen gardens category). Table 3 compiles the predictions, including The United Kingdom, which is not a part of the EU any longer and as such its values can be deduced from the total.

Table 3. Predictions of values of the general categories comprising the used agricultural land in 2020 (in thousands of ha) in EU countries by the linear trend

Land	UAA	AL	PGL	PC	KG
Austria	2448.96	1321.05	1062.18	65.99	0.14
Belgium	1327.66	841.76	468.95	18.11	0.00
Bulgaria	4987.34	3661.77	1192.57	122.66	11.42
Croatia	1561.09	821.88	670.47	68.34	1.61
Cyprus	113.32	89.35	1.61	22.33	0.05

Land	UAA	AL	PGL	PC	KG
Czechia	3480.92	2444.96	993.11	42.42	0.43
Denmark	2611.69	2353.72	220.99	37.08	0.00
Estonia	1032.31	703.44	316.39	4.00	8.50
Finland	2267.98	2204.30	23.40	2.98	1.60
France	28295.88	17972.69	9183.33	1006.68	139.98
Germany	16567.53	11734.42	4631.18	201.32	0.61
Greece	5564.31	1895.99	2330.80	1326.39	7.30
Hungary	5140.91	4257.27	679.65	166.97	16.49
Ireland	4484.86	453.83	4029.51	2.18	0.00
Italy	12686.08	6423.69	3117.51	2476.62	26.63
Latvia	1953.75	1306.22	640.55	7.03	0.00
Lithuania	3073.69	2296.54	736.07	33.17	7.92
Luxembourg	131.40	62.81	67.03	1.54	0.01
Malta	12.20	9.66	0.00	1.24	1.31
Netherlands	1774.44	1021.01	717.08	38.41	3.88
Poland	13960.52	10453.55	3116.80	382.85	25.27
Portugal	3616.98	918.27	1902.46	782.19	14.06
Romania	13534.25	8626.15	4498.39	309.64	100.07
Slovakia	1913.32	1351.10	515.16	15.29	29.31
Slovenia	473.84	171.99	273.65	28.21	0.00
Spain	23476.17	12145.20	6475.90	4770.20	114.06
Sweden	2980.70	2532.54	442.01	3.59	0.00
United Kingdom	17191.58	6097.18	11054.28	37.23	0.00
EU sum	176663.69	104172.32	59361.02	11974.68	510.65

Source: Authors.

The largest share from the category of the used agricultural land includes arable land and permanent grassland. In most countries, kitchen gardens involve time series indicating a lot of missing values. The most extensive use of arable land is the most evident in France (about 18 mils. ha) and Spain (about 12.1 mils. ha). The grassland is again the most predominant in France (roughly 9.2 mils. ha) and Spain (6.5 mils. ha), disregarding Great Britain. The CZ enjoys about 2.4 mils. ha of the used arable land and approximately 1 mil. ha of grassland. The total number in the whole EU amounts to roughly 98 mils. ha of the used arable land and about 48.3 mils. ha of grassland.

4 Conclusions

The article aimed at comparing the current situation (in thousands of ha) of the used agricultural land in 2007–2018 in individual EU countries (and the whole EU) regarding the respective classification. The analysis involved the comparison of specific EU countries according to the average value of the used agricultural land in ha per inhabitant. The final table suggests predictions of categories of the used arable land for 2020 in all EU countries, based on the linear trend of separate time series.

References

- Chajdiak, J.: *Štatistika jednoducho v Exceli [Statistics simply in Excel]*. Bratislava: Statis. 2013. ISBN 978-80-85659-740.
- CSO: *Bedřich Moldan: Nejničivější je konzumně orientovaná civilizace [Bedřich Moldan: The most destructive is consumer-oriented civilization]* [online] 2020. Available at: <https://www.czso.cz/csu/stoletistatistiky/bedrich-moldan-nejnicivejsi-je-konzumne-orientovana-civilizace>
- Czech Republic: *Zákon č. 334/1992 Sb., o ochraně zemědělského půdního fondu v pozděj. znění [Act No. 334/1992 Coll., On the protection of agricultural land in the later words]*. 1992a.
- Czech Republic: *Zákon č. 338/1992 Sb., o dani z nemovitých věcí v pozděj. znění [Act No. 338/1992 Coll., On real estate tax in later words]*. 1992b.
- Czech Society for Ornithology: *Intenzivní zemědělství ničí krajinu, upozorňuje 3600 vědců a žádá nápravu [Intensive agriculture is destroying the landscape, warns 3,600 scientists]*

- and calls for redress] [online] 2020. Available at: <https://www.birdlife.cz/intenzivni-zemedelstvi-nici-krajinu-upozornuje-3600-vedcu/>
6. De Luce: *Čím je způsoben nedostatek vody? [What causes water shortages?]* [online] 2020. Available at: <https://voda235.webnode.cz/cim-je-zpusoben-nedostatek-vody/>
7. Eurostat: *Eurostat – Your key to European statistics* [online] 2020. Available at: <https://ec.europa.eu/eurostat/tgm/table.do?tab=table&init=1&plugin=1&language=en&pcode=tag00025>
8. Eurostat: *First population estimates: EU population up to nearly 513 million on 1 January 2018* [online] 2018. Available at: <https://ec.europa.eu/eurostat/documents/2995521/9063738/3-10072018-BP-EN.pdf/ccdfc838-d909-4fd8-b3f9-db0d65ea457f>
9. Gremlica, T., Jech, K., Kušková, P., Pražan, J., Rättinger, T., Třebický, V.: *Předpoklady udržitelného rozvoje zemědělství v ČR [Assumptions of sustainable development of agriculture in the Czech Republic]*. V rámci projektu “K udržitelnému rozvoji ČR – vytváření podmínek. Hospodářské sektory a environmentální integrace” [Within the project “Towards Sustainable Development of the Czech Republic - Creating Conditions. Economic sectors and environmental integration”]. 2002. ISBN 80-238-8378(X).
10. Ministry of Agriculture: *Situační a výhledová zpráva půda – 2018 [Situation and outlook report soil – 2018]*. *Ministry of Agriculture of the Czech Republic* [online] 2018. Available at: http://eagri.cz/public/web/file/611976/SVZ_Puda_11_2018.pdf. ISBN 978-80-7434-476-3.
11. Oswald: *Mezinárodní účetní standard 16 [International Accounting Standard 16]* [online] 2020. Available at: https://www.ucetni-portal.cz/stahnout/ias-16-cz_843.pdf
12. Polanecký, L., Caha, Z., Kabourková, K., Pártlová, P., Soběhart, R., Stellner, F., Straková, J., Váchal, J., Vochozka, M., Vokoun, M.: *Primární sektor v Jihočeském kraji v 21. Století [Primary sector in the South Bohemian region in the 21st century]*. Lüdenscheid, Germany: RAM – Verlag. 2018. ISBN 978-3-942303-75-0.
13. Protection of the Nature: *Kulér – Zprávy, aktuality, zajímavosti [Kulér - News, news, interesting facts]* [online] 2020. Available at: <https://www.casopis.ochranaprirody.cz/kuler-zpravy-aktuality-zajimavosti/>
14. Ryněš, P.: *Podvojně účetnictví a účetní závěrka 2019 [Double entry accounting and financial statements 2019]*. Olomouc: Anag. 2019. ISBN 978-80-7554-192-5
15. Sagit: *Účetní průvodce má dát [The accounting guide has to give]* [online]. 2020. Available at: <https://www.madati.cz/info/delfinuctytxt.asp>
16. Šimek, M. et al.: *Živá půda [Living soil]*. Prague: Institute of Soil Biology Center of the ASCR. Academia. 2019. ISBN 978-80-200-2976-8.
17. Slábová, M.: *Ochrana a tvorba životního prostředí [Protection and creation of the environment]*. České Budějovice: study text. 2006.
18. Soil Atlas. 2018. *Atlas půdy: Fakta a čísla o zemi, půdě a životě [Soil Atlas: Facts and figures about the earth, the soil, and life]*. Prague: Heinrich-Böll-Stiftung a Geopolis. ISBN 978-80-88289-08-1.
19. Stuchlý, J.: *Statistické analýzy dat [Statistical data analysis]*. České Budějovice: Institute of Technology and Business. 2015. ISBN 978-80-7468-087-8.

Primary Paper Section: A

Secondary Paper Section: AH

EXPERIENCE EDUCATION TO ALLEVIATE FEARS OF EDUCATOR CANDIDATES IN THEIR UNIVERSITY STUDIES

^aAGÁTA CSEHI, ^bKATALIN KANCSZÉ NAGY, ^cANITA TÓTH-BAKOS

J. Selye University, Bratislavská cesta 3322, 945 01, Komárno, Slovakia

email: ^acsehiovaa@ujssk, ^bkancznenagyk@ujssk, ^ctothbakosa@ujssk

Abstract: An intensive piece of research has been conducted at the Teacher Training Faculty of J. Selye University since 2017 to investigate the drop-out conditions of university students. We compared the results of these studies to some indicators of recent international studies. Based on the findings so far, we have outlined a set of procedures that are expected to enhance students engagement with and through university studies, and to assist them in the areas of social relationships, learning, curriculum development, and personality development. Our goal is, first and foremost, to reduce early school leaving, to help students integrate into university life, to complete their university studies successfully and, last but not least, to prepare mature personalities for the teaching profession.

Keywords: dropout, personality, self-confidence, self-image, self-confidence, vocation

1 Introduction

An intensive piece of research has been conducted at the Teacher Training Faculty of J. Selye University since 2017 to investigate the drop-out conditions of university students. Surveys on the topic were carried out at four higher education institutions. First at Selye János University (Komárno, Slovakia) and at three other institutions, namely II. Rákóczi Ferenc Hungarian University of Transcarpathia (Beregsk, Ukraine), the Christian Partium University (Oradea, Romania) and the Faculty of Hungarian Language Teacher Training at the University of Novi Sad (Subotica, Serbia). We compared the results of these studies to some indicators of recent international studies. Based on the findings so far, we have outlined a set of procedures that are expected to enhance students engagement with and through university studies, and to assist them in the areas of social relationships, learning, curriculum development, and personality development. To accomplish this, we plan to use the tools of experiential education by classifying an optional personality development course in higher education. Our goal is, first and foremost, to reduce early school leaving, to help students integrate into university life, to complete their university studies successfully and, last but not least, to prepare mature personalities for the teaching profession.

Early school leaving is one of the most pressing issues in education in recent years. Churn is a phenomenon in practice and a defined concept in the literature. It is a complex and multidimensional process that is exploring the causes of this in a growing number of investigations both domestically and internationally (Kenderfi 2011, Stiburek 2017, Jungert 2015, Frey 2014, Şahin 2014, Houssemand-Meyers 2013, Larsen et al. 2013, Faria 2012, Charmaraman-Hall 2011, Jacot et al. 2010, Wudu-Getahun 2009). To get to the end, the Ratio Research Group, founded in 2017, at The Teacher Training Faculty of Selye János University started its research. The first studies were carried out among the students of Selye János University of Komárno, and continued at three other institutions of higher education in the Carpathian Basin, namely at II. Rákóczi Ferenc Hungarian University of Transcarpathia (Beregszász, Ukraine), the Christian University of Partium (Oradea, Romania) and the Hungarian Language Teacher Training Faculty of the University of Novi Sad (Subotica, Serbia)¹. We used standardized and proprietary measuring instruments, tests and questionnaires as measuring instruments. The results obtained were compared with the results of the latest research published in the international

literature. Following the analysis, we drew the necessary conclusion, which is based on the outline of our plans and proposals to be implemented in pedagogical practice.

2 Procedure, realization, results of the investigation

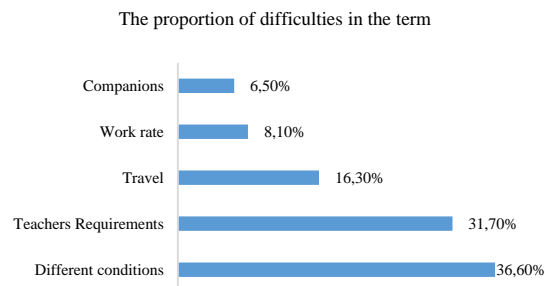
The first phase of our longitudinal research was represented by a pilot study in the school year 2107/2018². The Ratio research team, which conducted the study series, chose the specific way of achieving the objectives, according to which the students' opinion was the primary source. In the initial phase, information was collected with 123 first-year teacher students at J. Selye University through a questionnaire survey after the end of the first semester. Some of the questions concerned the personal background of the students (family, study conditions, life situation), the other focused on the difficulties experienced during the first semester and the first exam period and the mapping of the helping circumstances³. We have been paying close attention to the difficult circumstances that may hinder the successful completion of university studies. Our questions on this aspect included:

- 1) What difficulties did you have during the semester in completing your studies?
- 2) What was the difficulty in meeting the requirements during the exam period?

From the results obtained it can be seen that in the case of clusters formed among the answers to the questions, the majority of the clusters show a relation to some person. Concerning the clusters of difficulties, the qualitative analysis of the answers reveals that the different circumstances, clusters, are due to reasons related to the people living in the students' environment and this applies to both the diligence and the exam period. The percentages of difficulty for students in their term of study were as follows, in descending order:

Different conditions:	36.6%
Teachers Requirements:	31.7%
Travel:	16.3%
Work rate:	8.1%
Companions:	6.5%

(Graph 1)



Graph 1: Percentage of learning difficulties reported by first-year teacher students during the term

Percentages of student reported difficulties during the exam period:

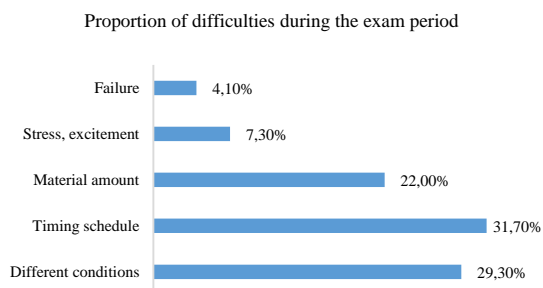
1. Different conditions:	29,3 %
2. Timing schedule:	31,7 %
3. Material amount:	22,0 %
4. Stress, excitement:	7,3 %
5. Failure:	4,1 %

¹ The results of the research and the resulting conclusions have been made public in several scientific publications. For example: Horváth-Tóth 2018; Horváth-Tóth 2019; Horváth 2018; Kanczné Nagy 2019; Kanczné Nagy-Csehi 2018; Kanczné Nagy-Tóth 2018; Nagy-Horváth-Szabóová-Kanczné-Nagy 2018; Nagy-Horváth-Szabóová-Kanczné-Nagy-Orsovics-Strédl 2019; Nagy-Szabóová-Horváth-Kanczné-Tóth-Bakos-Orsovics-Strédl 2018; Tóth-Bakos 2018; Tóth-Bakos-Tóth 2018;

² Horváth 2018; Kanczné Nagy-Tóth 2018; Nagy-Horváth-Szabóová-Kanczné Nagy 2018; Nagy-Szabóová-Horváth-Kanczné-Tóth-Bakos-Orsovics-Strédl 2018; Tóth-Bakos 2018;

³ The questionnaire survey was conducted with the help of Moodle system in order to optimize the collection of information and data processing.

(Graph 2)

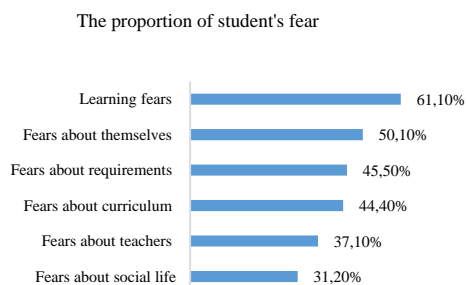


Graph 2: Percentage of learning difficulties reported by first-year teacher students during the exam period

From the results of this initial phase of our research, we concluded that interpersonal factors and human relationships play an important role in the early years of first-year college education, but there are other objective factors that are noteworthy.

In the next phase of our research, in the 2018/2019 academic year, we conducted a questionnaire survey with freshly enrolled first-year teacher students prior to commencement of their university education, and further expanded our studies to connect three further Carpathian Basin higher education institutions to J. Selye University in Komárom. Namely, II. Ferenc Rákóczi University of Transcarpathia (Beregszász, Ukraine), Partium Christian University (Oradea, Romania) and University of Novi Sad at Hungarian Language Teacher Training Faculty (Subotica, Serbia). As part of our comprehensive research, we conducted a background questionnaire that asked students about the amount and quality of their prior studies, as well as the challenges they face in their new, changed lifestyles, in addition to their family and home environment. As an integral part of this, we asked them to formulate their expectations and fears about university education. We asked the students' opinions on seven areas. These seven areas are the result of the pilot study mentioned above, according to which students' perceptions of the quality of their relationship to these seven factors influence the success or failure of their university careers. In order to shed light on the latter, we have focused on the fears, uncertainties, and anxieties of students, which are important factors in the process of university integration and successful university studies. Based on the cumulative results, students had high scores on their fears about social life (31.20%), fears about teachers (37.10%), fears about curriculum (44.40%), fears about requirements (45.50%). They have outstanding fears about themselves (50.10%) and have extremely high levels of learning fears (61.10%).

(Graph 3)



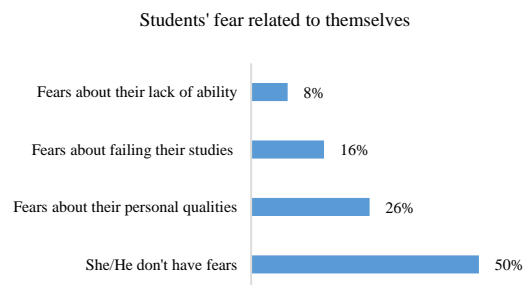
Graph 3: Areas of fear of first-year students and their results showing in percentage

Based on the results obtained, in the next phase of the study, we identified the two areas that produced the highest rates. These

are students' fears about themselves and their fears about learning.

Fears about themselves were expressed by half of the respondents that is 50%, in various respects. 26% of students have fears about their personal qualities, 16% have fears about failing their studies and 8% have fears about their lack of ability.

(Graph 4)



Graph 4: The results of the students' fears related to themselves

Quantitative indicators are also reinforced and supported by students' verbal revelations, which primarily reflect their fears about themselves and their learning. Such as "I'm afraid I can't offer as much as I want; I'm afraid of a lot of things, I'm brave; I won't stand it; I am afraid I can perform as expected; Will I be able to adapt?; I am most afraid of exhaustion."

The study participants' fears, which show a significantly high percentage, were related to learning. Thus, the greatest fears of first-year teacher students are about learning (61.1%). They are particularly afraid of scheduling (39%) and of performance (37%), among whom they are often labeled as "failing, failing the exam, having to postpone". The next major fear factor was the curriculum itself (13%). (Chart 1)

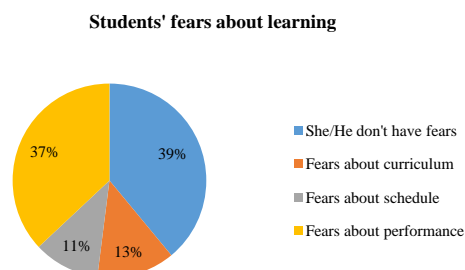


Chart 1: Results of testing students' fears about learning

Thus, the results of this phase of the study lead to the conclusion that particular attention should be paid to the fears, uncertainties, and anxieties of first-year teacher education students, whose indicators are significantly high for themselves and especially for learning.

3 Some results of international research, compared to results of our research

We have compared some of the survey results of the four presented higher education institutions internationally, with some new and current research results. We have included a comparative study of the aspects of the Ratio research group, namely the analysis of the fears and anxieties of university students, based on a representative study by Jean M. Twenge (USA 2017, Hungary 2018). This study is considered relevant because the author came to his conclusion based on 11 million interviews and comprehensive research from the American Freshman Survey, the American College Health Association, the Monitoring the Future, the General Social Survey, and Youth

Risk Behavior Surveillance System processed. Most of its surveys focused on the age group that is at the heart of our study, the "iGeneration"⁴ deriving from.

From the point of view of socialization, social relationships, learning, mental and emotional factors, it has illuminated the problems of our college students (also), their mental health. He pointed out that their fears are common, they struggle with insecurity, anxiety, depression, and their physical-mental-spiritual world is contradictory. (Twenge 2018) Twenge also draws attention to the American Freshman Survey, which focused on the mental and emotional health of university students. Indicators of change among first-year college students in 2009-2016 show significant growth. Based on these:

- mental problems and their mental health is below average: 18% increase;
- felt overwhelmed: a rise of 51%;
- wanted to start therapy: 64% increase;
- felt depressed: 95% increase (almost doubled). (Twenge 2018: 138)

Similar trends were reported in a study by the American College Health Association (ACHA) conducted between 2011 and 2016 with 400,000 students and around a hundred universities. From their results the following facts should be highlighted:

- college students are feeling overwhelmingly anxious;
- experiencing depressive states that block their actions and thinking - "they couldn't do anything" and anxiety and depression began to increase from 2013 onwards. (Twenge 2018: 138)

The qualitative and quantitative analysis of the information obtained so far and the comparison of the results obtained in the international context significantly reflect the fears, uncertainties, anxieties, lack of self-confidence, significant mental and psychological problems, the blocking of their actions and their thinking. In fact, they are suffering from depression, fear of not being able to perform well, failing to meet the criteria, failing the exam, confident in their own abilities and fears that they will not be able to integrate into the university community. These factors have been confirmed:

- i. Processed results of surveys conducted at J. Selye University,
- ii. In the results of surveys carried out in the four higher education institutions examined,
- iii. In the light of the results of our surveys and the indicators of the summarized international surveys.

4 The relationship between experience pedagogy and personal development

The results of the studies outlined clearly indicate that in addition to acquiring professional knowledge, university students need to develop their personality and enhance some of their qualities, as well as a personality-developing pedagogical approach that develops students' love for learning and enables them to meet the challenges of the present age. (Robinson 2018) Based on our research, the proven success of well-functioning tools in experience education can help us achieve our goals. Experiential pedagogy is an opportunity for education and development that can bring about a positive change in people on a practical level. It relies on action and its evaluation. In experience pedagogy, experience is a tool, so learning, development is the goal of all experiences, and the feeling of joy follows. Since there is no full motivation without the feeling of joy, one of the main drivers of adventure pedagogical activities is the "flow-flow experience", the joyful and adventurous immersion in the activity. (Csíkszentmihályi 2008, 2010) Thus, experience pedagogy seeks the experience, the joy in learning and the development of the individual, the experience of self-

confidence and success as a reward. It all comes hand in hand with a better mood, better performance, better problem solving, more creativity, better physical and mental health. (Seligman 2012)

The purpose of experience pedagogy is to learn through concrete, hands-on experience, not in the usual way, but in different situations involving experience. (Schörghuber, Amesberger, cit. Szabó 2006) Practical situations involve the individual from different perspectives, thus facilitating the coordinated action of the brain, heart and hands. (Mészáros-Bármai 2010) It provides colorful, diverse, versatile applications, and is well adapted and adapted to different programs, activities and topics. "Victory" is not the primary goal, but the experience, whether in individual or group performance. It is the basis of experience and experience in which the learners are in direct contact with their environment, nature and people. (Petlák-Fenyvesiová 2009)

The benefits of experiential pedagogy can be demonstrated in improving self-concept, developing social relationship skills, managing friendly relationships, promoting social behaviors, accommodating disadvantaged groups, changing the quality of teacher-student relationships, in which the teacher is the facilitator" (Horváth-Tóth 2018; Horváth-Tóth 2019). It is also important that attitudes towards school attendance also turn in a positive direction and strengthen the problem-solving ability of the young person, as he or she does not acquire ready knowledge, but acquires knowledge, experience and experiences in a variety of forms and situations.

5 Possibilities of adapting experience pedagogy to higher education

Summarizing the facts and aspects outlined above, it can be concluded that the application and adaptation of the elements of experience pedagogy is fully justified in higher education. In addition to acquiring academic knowledge, personality development is accomplished through an experience-based process of gaining experience. Both intellectual and emotional factors play an important role in the process of transferring knowledge (Strédl 2013). In addition, setting manageable challenges, the experience pedagogy enables the student to become even more positive and receptive in their work: – involuntarily and unconsciously – began to use their social skills more actively (e.g. cooperation, empathy, problem solving and decision making) that could be a crucial and helping factor in their university studies and relationships (Marosi 2017).

With all this in mind, and with the research findings that have been discovered so far, in the academic year 2019/2020, we will incorporate a personality development pedagogical approach into the training of students at J. Selye University that strengthens the students' engagement and they are also strengthened to build relationships (peer-to-peer and student-teacher) and, last but not least, contribute to the positive development of their personality. We are initiating an optional subject or course and the classification of a development course in university education. The planned course is structured around three subjects: art education, pedagogy and pedagogical psychology. Based on these, the development course called 'MŰ-PE-PSZI'⁵ (Figure 1) was chosen.

⁴ They were born after 1995. They grew up on a smartphone, had an Instagram page before they started high school and don't remember the days before the internet. They are all different from the generations before them. (Twenge 2018)

⁵ Phenomen MŰ-PE-PSZI in Hungarian language means „Művészet (in English is „Art”)-Pedagógia (in English is „Pedagogy”)-Pszichológia (in English is „Psychology)

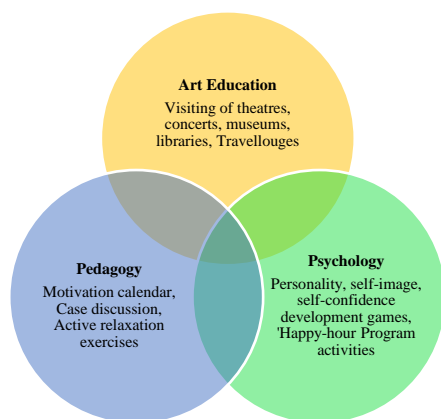


Figure 1: Contents of the 'MŰ-PE-PSZI' personality development course i.e. arts education, pedagogy and pedagogical psychology

In this course, experience pedagogy has a dual purpose. On the one hand, it strengthens the students' personality traits and positively develops their personality, and the application of experience pedagogy strengthens the problem-solving ability of young personalities because they do not acquire ready knowledge but broaden their knowledge through individual, such as smaller groups, spontaneous groups, variable composition groups, homogeneous or heterogeneous groups), within which factors such as the level of cooperation, interaction, motivation, mutual exemplification, or "adaptive education", play an important role. (Nádasí 2001). On the other hand, by acquiring applied experience-oriented pedagogical principles, teacher trainees themselves can apply modern methods, if they can become exemplary motivating teachers.

Important aspects of higher education and the Art-Pedagogical-Psychology course are:

Experiential forms, methods, techniques; experiential experience and learning; presentation, analysis, perception, emotional and emotional experience, experiencing, receiving experience reports; diversity and a creative atmosphere; stress relief and management; strengthening problem-solving capacity; students gain new knowledge through experience gained and experienced in each activity; developing reflective thinking through directed conversations; strengthening the capacity for collaboration and tolerance through group work and co-teaching; doubles and group activities improve communication skills; group activities contribute significantly to the development and positive development of relationship skills; knowledge of diverse, rich pedagogical methodologies, innovative, progressive methods through flow and positive psychology (Bagdy-Dezső 2018, Oláh 2012); positive psychology, flow as an emotional reward and profession-oriented motivation; an authentic, confident pedagogical personality.

Expected cumulative effects of the Art-pedagogical-psychological development course:

1. Harmonious personality development: self-confidence, effective self-expression, true self-esteem and the development of a credible self-image;
2. Development of communication skills: understanding and using diverse communication tools and channels, effective communication and self-expression;
3. Strengthening the capacity for collaboration, empathy, tolerance, first and foremost with the tools of the group;
4. Facing the difficulties of the teaching career with the help of situational exercises (difficulties of newcomers, generation differences in the educational board, career cycles, gender roles in the teaching career);
5. Commitment to studies and the teaching profession.

The success of the course will be monitored through a longitudinal study. For measurements and tests, we use standardized tests on the one hand and adapt them to particular conditions and conditions on the other. We use the Oxford Happiness Survey Questionnaire, the Hunopt Optimistic Test, the Assistive Attitude Measurement, the Coping Mode Preference Questionnaire for the juveniles, and the Experience Finding Degree test. To observe the changing factors, we also take into account the elements of sociometry, that is, the emotional functioning of the group, the acceptance (attraction) and the rejection (repulsion), and the levels of social network coexistence, cooperation and community life (Strédl 2017). Part of the tests and measurements will be done at the beginning and at the end of the course. Consequently, the results will be analyzed and compared and the conclusions will be drawn on the details.

6 Conclusions

The aim and content of the planned Art-Pedagogical-Psychological Development course focuses on the adaptation of experiential education and experiential learning to university education. Overall, experience-oriented activities have a significant impact on the development of the individual and the development of his or her mind, and ultimately on his or her whole personality. In addition, creative assignments and experiential assignment systems forge groups into a cohesive team, reinforcing friendship and social bonding. They also have a positive impact on relationships and on the staff at the institution. According to the studies of the relationship between experience pedagogy and positive psychology, it is necessary to emphasize the positive side of life, experiences and emotions, because with the help of positive experiences one is capable of successful self-realization, his / her coping skills are more powerful. (Bredács 2018)

Literature:

1. BAGDI, B. – DEZSŐ, A.: *Boldogságóra. A pozitív pszichológia lehetőségei a fiatalok személyiségfejlesztésében 14-20 éveseknek*. Budapest: Mental Focus Kiadó, 2018. ISBN 978-963-12-3870-9
2. BREDÁCS, A.: *A pozitív pszichológia pedagógiai és művészetpedagógiai aspektusai és a pozitív irányzat mozgalommá válása az oktatásban*. Iskolakultúra, 27. évf., 2018/1-2.
3. CSEHI, A. – KANCSZÉ NAGY, K.: Az élménypedagógia helye és szerepe a felsőoktatásban. Neveléstudományi kutatások a Kárpát-medencei oktatási térben. A IV. Kárpát-medencei Oktatási Konferencia tanulmánykötete. Nagyvárad, 2018. P. 362-363. ISBN 978-80-8122-310-5
4. CSÍKSZENTMIHÁLYI, M.: *FLOW. Az áramlat. A tökéletes élmény pszichológiája*. Budapest: Akadémiai Kiadó, 2010. ISBN 963-05-7770-4
5. CSÍKSZENTMIHÁLYI, M.: *Kreativitás a flow és a felfedezés avagy a találerő pszichológiája*. Budapest: Akadémiai Kiadó, 2008. ISBN: 978-963-05-8646-7
6. FARIA, C. – FREIRE, S. – GALVÃO, C. – REIS, P. – BAPTISTA, M.: *Students at risk of dropping out: how to promote their engagement with school science?*, Science Education International, 2002. Vol.23, No.1, March 2012, 20-39.
7. FREY, A – BALZER, L. – RUPPERT, J. J.: *Transferable competences of young people with a high dropout risk in vocational training in Germany*. Int J Educ Vocat Guidance, 2014. 14:119–134 DOI 10.1007/s10775-013-9257-8
8. HEGYI-HALMOS, N.: *Az iskolai pályaeorientáció szerepe és gyakorlata a hazai köznevelési intézményekben. A pedagógusok vélekedései a pályaeorientáció iskolai szerepéről a gimnáziumokban*. 2016. http://ppktest.elte.hu/file/Hegy_i_Hal mos_Nora_dissz.pdf
9. CHARMARAMAN, L. – HALL, G.: *School dropout prevention: What arts-based community and out-of-school-time programs can contribute*. New Directions For Youth Development, Supplement, 2011. Wiley Periodicals, Inc. Published online in Wiley Online Library: wileyonlinelibrary.com. DOI: 10.1002/yd.416

10. CLAUDE HUSSEMAN, RAYMOND MEYERS: *The Role of Parenting in Dropping Out of School: Contributions and Limits of Qualitative Research Methods*. 2013. Procedia - Social and Behavioral Sciences 89 523 – 528, Published by Elsevier Ltd. Open access under CC BY-NC-ND license.
11. HORVÁTH, K. – TÓTH, P.: *Interakciós stílusról alkotott nézetek vizsgálata pedagógushallgatók körében. Új kihívások és pedagógiai innovációk a szakképzésben és a felsőoktatásban*, A VIII. Trefort Ágoston Szakképzés- és Felsőoktatás-pedagógiai Konferencia tanulmánykötete, 2018. P. 21-55. ISBN 978-963-449-148-4
12. HORVÁTH, K. – TÓTH, P.: *Milyen az ideális tanári interakció a pedagógushallgatók szerint?* Oktatás – Gazdaság – Társadalom, Hera Évkönyvek VI., 2019. P. 389-408. ISBN 978-615-5657-03-0. ISSN 2064-6755
13. HORVÁTH, K.: *A hallgatói elégedettség mérésének pilot kutatása a Selye János Egyetem Tanárképző Karán*. Kutatás és innováció a Kárpát-medencei oktatási térben: 3. Kárpát-medencei Oktatási Konferencia. Tanulmánykötet: 3. Kárpát-medencei Oktatási Konferencia. Nagyvárad: Partiumi Keresztény Egyetem, 2018. [CD-ROM]. P. 648-666. ISBN 978-963-449-115-6
14. JACOT, A. – FRENAY, M. – CAZAN, A. M.: *Dropout of adult learners returning to university: interactions of motivational and environmental factors*. Bulletin of the Transilvania University of Braşov, 2010. Vol. 3 (52) https://www.researchgate.net/publication/49583740_Dropout_of_adult_learners_returning_to_university_interactions_of_motivational_and_environmental_factors
15. JUNGERTA, T. – ALMA, F. – THORNBERG, R.: *Motives for becoming a teacher and their relations to academic engagement and dropout among student teachers*. Journal of Education for Teaching: International research and pedagogy, 2015. 40:2, 173-185, DOI: 10.1080/02607476.2013.869971
16. KANCZNÉ NAGY, K. – CSEHIOVÁ, A.: *Elsőéves tanár szakos hallgatók egyetemi képzéssel kapcsolatos előzetes elvárásainak és félelmeinek vizsgálata, körében. Új kihívások és pedagógiai innovációk a szakképzésben és a felsőoktatásban*, A VIII. Trefort Ágoston Szakképzés- és Felsőoktatás-pedagógiai Konferencia tanulmánykötete, 2018. P. 56-65. ISBN 978-963-449-148-4
17. KANCZNÉ NAGY, K. – TÓTH, P.: *„Azért vannak a jóbarátok ...” avagy, a lemorzsolódás-kutatás pilot vizsgálatának eredményei a Selye János Egyetemen*. Kutatás és innováció a Kárpát-medencei oktatási térben: 3. Kárpát-medencei Oktatási Konferencia. Tanulmánykötet: 3. Kárpát-medencei Oktatási Konferencia. Nagyvárad: Partiumi Keresztény Egyetem, 2018. [CD-ROM]. P. 733-759. ISBN 978-963-449-115-6.
18. KANCZNÉ NAGY, K.: *„Minden új ember egy rejtély, amelyen dolgoznunk kell.”* Oktatás – Gazdaság – Társadalom, Hera Évkönyvek, 2019. VI. P. 290-311. ISBN 978-615-5657-03-0. ISSN 2064-6755
19. KENDERFI, M.: *Pályaorientáció*. Szent István Egyetem, 2011. https://www.tankonyvtar.hu/hu/tartalom/tamop412A/2010-0019_palyaorientacio/ch01.html
20. MALENE RODE LARSEN, HANNA BJØRNØY SOMMERSEL, MICHAEL SØGAARD LARSEN: *Evidence on Dropout Phenomena at Universities*. Danish Clearinghouse for Educational Research, 2013. <https://edu.au.dk/en/research/research-areas/danish-clearinghouse-for-educational-research/>. ISBN 978-87-7684-916-0.
21. MAROSI, R.: *Combining Literature and Drama Techniques to Enhance Learners' Language and Social Skills*. In: A Selye János Egyetem 2017-es "Érték, minőség és versenyképesség - 21. század kihívásai" Nemzetközi Tudományos Konferenciájának tanulmánykötete: Humántudományi szekciók. Komárno, Szlovákia: Selye János Egyetem, 2017. P. 289-300. ISBN 978-80-8122-223-8
22. MÉSZÁROS, V. – BÁRNAI, Á.: *Az élménypedagógia egy lehetséges meghonosítási módja gyermekotthoni közegben*. Szakirodalmi áttekintés és kezdeti tapasztalatok. In: Új pedagógiai szemle, 2010. 60/1-2.
23. M. NÁDASI, M.: *Adaptívitás az oktatásban*. Pécs: Comenius Bt., 2001. ISBN 978-963-9795-07-5
24. NAGY, M. – HORVÁTH, K. – SZABÓOVÁ, E. – KANCZNÉ NAGY, K.: *Elsőéves hallgatók véleménye a tanári kompetenciákról körében. Új kihívások és pedagógiai innovációk a szakképzésben és a felsőoktatásban*, A VIII. Trefort Ágoston Szakképzés- és Felsőoktatás-pedagógiai Konferencia tanulmánykötete, 2018. P. 56-65. ISBN 978-963-449-148-4
25. NAGY, M. – HORVÁTH, K. – SZABÓOVÁ, E. – KANCZNÉ NAGY, K. – ORSOVICS, Y. – STRÉDL, T.: *A lemorzsolódás vizsgálata a Selye János Egyetem tanárképző karán a nappali és levelezős övpedagógus képzésben utánkövetéssel*. Oktatás – Gazdaság – Társadalom, Hera Évkönyvek, 2019. VI. P. 23-33. ISBN 978-80-8122-333-4
26. NAGY, M. – SZABÓOVÁ, E. – HORVÁTH, K. – KANCZNÉ NAGY, K. – TÓTH-BAKOS, A. – ORSOVICS, Y. – STRÉDL, T.: *A lemorzsolódás okainak vizsgálata a harmadéves övpedagógus hallgatók körében*. Kutatás és innováció a Kárpát-medencei oktatási térben: 3. Kárpát-medencei Oktatási Konferencia, Tanulmánykötet: 3. Kárpát-medencei Oktatási Konferencia. Nagyvárad: Partiumi Keresztény Egyetem, 2018. [CD-ROM] P. 909-929. ISBN 978-963-449-115-6
27. OLÁH, A.: *A pozitív pszichológia világa*. Budapest: Akadémiai Kiadó, 2012. ISBN 9789630592062
28. PETLÁK, E. – FENYVESIOVÁ, L.: *Interakcia vo vyučovaní*. Bratislava: Vydavateľstvo Iris, 2009. ISBN 9788089256310
29. ROBINSON, K. – ARONICA, L.: *Kreatív iskolák*. Budapest: HVG Kiadó Zrt., 2018. ISBN 978-963-304-551-0.
30. ŞAHİN, M.: *The Relationship between Instructors Professional Competencies and University Students*. School Engagement, Educational Sciences: Theory & Practice, 14(2) 581-584 Educational Consultancy and Research Center, 2014. www.edam.com.tr/estp DOI: 10.12738/estp.2014.2.2003
31. SELIGMAN, M.: *Az optimista gyermek*. Budapest: Akadémiai Kiadó, 2012. ISBN 9789630592697
32. STIBUREK, Š. – VLK, A. – ŠVEC, V.: *Study of the success and dropout in the higher education poli-cy in Europe and V4 countries*. Hungarian Educational Research Journal 2017, Vol. 7(1) 43–56, DOI: 10.14413/herj.2017.01.04. ISSN 2064-2199.
33. STRÉDL, T.: *A szociális kompetencia professzionális dimenziói*. Új kihívások a tudományban és az oktatásban – Nové vyzvy vo vede a vo vzdelávaní. SJE Nemzetközi Tudományos Konferenciája – Medzinárodná vedecká konferencia UJS. Komárno, 2013. szeptember 17–18. P. 281-288. ISBN 978-80-8122-073-9
34. STRÉDL, T.: *Inkluzív pedagógia: avagy a gyógypedagógiáról másképp*. Komárno: Univerzita J. Selyeho, 2013. ISBN 978-80-8122-089-0.
35. STRÉDL, T.: *TERÁPIÁK ÉS NEVELÉS. A terápia szocializációs hatása a nevelésben*. Komárno: Univerzita J. Selyeho, 2017. ISBN 978-80-8122-227-6.
36. SZABÓ, G.: *Az Outdoor módszer alkalmazásának lehetőségei a tanácsadásban. Kalandterápiás beszámoló*. Budapest: ELTE PPK Tanácsadás Szakpszichológus Képzés, 2016.
37. TÓTH-BAKOS, A.: *A lemorzsolódás-kutatás pilot vizsgálatának eredményei a Selye János Egyetemen*. Kutatás és innováció a Kárpát-medencei oktatási térben: 3. Kárpát-medencei Oktatási Konferencia. Tanulmánykötet: 3. Kárpát-medencei Oktatási Konferencia. Nagyvárad: Partiumi Keresztény Egyetem, 2018. [CD-ROM]. P. 717-732. ISBN 978-963-449-115-6
38. TÓTH-BAKOS, A. – CSEHIOVÁ, A.: *Music and Brain - Music Training Transfer*. INTED 2016 Proceedings: 10th International Technology, Education and Development Conference. Valencia. USB. WoS. 2016. P. 1726-1732. ISBN 978-84-608-5617-7. ISSN 2340-1079
39. TÓTH-BAKOS, A. – DANISOVÁ, V.: *Pozitív fegyelmzés*. Zborník z medzinárodnej vedeckej konferencie Univerzity J. Selyeho, 2014: "Vzdelávanie a veda na začiatku XXI. storočia" - Sekcie pedagogických vied. Komárno: Univerzita J. Selyeho, 2014. P. 240-248. ISBN 978-80-8122-103-3
40. TÓTH-BAKOS, A.: *Music Education and Music Therapy*. INTED 2016 Proceedings: 10th International Technology, Education and Development Conference. Valencia. P. 1643-1652. ISBN 978-84-608-5617-7. ISSN 2340-1079

40. TWENGE, J. M.: *IGen: why today's super-connected kids are growing up less rebellious, more tolerant, less happy-- and completely unprepared for adulthood (and what this means for the rest of us)*. New York: First Atria books hardcover edition, NY: Atria Books, 2017. ISBN 9781501151989

41. TWENGE, J. M.: *iGeneráció, akik a közösségi médián és okostelefonon nevelkedtek*. Budapest: Édesvíz Kiadó, 2018. ISBN 9789635298723

42. WUDU MELESE – GETAHUN FENTA: *Trend and causes of female students dropout from teacher education institutions of Ethiopia: the case of Jimma University*. Ethiop. J. Educ. & Sc. Vol. 5 No. 1 September, 2009. ISSN 1998-8907 DOI: 10.4314/ejesc.v5i1.56309

Primary Paper Section: A

Secondary Paper Section: AM

WELFARE STATE VS. WARFARE STATE

^aMILAN KATUNINEC

*Department of Political Sciences, Faculty of Philosophy,
Universitas Tyrnaviensis in Trnava, Hornopotočná 23, 918
43Trnava, Slovak Republic*

email: ^amkatunin@truni.sk

This paper is an outcome of the VEGA scientific project No. VEGA 1/0131/18 entitled Europe in Movement. Multicausality of Present Democracy Crisis and the Rise of Extremism in Europe.

Abstract: The presented study pays attention to potential risks of extremism for democracy in Europe. In this context it follows the military success of Nazi Germany in the summer of 1940 alongside the conceptions of the "New Order" in Europe, which pressured British policy-makers to focus greater attention to social issues. The study also sheds light on the activities of institutions which provided opportunities for notable individuals from across the political spectrum to discuss problems of social policy. Under the leadership of William Beveridge, a social system was developed which was primarily funded from the state budget. The Beveridge Report was presented as a key instrument of radical social security reforms, which gained quite wide admiration in post-war western Europe.

Keywords: Beveridge, Europe, Great Britain, Nazi Germany, New Order, Welfare state.

1 Introduction

The primary junction of all contemporary interpretations of the wrecking of democracy in the interwar period of some European countries is multicausality. Also due to the fact that many countries now face multiple crises, we must not underestimate the fact that, in the wake of the Great Depression of the 1930s, modern mass society allowed the Nazis to attract voters from across the social spectrum. In times when socio-economic subjects were at the forefront, traditional political parties moved ineptly over the political terrain. In addition to the worsening social and economic situation, these standard parties were also burdened by the long-term accumulation of causes for which they were held accountable by their antagonists. Hitler's success is often used as an example of how some countries can lose their freedom from within in a democratic way. The German Nazis realized that the political and social climate in the country had also helped them to achieve this success. In the conflict between democracy and totalitarianism, it is often forgotten that the German Nazis tried to take advantage of the fact that German social policy had enjoyed great international prestige since the time of Bismarck's social reforms. The military success of Nazi Germany in the summer of 1940 pressured British policymakers to focus intensively on the welfare state. Many prominent experts from several scientific fields participated in various social reforms, and a number of their social proposals such as the health care system named after William Beveridge served as the basis for the post-World War II welfare state.

2 Material and methods

The proposed study seeks to contribute, through the knowledge of our recent past, to the development of critical thinking in the coming generation, which is growing in a complicated world of huge possibilities as well as threats. The main aim of the study is to highlight the potential risks of the growing popularity of extremism for democracy in Europe as well as the importance of social issues in a democratic society. Historical experience with the ascendance of totalitarian regimes to power very clearly shows how easily "power can rise up from the ground" on a wave of political crisis, growing dissatisfaction and the inability or unwillingness of democratic politicians to solve existing social problems. An important aim of this study is also to point out the activities of the United Kingdom focused on the analysis of various crucial economic aspects concerning the post-war period. The research design of this study is characterized by empirical data and background information vested in available primary and secondary sources. Secondary sources in my research are predominantly books and studies of internationally

recognized authors. Primary sources are represented by archival materials, which are fundamental for research in the field of historical and political sciences, integral to social sciences, in comprehending the actions and evolution of political actors. In the study a historical, comparative and analytical research method is used. I also tried to combine chronological and thematic approaches.

2.1 Results and discussion

Although the United Kingdom (UK) is no longer a member of the European Union and British Euroscepticism is not just a phenomenon of recent times, a lot of inspiration and ideas for integration and the welfare state on our continent have emerged in this country. The purpose of this study is to highlight the potential risks for democracy in Europe by focusing on the Nazi conceptions of the "New Order of Europe" (Neuordnung Europas). The study also pays attention to some social and economic activities in Great Britain, which gained quite wide admiration in post-war western Europe, as well as to some proposals on European post-war integration. Many discussions are currently led on the crisis of democracy in the interwar period. What is usually not mentioned, however, is that various influential politicians leading democratic parties acted with certain arrogance even when the political and social situation became critical, as if nothing could go wrong. In the research, we tried to take into account the fact that in a time of socio-economic crisis, democratic states must not underestimate the risk of possible decline in public trust. From the historical experience we know that the Great Depression of the 1930s was used by the Nazi propaganda, which tried to conceal the real goals of Hitler's imperial policy behind the New Order of Europe. This goal was based on pseudo-scientific theories of race, the supremacy of the Aryan race, ethnic discrimination.

During the 1930s, Britain followed a policy of appeasement. The war with Germany pressed British policy-makers to focus more attention on European integration and social issues, which played an important role in the post-war development of Europe. In the interwar period various European intellectuals promoted the idea that cooperation transcending borders can become means to strengthen democracy and peace.¹ At the time of the Munich Agreement, the Federal Union was launched in Britain.² It set up the Federal Union Research Institute, chaired by William Beveridge. The institute had specialized sections in which various aspects of post-war European integration were discussed and analyzed.

In June 1941, the British government appointed Beveridge to head in inquiry into Social Insurance and Allied Services. The Minister without Portfolio Arthur Greenwood³ announced in the House of Commons that under the leadership of Beveridge, a survey was to be conducted, "taking into account representations received from responsible organizations and persons concerned with the problems involved" (Social Insurance and Allied Services, 1942). Representatives of several Christian churches in Britain also took part in the struggle with Nazi German propaganda, and Archbishop William Temple set in opposition the terms "welfare state" and "power state", pointing out Britain's preoccupation with providing aid in the

¹ The first influential European politician in the League of Nations who voiced his support for a union of European nations was Aristide Briand. He recognized the benefits of a union of the European nations in the political, economic and social spheres. At a meeting of the League of Nations in 1929, Briand expressed his belief that an organised cooperation is feasible in Europe, not only on the economic level, but on the political one as well. The representatives of all twenty-seven present European states entrusted Briand to issue a memorandum on the organization of such a union. However, in 1929, political thinking in Europe was already affected by the Wall Street Crash of 1929 and its possible impact on certain European countries caused their political representatives to shift their attention towards protecting their own economic interests.

² The founders of the Federal Union were Charles Kimber, Derek Rawnsley and Patrick Ransome.

³ Arthur Greenwood (1880–1954) was a prominent member of the Labour Party and for more than two years a member of the War Cabinet. In 1940, he was an advocate of British resistance to the aggression of Nazi Germany.

most delicate aspects of social life contrasted with Germany's preoccupation with war. The victory over Nazism did not mean a departure from the concept of the welfare state. With the support of the Marshall Plan, the concept of a social market economy has begun to be promoted in many Western European countries.

3 Clash of ideologies and social theories

Propaganda in Nazi Germany "presented an image of society that had successfully manufactured a 'national community' by transcending social and class divisiveness through a new ethnic unity based on 'true' German values" (see Welch, 2004: 213). During the most destructive conflict in human history, Nazi propaganda also used the concept of the 'New Order' in Europe, which symbolized the Nazi vision of the post-war order in Europe. Some Euro-sceptics are trying to portray the Nazi "New Order of Europe" as the precursor of the modern proponents of European political and economic integration. Regarding the opinions held by Nazi economists about the "European family of nations", it is not difficult to spot concepts such as the "European Economic Community" or "single economy." The German Nazis tried to present this opinion even when they occupied France. In reality, however, their goal was to use the French resources for the German war effort. But as historian Tony Judt points out: "... there were many of both sides who saw in this later Franco-German 'collaboration' the germ of a new European economic order. Thus Pierre Pucheu, a senior Vichy administrator later to be executed by the Free French, envisaged a post-war European order where customs barriers would be eliminated and a single European economy would encompass the whole continent, with a single currency. Pucheu's vision-which was shared by Albert Speer and many others-represented a sort of updating of Napoleon's Continental System under Hitlerian auspices, and it appealed to a younger generation of continental bureaucrats and technicians who had experienced the frustrations of economic policy making in the 1930s" (Judt, 2010: 154).

Hitler tried to misuse also the concept of the Monroe Doctrine and he attempted to persuade the American public that the increasing Nazi influence in Europe is actually a kind of "Monroe Doctrine for Europe." In February and March 1940 Sumner Welles, President Roosevelt's envoy to Europe, visited Italy, Germany, and England to discuss peacemaking proposals. Nazi leaders in the course of their conversations with Welles "stated that they sought only a Monroe doctrine for Europe." (The Advertiser, 6 March 1940: 19). Already at the beginning of the war, Hitler accused British politicians of fearing that the model of German social policy would prevail in Europe: "What they hate is the Germany which sets a dangerous example for them, this social Germany. It is the Germany of a social labor legislation which they already hated before the World War and which they still hate today. It is the Germany of social welfare, of social equality, of the elimination of class differences—this is what they hate!" (Hitler's speech, November 8, 1939; see Patel, November 2015: 4). Hitler tried to misuse also the concept of the Monroe Doctrine and he attempted to persuade the American public that the increasing Nazi influence in Europe is actually a kind of "Monroe Doctrine for Europe." In February and March 1940 Sumner Welles, President Roosevelt's envoy to Europe, visited Italy, Germany, and England to discuss peacemaking proposals. Nazi leaders in the course of their conversations with Welles "stated that they sought only a Monroe doctrine for Europe." (The Advertiser, 6 March 1940: 19).

The military success of Nazi Germany in the summer of 1940 alongside with the conceptions of the New Order in Europe pressured British policy-makers to outline a New Order of their own (Mazower, 1999: 186). The post-war welfare state in Western Europe was influenced in particular by the report of the inquiry into the Social Insurance and Allied Services. Even before the outbreak of World War II, an organization named Federal Union was established in Great Britain. It soon attracted prominent academics and politicians. As early as 1939, some activities were associated with The Federal Union Research Institute (FURI). This institute created proposals for a federation

of European democracies. It gained the support of numerous personages in the public as well as academic spheres. The official policy statement which the Federal Union released in its first annual conference in March 1940 announced their intention to form a Federal Union of Europe headed by Great Britain and France, allowing for the likely possibility of including a democratic Germany (together with other post-war European democracies) in the following years (see Koziak, 2003: 37). The Inter-Departmental Committee on Social Insurance and Allied Services, chaired by the economist William Beveridge, was appointed by the British coalition government in 1941 to undertake a survey of Britain's social services, and The Beveridge Report gained quite wide admiration in post-war western Europe.

3.1 The Nazi "New Order of Europe"

The vision of the economy within the New Order was most clearly outlined in the assertions that the Reich minister of Economic Affairs Walther Funk made about the economic reorganization of Europe. His speech delivered in July 1940 is "regarded as a kind of semi-official blueprint for all the occupied countries" (North, 2012: 72). The following stood out in this speech: "A stronger sense of economic community among European nations must be aroused by collaboration in all spheres of economic policy (currency, credit, production, trade, etc.). The economic consolidation of European countries should improve their bargaining position in dealings with other economic groups in the world economy. This united Europe will not submit to political and economic terms dictated to it by any extra-European body. It will trade on the basis of economic equality at all times in the knowledge of the weight which it carries in economic matters." Funk adds, however, that the main purpose of this economic reorganization of Europe is to "guarantee for Greater Germany a maximum of economic security and for the German nation a maximum consumption of goods to raise the level of the nation's well-being" (Funk, July 25, 1940, in Lipgens, 1985: 71).

The Nazi propaganda tried to conceal the real objectives of Hitler's imperial policy behind the "New Order of Europe", which were based on pseudo-scientific theories of race, the supremacy of the Aryan race, ethnic discrimination; all of which lead up to the Holocaust itself. In order to create a new and thriving culture, the Germans had to dominate the European continent. The "New Order of Europe" was a profoundly hegemonic construction. In Hitler's view, all was allowed in war, as the vanquishing heroes and their admirers will not judge the morality of their actions. This belief shaped the Nazi ideology. He tried to evoke the hope that he can make the German masses into a kind of *Nietzschean Übermensch race*. Nations superior to others had the right to expand at the expense of racially inferior peoples. However, in the particular era, he considered establishing colonies as problematic; hence the concept of *Lebensraum* which referred to policies aiming to create more "living space" in Europe.

3.2 Churchill's coalition government and the importance of socio-economic issues

On 10th May 1940, Winston Churchill became the new Prime Minister of Great Britain. The very same day the German blitzkrieg offensive was launched on the Western front.⁴ Only a few days into the offensive, on 15th May, the words that the French Prime Minister Paul Reynaud addressed to Churchill in a phone-call were indeed gloomy: "We have been defeated. We are beaten; we have lost the battle!" (Shirer, 1960: 720). In less than a month on 14th June, the German army entered Paris without battle. The new French government led by the First World War veteran and hero Philippe Pétain asked Germany for a humiliating armistice, a step opposed by Charles de Gaulle, whose speech broadcasted from London appealed to the French to carry on fighting: "Whatever happens, the flame of French

⁴ Inspired by the success of the German offensive, 10th June 1940, Italy declared war on Britain and France, allying with Nazi Germany.

resistance must not and shall not go out." This appeal to the French (*L'appel du 18 Juin*) is often considered to have laid foundation for the French overseas Resistance (see Corbett, July 2000).

Already in November 1939, as Britain's political parties sought to articulate what they were fighting for, Clement Attlee at the meeting of the Labour Party stated that "Europe must federate or perish" (see Lippgens - Loth, 1986: 167-168). "At the darkest hour in French history" in June 1940, Churchill offered a proposal for a Franco-British Union, which would have "joint organs of defence, foreign, financial and economic politics" (Churchill, 1941: 225-234). The proposal of the Franco-British Union was first developed by Jean Monnet the head of the Anglo-French Coordination Committee which was set up in London in December 1939. Jean Monnet's name is closely linked to the beginning of the post-war period of Western European integration. Monnet, who tried to prevent the return to the conditions of Europe prior to 1939, already on 5 August 1943 wrote: "The countries of Europe are not strong enough individually to be able to guarantee prosperity and social development for their peoples. The States of Europe must therefore form a federation or a European entity that would make them into a common economic unit" (Jean Monnet. Notes on Reflections. August 5, 1943). After the war, he presented a project in which he proposed to put all of France and Germany's steel and coal production in an organization under common authority which would also be open to the participation of other European countries (see Katuniec, 2016: 341). "Monnet's approach to the building of a federal Europe was a major breakthrough in conventional inter-state relations. ... Monnet was attempting something that had no historical precedent" ((Burgess 1995: 229).

Churchill, who announced the 'Declaration of Union' between Great Britain and France, is also well known for his view that the British are with Europe, "but not of it". Britain's wartime leader later explained that support he gave to the notion of the "union of common citizenship" was rooted in the necessity of keeping alive the French spirit of resistance. He supported Charles de Gaulle and their agreement was supposed to represent the unity of those who were determined to carry on fighting the Germans (Koziak, 2003: 63-64).

Already in 1939 the British Ministry of Information prepared a motivational poster "Keep Calm and Carry On". The British government printed nearly 2.5 million copies, but this motivational poster was never officially issued because it was only foreseen after the German invasion of England. Later, when this invasion seemed a very real possibility, the Ministry of Information prepared the leaflet, boldly called "Beating the Invader". In April 1941, the War Cabinet decided to print more than 14 million copies and distribute the leaflet to all British households. The leaflet provides instructions from the Ministry of Information with a message from Prime Minister Winston Churchill on what to do in the case of invasion. Churchill's powerful and inspirational introduction begins with the words: "If invasion comes, everyone — young or old, men and women — will be eager to play their part worthily" (Churchill, 1941).

Although the invasion did not take place and the situation in the war began to develop in favour of Great Britain, British politicians realized very well that in the struggle with Nazi totalitarianism propaganda was also essential, in which social and economic issues played an important role. The Federal Union Research Institute (FURI) has become an important center of intellectual activity. Some of the leading members of this Research Institute served in Churchill's coalition government in the years 1941-1942. Such was the case of William Beveridge who chaired this institute. The institute provided opportunities for notable individuals from across the political spectrum to discuss the course of post-war European integration. Studies covering various issues underlying the integration were published mainly by the section of the institute which was dedicated to constitutional law. A publication worth mentioning is the work *A Federation for Western Europe* written by the

British lawyer Ivor Jennings. Jennings assumed that after the war continental Europe would follow the path of democracy inspired by British legal and political institutions, which could provide bedrock for the federation of European nations. Jennings did not think that after the defeat of Nazism, Britain and France would be strong enough to oppose the USSR's expansionist policy. It was not a federation of exclusively Western European states that he envisioned; in the long term, he was not opposed to the idea of including a democratic Russia. Yet if Russia was to be included, he would welcome the idea of the inclusion of the United States as well, "because it would redress the balance of the enormous Russian population" (Jennings, 1940: 30-31).

The economic section of the Research Institute focused on the analysis of various crucial economic aspects concerning the potential existence of a post-war union. The economic plans put forward by the members of the economic section varied mainly on the questions concerning the extent to which central institutions would interfere in running the economy. Friedrich von Hayek, an Austrian-British economist and philosopher, who was also a member of the institute, pointed out that all the projects of the federal government would be limited by economic differences and conflicting interests, resulting in the inability to agree on a common policy (Koziak, 2003: 77-78). In Hayek's viewpoint, the success of fascism and Nazism could be blamed on the refusal of socialist parties to assume responsibility in coalition governments as well as on their populism and effort to appeal to masses even in difficult times. He believed that socialism impedes social development, because a planned economy stifles competition. According to Hayek, best known for his defence of classical liberalism, redistributing wealth would lead people whose wealth is taken from to be less productive because they do not see the benefits in working as much if the benefits of their work is taken away from them.

Hayek's opinions prompted criticism on the part of leftist economists. Harold Wilson, a post-war politician and some years later Prime Minister of Great Britain,⁵ rejected the claim that peace can be achieved only through economic liberty and voiced the concern that accepting such a claim would not be a step forward for democracy, but rather sliding into the past. (Koziak, 2003: 79). For a certain amount of time Wilson worked as a research assistant of William Beveridge and was heavily influenced by this famous economist who is known for his work on the foundations of a welfare state. Having used this term in 1942, Beveridge drew on the economic theories of state social policy developed by John Keynes in the late 1920s and early 1930s. Keynes based his theory on the idea that the key variable that governs economics is aggregate demand. In his view what causes the crisis of capitalism is not only inadequate supply, but especially the declining demand on the consumers' part. In order to raise wages, consumption must grow and the collective purchasing power must be insured. In other words, nobody, not even entrepreneurs, can profit from social phenomena such as low wages, unemployment, or poverty.

The report "arising out of the work of the Inter-departmental Committee on Social Insurance and Allied Services" (officially known as Cmd 6404) was presented to parliament in November 1942 and published in the same year. Beveridge was convinced that the war provided an opportunity to ensure that the type of social deprivation seen during the worldwide economic downturn in the 1930s could not happen again. In connection with the "Three Guiding Principles of Recommendations" Beveridge said: "Now, when the war is abolishing landmarks of every kind, is the opportunity for using experience in a clear field. A revolutionary moment in the world's history is a time for revolutions, not for patching" (see Beveridge Report, November 1942). The committee's report drawn up for the British Parliament focused on how to tackle the five "giant evils": want disease, ignorance, squalor, and idleness. His welfare provisions were based on four assumptions which were to be incorporated into British post-war policy: "that there should be a national

⁵ Harold Wilson served two terms as Prime Minister – from 16th October 1964 until 19th June 1970 and from 4th March 1974 until 5th April 1976.

health service, an adequate state pension, family allowances and near-full employment” (Judt, 2010: 74-75).

3.3 “Welfare state” and “power state”

There is no single precise definition of what a welfare state is.⁶ Even the origin of the term itself is still debated. Numerous historians agree that the term goes back to the Archbishop of York William Temple.⁷ The Anglican prelates Archbishop of Canterbury William Cosmo Gordon Lang and Archbishop of York William Temple, together with the Roman Catholic Archbishop of Westminster, Cardinal Hinsley and the Moderator of the Free Church Federal Council Walter H. Armstrong all signed a letter to the editor of *The Times* entitled *Foundations for Peace: a Christian Basis, Agreement among the Churches*. They endorsed “The Pope’s Five Peace Points”, which Pope Pius XII raised in his *Christmas Address* broadcasted from the Vatican on 24th December 1939. The Pope requested “the assurance to all nations of their right to life and independence”, emphasising “the will of one nation to live must never mean the sentence of death passed upon another. When this equality of rights has been destroyed, attacked, or threatened, order demands that reparation shall be made, and the measure and extent of that reparation is determined, not by the sword nor by the arbitrary decision of self-interest, but by the rules of justice and reciprocal equity.” That required, in his opinion, “that the nations be delivered from the slavery imposed upon them by the race for armaments and from the danger that material force, instead of serving to protect the right, may become an over-bearing and tyrannical master. The order thus established requires a mutually agreed organic progressive disarmament, spiritual as well as material, and security for the effective implementing of such an agreement.” He also pointed out the importance of certain juridical institutions “which shall guarantee the loyal and faithful fulfilment of conditions agreed upon and which shall in case of recognized need revise and correct them.” Incentives to violent action would be removed by acknowledging the rights of nations, populations and racial minorities, which would eventually lead to the renewal of basic mutual trust. The Pope appealed to nations and their leaders that they should adopt a responsible attitude towards the human rights which uphold the “sacred and inviolable standards of the laws of God. They must hunger and thirst after justice and be guided by that universal love which is the compendium and most general expression of the Christian ideal” (Discurso di Sua Santità Pio XII al Sacro Collegio e alla Prelatura Romana, December 24, 1939; see *The Role of Religion in Post-War Reconstruction*, 1943: 123-124).

Striving to establish permanent peace, the representatives of the three abovementioned churches in England added five more points to the appeal of Pope Pius XII. These points focused on the economic and social spheres. They requested removing “extreme inequality in wealth and possessions”, providing equal education of all children regardless of race or class, safeguarding the “family as a social unit”, restoring the spiritual dimension of daily work, and using the resources of the Earth as “God’s gifts to the whole human race” and doing so with “due consideration for the needs of the present and future generations” (see *Foundations of Peace: A Christian Basis, Agreement Among the Churches, Letters to the Editor. The Times*, December 21 1940, in *The Role of Religion in Post-War Reconstruction*, 1943). Archbishop William Temple set in opposition the terms “welfare state” and “power state”, pointing out Britain’s preoccupation with providing aid in the most delicate aspects of social life contrasted with Nazi Germany’s preoccupation with war; this comparison emphasised the ethical dimension and cultural values of the welfare state. William Temple welcomed the

Beveridge Report because it corresponded with the Christian ethic. The idea of a welfare state also inspired several post-war Christian intellectuals and politicians, according to whom it was in accordance with the principles of Christian social teaching (Human dignity, Solidarity, Subsidiarity, Common good).

The Beveridge system provided a summary of principles necessary to banish poverty and its ambition was to include all citizens. It was primarily funded from the state budget, which was criticized by some liberal economists, especially the already mentioned F. A. Hayek. Between 1940 and 1943 Hayek worked on the book *The Road to Serfdom* first published in Britain by Routledge in March 1944 (see Hayek, 1944). In this book Hayek asserted that economic freedom and political freedom are linked and that peace can be preserved only through economic liberty. Unlike the Beveridge Report, *The Road to Serfdom* had only been a small success in post-war Britain and much better was sold in the United States.⁸

According to Beveridge: “The Plan for Social Security is put forward as something that could be in operation in the immediate aftermath of the war” (*Social Insurance and Allied Services*, 1942: 17). The Beveridge Report laid the foundation of post-war social policy in Britain, including the provision of family allowances, comprehensive social insurance, and health care coverage.⁹ His proposals practically influenced the evolution of welfare system in much of Western European countries” (Ştefan, 2015: 28).

4 Conclusion

In a democratic Europe, there has never been a coherent model of a social state. But the trust in democracy and its institutions is very narrowly connected with the issue of the living conditions of citizens.¹⁰ “The social rights, income security, equalization, and eradication of poverty that a universalistic welfare state pursues are necessary precondition for the strength and unity that collective power mobilization demands” (Esping-Andersen, 1990: 16). This issue belongs in the set of activities defining social policy as a central subject (see Martinkovič, 2016: 50). This is also evidenced by historical experiences with the existence of totalitarian regimes who came to power during the Great Depression of the 1930s. The Nazis gained popularity in Germany also with their social policy and at the international level they presented themselves as the “New Order of Europe”. However, during World War II the term “New Order” changed its meaning several times.

After the fall of France, when it seemed that Britain could remain alone in the war conflict with Germany, British politicians realized that they could not underestimate social issues either. Representatives of Christian churches in Britain also took part in the ideological struggle against Germany, and the leader in the ecumenical movement, Archbishop William Temple contributed to the popularization of the term “welfare state”. After the war, almost all European democracies recognized the welfare state “as an essential institution which aims to ensure a relatively decent life for its citizens” (*Social Insurance and Allied Services*, 1942: 30). At the end of 1942 William Beveridge prepared an important report for the British Parliament. The Beveridge report was presented as a key instrument of radical social security reforms and gained quite wide admiration in post-war Western Europe.

⁶ The name “welfare state” itself implies that it should be a state of prosperity, striving to achieve “the greatest happiness for the greatest number of people.” Translations from other European languages show that the concept is also spoken about as a “social state”, “providing state” (or “state of Providence), and a state which provides “public social services.” The word “welfare” is also used in phrases such as “public welfare” (social support funded by tax income), “private welfare” (social provisions of non-governmental bodies), and “social welfare” (see Strauss, 2005; Tomeš, 1996: 21).

⁷ William Temple was Archbishop of York (1929–1942) and Archbishop of Canterbury (1942–1944).

⁸ In the 1950s and 1960s Hayek’s book inspired few readers. Margaret Thatcher did read his book already in 1944, “but its impact on her was minimal”. In 1974, Hayek was awarded the Nobel Prize in Economics. At that time Thatcher “re-read” his book on the recommendation of Keith Joseph. In 1974, Joseph and Thatcher founded the Center for Politics, one of Britain’s leading free market think tanks, which had a significant influence on conservative politics known as “Thatcherism”. (see Aitken, 2013: 52).

⁹ *The Beveridge Report* is seen as the foundation document for the welfare state created by the post-war Clement Attlee’s Labour government.

¹⁰ “Much comparative welfare state research in the social sciences has focused on the details of social insurance scheme in particular. A close analysis of the historical development of social insurance helps to reveal the complexity of these arrangements, and the ways in which they differed across national contexts” (Hilson, 2008: 100).

Although the post-war times were very difficult and the welfare state did not come cheap, the post-war state "was a 'social' state, with implicit (and often constitutionally explicit) responsibility for the well-being of its citizens". This is emphasized by Tony Judt, according to whom: "... the postwar welfare systems were a guarantee of a certain minimum of justice, or fairness. This was not the spiritual and social revolution for which many in the wartime Resistance had dreamed, but it was a first step away from the hopelessness and cynicism of the pre-war years" (Judt, 2010: 76-77). The experience of the Great Depression and the Second World War should still remind us that the social issues are very closely associated with the existence and stability of a democratic society.

Literature:

1. Aitken, J.: *Margaret Thatcher. Power and Personality*. London: Bloomsbury, 2013, 764 p. ISBN: 9781 408831847.
2. Beveridge Report, "Three Guiding Principles of Recommendations". November 1942. In The National Archives. [online]. [cit.2020-01-08]. Available: <https://www.nationalarchives.gov.uk/education/resources/attlees-britain/beveridge-report/>
3. Burgess, M.: *Comparative Federalism. Theory and practice*. London-New York: Routledge, 2006, 357 p. SBN: 978-0-415-36454-6.
4. Churchill, W.: *Beating the Invader. A message from the prime minister. Issued by Ministry of Information in cooperation with the War Office and the Ministry of Home Security*. In *Finest Hour* 181, Summer 2018, p. 38. [online]. [cit.2020-01-08]. Available: <https://winstonchurchill.org/publications/finest-hour/finest-hour-181/invasion-of-britain-beating-the-invader/>
5. Corbett, A.: *A Certain June 18th. The anniversary of De Gaulle's London address to 'Free France'*. In *History Today*, July 2000, 50 (7) [online]. [cit.2020-01-08]. Available: <https://www.historytoday.com/archive/certain-june-18th>
6. *Discorso di Sua Santità Pio XII al Sacro Collegio e alla Prelatura Romana*, December 24, 1939. [online]. [cit.2020-01-08]. Available: https://www.vatican.va/content/pius-xii/it/speeches/1939/documents/hf_p-xii_spe_19391224_questo-giorno.html
7. Esping-Andersen, Gösta: *The three worlds of welfare capitalism*. Princeton, New Jersey: Princeton University Press, (1990) 1998, 248 p. ISBN 0-691-02857-5.
8. Funk, W.: *The economic reorganization of Europe (25 July 1940)*. In Lippens, W. (ed.): *Documents on the History of European Integration (1). Continental Plans for European Union 1939-1945: (Including 250 Documents in their original Language on 6 microfiches)*. Berlin, New York, Walter de Gruyter: European University Institute, 1985, pp. 65-71. ISBN 3-11-00-009724-9.
9. Hayek, F. A.: *The Road to Serfdom* 1944. Routledge Press, 1944, 266 p. ISBN: 0-226-32061-8.
10. Hilson, M.: *The Nordic Model. Scandinavia since 1945*. London: Reaktion Books. First published 2008, reprinted 2013, 234 p. ISBN 978-1-86189-366-6.
11. Jennings, I.: *A Federation for Western Europe*. Cambridge: Cambridge University Press, 1940. [online]. [cit.2020-01-08]. Available: <https://archive.org/details/federationforwes031229mbp/page/n45/mode/2up>
12. Judt, T.: *Postwar: A History of Europe Since 1945*. London: Vintage Books, 2010, 933 p. ISBN 978-0-099-54203-2.
13. Katuninec, M.: *Vplyv Kresťanských politikov a sociálneho učenia katolíckej cirkvi na politické myslenie v začiatkoch povojnového integračného procesu v západnej Európe*. In *Dejinné premeny 20 storočia*. Bratislava: VEDA, 2016, pp. 335-349. ISBN 978-80-224-1504-0.
14. Koziač, T.: *Federálna únia a britské projekty európskej integrácie do roku 1945*. Prešov: SLOVACONTACT, 2003, 146 p. ISBN 80-88876-11-7.
15. Lippens, W. - Loth, W. (eds.) *Documents on the history of European integration. 2 : Plans for European Union in Great Britain and in exile 1939- 1945 (including 107 documents in their original languages on 3 microfiches)* Berlin - New York: Walter de Gruyter (European University Institute), 1986, 851 p. ISBN: 3-11-010338-9.
16. Martinkovič M.: *Moral Aspects of Politics and their Relation to the Legitimacy of Liberal Democracies*. In Katuninec, M., Martinkovič, M.: *Ethical and Social Aspects of Policy: Chapters on Selected Issues of Transformation*. Frankfurt am Main, Berlin: Peter Lang, 2016, pp. 39-62. ISBN 9783631671580.
17. Mazower, M.: *Dark Continent: Europe's Twentieth Century*. Penguin, 1999, 512 p. ISBN- 0140241590.
18. Nazi 'Monroe' Doctrine for Europe. In *The Advertiser*, 6 March 1940. [online]. [cit.2020-01-08]. Available: <http://trove.nla.gov.au/newspaper/article/41655263>
19. North, R.: *The Many Not The Few: The Stolen History of the Battle of Britain*. London, New York: Bloomsbury Publishing, 2012, 456 p. ISBN: 9781441131515.
20. Patel, K. K.: *Welfare in the Warfare State: Nazi Social Policy on the International Stage*. In *German Historical Institute London Bulletin*, November 2015, 37 (2), pp. 3-38. ISSN 0269-8552.
21. Shirer, W. L. *The Rise and Fall of the Third Reich*. New York: Simon and Schuster, 1960, 1245 p.
22. *Social Insurance and Allied Services. Report by sir William Beveridge, (Cmd 6404)*. London: His Majesty's Stationery Office, 1942. [online]. [cit.2020-01-08]. Available: http://news.bbc.co.uk/2/shared/bsp/hi/pdfs/19_07_05_beveridge.pdf
23. Štefan, G. M.: *European Welfare State in a Historical Perspective. A Critical Review*. In *European Journal of Interdisciplinary Studies*, 2015, 7 (1), pp. 25-38. [online] [cit.2020-01-08]. Available: <https://www.questia.com/library/p439876/european-journal-of-interdisciplinary-studies/i4509102/vol-7-no-1-june>
24. Štrauss, D.: *Štát blahobytu (welfare state, sociálny štát)*. In *Slovenská politologická revue*, 2005 (4). [online]. [cit.2020-01-08]. ISSN 1335-9096. Available: <http://revue.kpol.ff.ucm.sk/archiv/2005/4/straussd.pdf>.
25. *The Role of Religion in Post-War Reconstruction*. In *World Affairs* 1943, 106 (1), pp. 3-41. [online]. [cit.2020-01-08]. Available: <https://www.jstor.org/stable/20663800>
26. Tomeš, I.: *Sociální politika. Teorie a mezinárodní zkušenost*. Praha: Socioklub 1996, 213 p. ISBN 80-902260-0-0.
27. Welch, D.: *Nazi Propaganda and the Volksgemeinschaft: Constructing a People's Community*. In *Journal of Contemporary History* 2004, 39 (2), *Understanding Nazi Germany*, pp. 213-238. [online]. [cit.2020-01-08]. ISSN 0022-0094. Available: <https://www.jstor.org/stable/3180722>

Primary Paper Section: A

Secondary Paper Section: AB, AD

ACTIVATIONAL TEACHING METHODS AS A TOOL FOR DEVELOPMENT OF CRITICAL THINKING

^aREBEKA ŠTEFÁNIA KOLEŇÁKOVÁ, ^bSIMONA BORISOVÁ, ^cLENKA ŠUTOVCOVÁ

Constantine the Philosopher University in Nitra, Department of Pedagogy, Drážovská cesta 4, 949 74 Nitra, Slovakia
email: ^arebeka.stefania.kolenakova@ukf.sk,
^bsimona.borisova@ukf.sk, ^clenka.sutovcova@ukf.sk

This study has been written under the project: APVV-15-0368 Practice in the centre of the subject field didactics, subject field didactics in the centre of preparation for practice.

Abstract: In education, the development of critical thinking is a long-term process that needs to begin in early school age. This period is important for the development of critical thinking, because a child starts school and is significantly affected by the teacher's way of work. A pupil is required to be able to think critically when starting secondary education. The main prerequisite of pupils' development of critical thinking is teacher's creative personality using a creative approach in education. This paper deals with the analysis of activational methods and the application of Philosophy for Children program as a tool for development of critical thinking in educational process of pupils at secondary education level. Within the Philosophy for Children programme, we have implemented activational methods in the education process. The research design was quantitative, and the data was acquired based on the experimental method. The research results confirm the benefits of the Philosophy for Children program in educational process with emphasis on its potential to develop pupils' critical thinking owing to its principles and characteristics.

Keywords: critical thinking, activational methods, philosophy for children, education

1 Introduction

The explosion of information that the world offers us nowadays makes us learn to work with them adequately and, more importantly, to select them in terms of their real use. Reflecting this situation, there is a need to teach pupils to think critically in an adequate way. This is also related to the changing requirements for education in schools, which we must implement in our education system. We see this as one of the current challenges of our education system. The issue of developing critical thinking of pupils is a very timely and often discussed topic today. The level of critical thinking development determines the pupil's success not only in the school, but also in the environment outside of school. In today's information society, people's ability to deal with different life situations flexibly, critically, creatively and inventively is required. The need for the implementation of methods and strategies for developing creative and critical thinking in the educational process in Slovakia is also pointed out by the results of the last three cycles of the PISA international assessment (2012, 2015, 2018), in which Slovak pupils reached considerably lower score in all monitored areas than the average in OECD countries. The negative trend of decreasing performance in all monitored areas confirms insufficient development of creative and critical thinking among pupils in Slovakia. Pupils are not able to work independently and use higher cognitive operations (synthesis, analysis, evaluation and creativity). Widely available information introduces the need to teach pupils how to work with them and use them in a meaningful way through critical thinking (Higgins, 2014). Critical and creative thinking plays an exceptional role in teacher education, because it is teachers who can influence the skills of critical thinking among the school-age population. The main prerequisite is the teacher's knowledge of various methods and strategies for development of critical thinking. Psychodidactic competencies of a teacher include skills and abilities, thanks to which the teacher is able to process the learning content and manage teaching in order to develop (meta)cognitive processes of pupils, implement teaching strategies and assessment activities that have the potential to contribute to the development of pupil's personal and cognitive characteristics (Duchovičová, Petrová, 2016). The most significant obstacle to achieving the above-mentioned goal, while developing psychodidactic competences in teacher education in practice, is teachers' limited knowledge of how to develop critical thinking in teaching (Williams, 2005).

2 Critical and Creative Thinking

The topic of developing critical thinking has been the subject of scientific research for several decades. Important foreign authors who have been involved in studying critical thinking include Ennis (1985), Lipman (1988), Bailin (2002), Paul, Elder (2006), Scriven, Paul (2007), Willingham (2010), Lai (2011), Halpern (2014) and many others. Lipman (1988) argues that critical thinking is, in contrast to conventional thinking, more complex, because it involves not only mental processes for problem-solving and decision-making, but also thinking based on which people make judgments. Critical thinking is a disciplined process of active conceptualizing, analyzing, applying and evaluating the gathered information (Scriven, Paul, 2007). In Slovakia, the concept of critical thinking in terms of teaching began to emerge in the 1990's, when teachers from kindergartens to universities gathered around non-governmental organizations that covered international projects aimed at influencing educational strategies of teachers and educators (Porubský et al., 2014). Nowadays in the Slovak Republic, Kosturková (2016), Velmovská, Bartošovič (2016), Duchovičová et al. (2016; 2017; 2018; 2019), Kosturková, Ferencová, Šuťáková (2018); Kosturková, Ferencová (2019) and others focus on critical thinking in their studies.

The term critical thinking has been used in education for several decades. It represents a higher way of thinking that begins with information and ends with a decision (Petrasová, 2008). A critical thinker assesses new information, examines it carefully and critically from multiple perspectives, makes judgments about its credibility and value, and assesses the importance of new ideas and information for his/her needs (Grecman et al., 2000). Critical thinking is the ability not to succumb to the imposing influence of foreign thoughts and opinions, but to evaluate them strictly and correctly in order to see their positive and negative aspects. Critical thinking itself is based on attitudes and abilities to gather and assess relevant information, draw reasoned conclusions, address the problem on the basis of relevant criteria, assess the assumptions and implications of decision-making (Snyder, Snyder, 2008). To think critically means for Halpern (1999) to evaluate the outputs of the thinking process, i.e. what is the quality of the solution or how well a problem is solved. The process of critical thinking occurs at the moment when a problem arises, while an individual is able to raise questions leading to evaluation, argumentation, statements and conclusions. This process includes problem-solving, probability calculations, formulation and drawing of conclusions. Critical thinking is a conscious process, so we can practice and develop its individual components at the same time. Based on the Delphi report, Facione and Facione (2008) defined critical thinking as a process of purposeful and self-regulatory reasoning, careful consideration of evidence, contexts, conceptualization, methods and criteria. Several definitions of critical thinking suggest that it is based on mastering simpler cognitive skills. In relation to previous baselines, Tileston (2005) lists the following skills of critical thinking:

- inductive reasoning (where we classify e.g. cause and effect; open problems, analogies; drawing conclusions; identifying relevance, relationships; problem-solving);
- deductive reasoning (using logic, reasoning; understanding contradictions; spatial problems; syllogisms consisting of a set of three statements, where a conclusion is drawn from two assumptions);
- evaluative thinking (in form of differentiating facts and opinions; credibility of the source; identifying the main problems; distinguishing assumptions; detecting stereotypes; evaluating hypotheses, classifying a set of information; assuming consequences).

It is important to have critical thinking, because it enables pupils to deal effectively with scientific, social, and practical problems

(Sharikova, 2007). In the context of developing critical thinking, it is crucial to establish assumptions, consider their accuracy, take note of them from different perspectives, and, finally, make decisions based on convincing evidence (Castellano et al., 2017). Critical thinking is closely related to creative thinking, which is characterized by creativity and originality. The result of this thinking is a product that is valuable, new, useful, usable, and original (Žák, 2004). According to Tóthová (2006, p. 15), „*there are several definitions of creative thinking that are based on different theoretical concepts (Gestalt, psychoanalytic, behavioral psychology), are differently oriented (e.g. personality, abilities, intellectual activity, process, product or more abstract questions concerning the share of conscious and unconscious regulation, convergent and divergent thinking in the creative process, etc.), and usually take into account only some aspects or address only part of the problems related to the definition of this concept.*“ A creative person focuses his activities on goals that have not been known so far. To achieve these goals, it is necessary to master things that have already been discovered and dealt by someone else. Adequate education and good knowledge of the issue are essential in the creative process (Tuma, 2001).

Kosturková (2016) points out that the school's vision should be to teach pupils to orient themselves in life, and by using the principles of critical thinking in education, the school prepares pupils more effectively for the future. People need critical and creative thinking to understand issues, solve problems, and make appropriate decisions. The school's duty should also be to prepare students to participate in society as citizens, where the ability to think critically and creatively can help significantly.

3 Activational Teaching Methods

In order to improve the quality of education in the Slovak Republic, there are constant efforts to change education, such as the new state curriculum, which changes the situation only partially. The shortcomings in education and the related poor results of our pupils have been pointed out for a long time, and in today's education it is not enough to teach traditionally, but innovative methods, approaches and learning behaviours are needed. This issue in the context of the new curriculum has begun to be abundant, especially in terms of improving the quality of education and streamlining the results. However, real and effective change requires the coherence of several elements. In today's schools, the traditional form of the educational process is dominant: a lesson based on the frontal work with pupils, explanation, interpretation, and speaking of the teacher. Following on practice, the application of changes at the level of educational forms and methods is perceived as unique and demanding. Although teachers are informed about new methods from different sources, many times they choose a more proven and widespread method of teaching. A suitable and well-known group is expected to be activational methods, the wide spectrum of which allows precise selection for the needs of particular educational process according to the learning content, and pupil and teacher characteristics. It is important that teachers abandon traditional methods of education and apply more creative methods to enhance creativity and creative thinking, critical thinking, pupils' independence, their ability to cooperate and, last but not least, the development of self-reflection and self-evaluation. Despite the fact that literature offers a number of methods, forms and concepts of teaching that many teachers know and even put some of them in use, there are still many teachers who do not use these methods for the benefit of pupils. There is a need for a qualitative change from reproductive cognition created and acquired through cognition, remembering, and basic understanding, to active and productive cognition that is new to an individual, created through analysis, synthesis, evaluation, creative and reflective thinking (Grofčíková, Kozárová, 2017).

We understand the methods and strategies of the educational process as a system of coordinated teaching activities of a teacher and learning activities of a pupil towards achieving the set educational objectives. The development of critical and

creative thinking can be achieved by methods that involve pupils in active thinking, pupils must be encouraged to introduce their own opinions, to rationally choose from two competent ideas, to cooperate with others, to discuss responsibly about specific issues, to respect different opinions and realize how experience can influence people's attitudes and perceptions (Grecmanová, 2000). Activational methods are defined by Fenyvesiová (2013) as didactic procedures leading the teaching, so that educational goals are achieved primarily based on the pupils' own learning activity. In this way of education, there is a change in the role of pupils from passive recipients to active participants in the educational process in terms of individual cognitive processes (in particular, active processes of acquisition, updating, processing, evaluation, and generalization or application of new knowledge). Activational methods are most often divided into (Kotrba, Lacina, 2011):

- problem-based learning (heuristic method, black box method, confrontation method, paradox method, self-compilation task, working with text, free writing, mental mapping, written work, predictive task, etc.);
- didactic games;
- methods of group teaching and cooperative learning;
- discussion (dialogue) methods (brainstorming, brainwriting, Method 653, rounds, carousel, snowballing, visitors, goldfish bow technique, lecture discussion, chain discussion, discussion based on a thesis, discussion based on a presented paper, Hobo method, Philips 66, consensus method, targeted question method, Gordon method, debate, etc.);
- situational methods (case methods);
- staging methods (role plays, dramatization);
- special methods (project teaching, responsiveness exercise, icebreakers, research methods, etc.).

Literature offers a number of activational and innovative methods with only Čapek (2015) describing about 500 teaching methods and strategies in his publication. We will not describe them all in detail, but name just a few of them, which have been mentioned more and more recently. Concepts such as projective, group, cooperative and problem-based teaching and methods, such as Socratic method, questioning method, case study, staging method, mental mapping, discussion, etc. are suitable for developing critical thinking.

3.1 Philosophy for Children Program

Very well-known, but in practice little used in Slovakia, is the so-called Philosophy for Children program that was designed to respond to the inadequacy of schoolwork in developing the thinking of children, pupils, and students. The Philosophy for Children program (hereinafter "P4C") includes a number of activating methods that develop critical thinking, such as literary stories, discussion, role-playing, dramatization, drawing and many more. Critical thinking is included in the objectives of this program, which is actively implemented in different variations in the educational practice of many countries around the world. The advantage of the program is that it includes a variety of methods, topics and activities that can be applied flexibly. Lipman (2003), the founder of the program, emphasizes the impact of the community in which we read, listen, talk, write, and justify. These skills are developed through the practical implementation of the philosophy absent from the Slovak education curriculum.

A problem-solving group in the P4C program using collective effort is called a seeking community. Members of the seeking community are given space for independent and free thinking, reflecting on the opinions of others and, at the same time, for the revision of their own opinions.

The P4C program uses typical literary stories designed by the founder of the program Lipman with his colleagues. A philosophical literary story is used as a method providing space to reflect on many issues of life. It is an incentive from which the participants of the seeking community derive questions for joint review. In the educational process, it is essential to include

problematic situations that encourage flexibility in creating new solutions, assessing them using different criteria, and encouraging the creation of questions. Developing the skills to correctly formulate questions helps pupils to critically assess the excessive amount of information they are flooded with on a daily basis. Reading a literary story is usually followed by questions in smaller groups. The questions created are mostly of a philosophical nature, they are recorded in a visible place, and a question that the members of the seeking community want to solve, is chosen by voting.

In the process of discussion in this program, pupils thoughtfully process opinions of others, they are compelled to listen carefully in order to choose correct words to solve the problem – exploring alternatives and considering conflicting views. The effort to think jointly, to define concepts, to remove prejudices, to consider different aspects, to consider reasons is encouraged. A discussion within the P4C program is not the same as a debate, because the debate is aimed at promoting views of an individual (victory of the individual), while the discussion is aimed at solving the problem together (victory of the group). The discussion may be supplemented by introducing activities related to the problem or its parts. The choice of activities depends on the facilitator (teacher) or the person who leads the discussion. Activities within the P4C program include various exercises focusing on speech, visualization, and expression through movement and drama.

As mentioned above, there is a number of activational methods that develop critical and creative thinking, for example through essays, the Socratic method, the E-U-R teaching and learning strategy, brainstorming, staging methods, mental mapping, questioning methods, discussions and more. The P4C methods include many similar features to the above methods, while offering several different approaches to develop critical thinking along with other skills. Among the activational methods of the P4C program developing critical thinking we include e.g. problem-solving discussion focused on question-making and exercises focused on expression through speech, art, drama, and movement. Lipman (2003) proposes the inclusion of critical thinking as a separate course for teachers, in which teachers would acquire basic knowledge and skills to develop pupils' thinking. The author suggests that without such a course, it is difficult for teachers to explain to their pupils the importance of developing not only critical, but also creative and committed thinking, and highlights the development of thinking through the P4C program.

In the field of the P4C program, a number of studies, publications, and researches are underway demonstrating the impact of the program on the level of critical and creative thinking, e.g. Garcia-Moriyon et al., 2005; Othman Hashim 2006; Topping, Trickey, 2007; Lam, 2012; Fair et al., 2015 and many others. A significant source of knowledge on the subject is the P4C meta-analysis of the effectiveness of the program (Yan et al., 2018) providing broad understanding of the impact of program methods on cognitive performance of pupils. Meta-analysis is described as a method of combining the results of several independent researchers from a common field, while the method performs statistical analysis. The authors analyzed researches and studies from 2002 to 2016, which examined the connection between the seeking community, philosophical thinking and socio-psychological improvement of personality. From more than a thousand researches in this field, the authors selected ten research studies eligible for their analysis using strict criteria. The research was required to include a quantitative methodological approach, both experimental and control groups, cognitive ability measurement and statistical evaluation. The variables included the measurement of cognitive results, such as reasoning ability, comprehension ability, and general cognitive ability. Meta-analysis gave us insight into the ways, in which the level of cognitive abilities can be measured. According to the findings of this meta-analysis, the P4C program showed a slight positive impact on students' cognitive performance. Cognitive outcomes include general cognitive skills, reasoning skills, creative thinking, reading and listening comprehension.

According to meta-analysis, in all these types of cognitive outcomes, the P4C program has a large positive impact on pupils' judgment, and a slight impact on other cognitive areas (Yan et al., 2018).

In the context of the above, we focused on the validation of the Philosophy for Children (P4C) program as a tool for developing critical thinking in education.

4 Research

The subject of the study was the Philosophy for Children program and its application in the educational process at the level of secondary education, specifically for pupils of the 1st – 4th year of secondary school, and the identification of its impact on the development of critical thinking. The main aim of the research was to determine the impact of the Philosophy for Children program on the development of critical thinking of secondary school pupils (1st – 4th year of secondary school).

Based on the above-mentioned goal, we identified two research issues:

1. RP: How does the use of the Philosophy for Children program in education impact the development of critical thinking of secondary school pupils over a period of two to three months?
 - We assumed that: pupils to whom the Philosophy for Children program has been applied in an experimental way reach better level of critical thinking than pupils to whom the program was not applied.
2. RP: To what extent can we develop critical thinking by implementing a model lesson of Philosophy for Children in a time span of two to three months?

4.1 Research Sample

The research sample consisted of 82 pupils of the 1st – 4th year of secondary school. Sampling was subject to availability, but also to intentionality in order to ensure equal classes. The research sample was divided into two groups: one group being experimental (EG), which consisted of 40 pupils. Pupils of this group attended one lesson a week for the period of two and half months within the Philosophy for Children program, which was applied to the subject Civic education. It is difficult to compare the application of the Philosophy for Children methods with another program in school education owing to its uniqueness, and so the second, control group (CG), consisting of 42 pupils, did not participate in any program. The experimental and control groups were randomized.

4.2 Research Methods

The character of our research was quantitative, based on a pedagogical experiment. We chose experiment as our research method, because this method, as the only one of the research methods, can prove causal consequences of pedagogical activity. As part of the experimental plan, we used the pre-test and post-test, which both groups underwent.

The most widely used tool for determining the level of critical thinking is the standardized psychological test W-GCTA, known as Watson-Glaser test (Watson, Glaser, 2000), which has been used since 1926. There is also the Lawson (1999) test of critical thinking, however, it is designed for respondents – psychologists, so we did not consider its use. We did not use the Watson-Glaser test for several reasons. One of them is that Watson-Glaser test belongs to the hands of psychologists. This was also admitted by Kosturková (2016) who justifies its use by its great importance for pedagogy. Here it is necessary to mention that the test contains 80 exercises and we did not have sufficient time for its use due to the realization of agreed meetings with the students of the experimental group. The fact is

that the individual Watson-Glaser tests are extensive, and it was not in our competence to change their scope and wording. Our critical thinking tool consisted of 12 questions and the time limit for solving the test was 12 minutes. When evaluating the critical thinking tests, we took into account the factual correctness of the answer, while we also accepted answers with grammatical or spelling errors. We did not evaluate the "eloquence" of the answers, but the ability to encompass the essence to solve the problem. Pupils' free answers in open questions may have some influence on the evaluation of the test, so the evaluation was carried out by two persons who followed the guidelines for the evaluation of the critical thinking test.

In a pedagogical experiment, a dependent variable represented the level of pupils' critical thinking. An independent variable was the activities within the Philosophy for Children program (discussion, questioning, dramatization, role-playing, etc.). By performing the experiment in the control and experimental group (EG and CG), we obtained certain score in the tests we evaluated.

To evaluate the data, we used descriptive statistics, analysis of the paired t-Test for average value and analysis of the difference score (difference between the post-test and pre-test), which focuses on the change between the pre-test and post-test of individual groups. The obtained results were processed and analyzed by the computer program Excel for descriptive statistics methods.

5 Results and Discussion

We assumed that pupils to whom the program Philosophy for Children will be applied experimentally in teaching will achieve a better level of critical thinking than pupils to whom the program will not be applied. We were also interested in the extent, to which we could develop critical thinking by implementing a model class through the P4C program over a period of two to three months.

Table 1 presents descriptive statistics of the pre-test and post-test results of the groups (mean, minimum, maximum, standard deviation, mean error, median) – the scores for the control and experimental groups.

Table 1: Descriptive Statistics on Pre-test and Post-test Scores for Experimental and Control Group

	M	N	SD	SEM	Min	Max	Median
pretest_EG	8.925	40	3.253	0.514	3	15	9
posttest_EG	12.325		3.765	0.595	5	19	13
pretest_CG	8.548	42	2.461	0.380	4	13	9
posttest_CG	8.857		2.374	0.366	4	13	9.5

(N – Count, M – Mean, SEM – Standard Error, SD – Standard Deviation, MIN - Minimum, MAX - Maximum, MEDIAN – Median)

Figures 1 and 2 show box plots which, in addition to a graphical representation of the scores of the experimental and control groups in the pre-test and post-test, also contain descriptive statistics data (unrounded average, minimum, maximum, and median).

Figure 1: Box Plot: Pre-test Scores for Experimental and Control Group

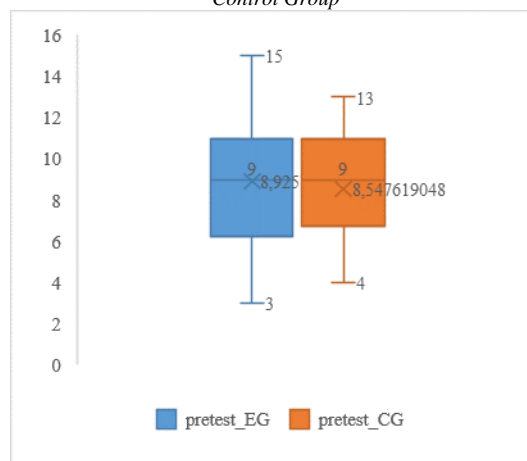


Figure 2: Box Plot: Post-test Scores for Experimental and Control Group

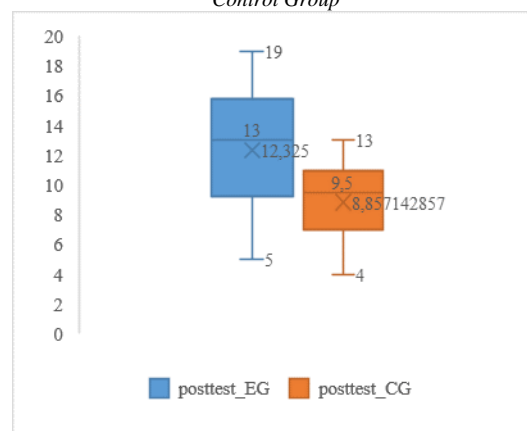


Table 2: Paired t-Test for Average Value

	M	df	t	P
pretest_EG	8.925	38	-9.522	< 0.001
posttest_EG	12.325			
pretest_CG	8.548	40	-1.394	< 0.086
posttest_CG	8.857			

(df – Degrees of Freedom, t-Test Statistics, P – P-value)

The results of the t-test show that the differences in group scores between the pre-test and post-test are significant at a level of statistical significance <0.05.

5.1 Difference Score Analysis for Control and Experimental Group

The difference score was obtained as the difference between the score achieved in the post-test and the score achieved in the pre-test. Table 3 shows descriptive statistics of the difference scores of the experimental and control groups.

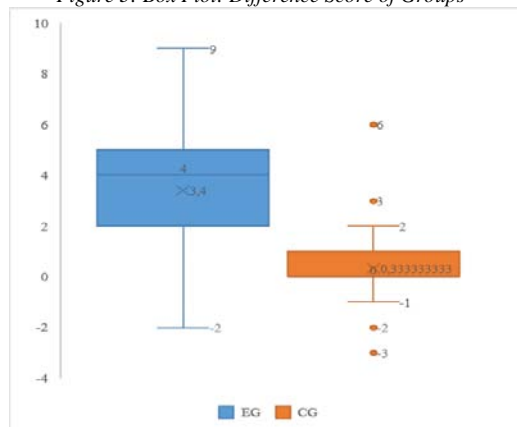
Table 3: Descriptive Statistics on Difference Score for Control and Experimental Group

	M	N	SEM	SD	MIN	MAX	Median
EG	3.4	41	2.193	0.347	-2	9	4
CG	0.333	42	1.476	0.228	-3	6	0

The average difference score in the EG is 3.4 (standard deviation 0.347), which means that EG pupils achieved a better score in the post-test than in the pre-test. The average CG difference score is 0.333 (0.228), which means that CG pupils also

achieved a better score in the post-test than in the pre-test, but only to a small extent.

Figure 3: Box Plot: Difference Score of Groups



To assess whether the difference scores between the experimental and control groups are statistically significant, we used a two-sample t-test for equality/inequality of variance. In order to find out the uniformity of variance, we used an F-test for uniformity of variance.

Table 4: Results of F-Test Difference Score for Equality of Variances

	M	df	F	P
EG	3.4	39	2.208	< 0.007
CG	0.333	41		

Table 4 shows the results of the F-test for equality of variances in groups. The test criterion value F is 2.208 and the corresponding P value is 0.007, which means that at the level of statistical significance <0.05 , there is a significant difference in the variability of difference scores between the experimental and control groups, so we further used the t-test for inequality of variances.

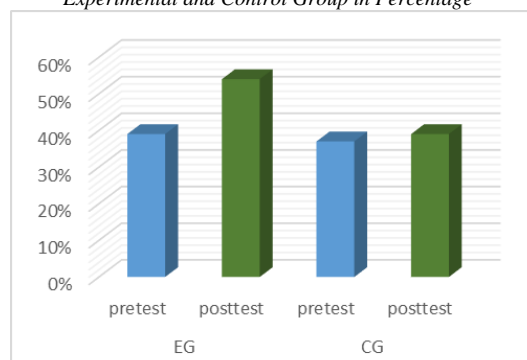
Table 5: Results of t-Test Difference Score for Inequality of Variances

	M	Df	t	P
EG	3.4	68	7.392	< 0.001
CG	0.333			

Table 5 shows the results of the t-test for inequality of variances in groups. The test criterion value t is 7.392, the respective P value is <0.001 , which means that the difference scores of the experimental and control groups are significant at the level of statistical significance <0.05 .

The achieved level of critical thinking in the pre-test and post-test and the difference in the scores achieved by the groups can also be seen in the summary Figure 4.

Figure 4: Comparison of Pre-test and Post-test Results for Experimental and Control Group in Percentage



Based on the results of the experiment, we conclude that our assumptions were confirmed. Pupils to whom the P4C program was applied in their classes have achieved a higher level of critical thinking than pupils to whom this learning strategy was not applied. In view of the fact that in the experimental group the level of critical thinking increased by only 15% thanks to the P4C program within two months and a half, we conclude that this is not a significant, but rather a moderate development of critical thinking. However, we are of the opinion that the long-term or year-round introduction of the P4C program into the educational process would develop critical thinking in a much more effective and significant way.

4 Conclusion

This paper refers to the need to improve the level of critical thinking of Slovak pupils, because pointing out shortcomings in critical thinking has been present in our society for a considerable period of time without significant improvement. We cannot expect a change in the level of critical thinking in the short term. On the other hand, we emphasize that critical thinking can be developed by teachers using targeted methods, and we appeal to the application of activational methods in the educational process. Some activational methods are also used within the P4C program, while all methods in the program are designed to develop critical, creative and committed thinking. However, the process of this development does not take place independently. These kinds of thinking overlap each other, so it is difficult to observe only one kind of thinking. In addition, emphasis is also placed on developing other abilities and skills, such as writing, because methodological manuals also include written exercises. Attention is paid mostly to reading, and the philosophical literary story serves primarily to introduce the topic and to follow model situations of problem-solving.

Quantitative research has not revealed highly innovative results mainly due to the fact that several studies of critical and creative thinking based on the impact of the P4C program on different ages have been conducted abroad in the past (Daniel, Auriac, 2011; Dunlop, 2015; Siddiqui, Gorard et al. 2019). Nevertheless, the research provided a more comprehensive picture of the use of methods of the Philosophy for Children program in secondary schools in Slovakia. It is important that teachers know the theoretical and practical basis of critical thinking through which they should develop the ability to use activational methods to enhance critical thinking. Based on our research, we consider the application of the Philosophy for Children program or its parts to be an effective tool in developing critical thinking. The challenge of encouraging the development of critical thinking in schools should not be just a phrase, but it but should be transformed into a practical and systematic activity affecting in particular teachers who should activate pupils, require greater responsibility for their decisions and support the presentation of their own ideas. Gažovič and Markoš (2017) point out that a critically thinking person does not feed on his mistrust. Such a person sees not only people who cannot be trusted, but also those who deserve his/her trust.

Literature:

1. Bailin, S.: *Critical thinking and science education*. In Science Education. 2002 [online]. [2019-05-11]. Available at: <https://link.springer.com/article/10.1023/A:1016042608621>.
2. Čapek, R.: *Moderní didaktika*. Praha: Grada Publishing, a.s., 2015. 614 p. ISBN 978-80-247-3450-7
3. Castellano, J. et al.: *A Strategy for Teaching Critical Thinking: The Sellmore Case*. In Management Accounting Quarterly, 2017. vol. 18, no. 3, p. 1-10. ISSN 1528-5359
4. Daniel, M., Auriac, E.: *Philosophy, Critical Thinking and Philosophy for Children*. In Educational Philosophy and Theory, 2011. 43 (5), pp. 415-435. ISSN 0013-1857
5. Duchovičová et al.: *Stratégie kritického a tvorivého myslenia vo vyučovaní. Dotazník pre učiteľov a cvičných učiteľov*. In Brečka, P., Valentová, M. 2017. Strategie kritického a tvorivého myslenia v odborových didaktikách výchovných predmetov. Nitra: PF UKF, 2017. p.164-17. ISBN 978-80-558-1227-4
6. Duchovičová, J., Petrová, G., Fenyvesiová, L., Tomšík, R., Groččíková, S., Gunišová, D., Kozarová, N.: *Stratégie rozvíjania kritického myslenia v pregraduálnej príprave učiteľov*. In Studia Scientifica facultatis Paedagogicae, 2018, roč. 17, č. 1. s. 73-84. ISSN 1336-2232
7. Duchovičová, J., Petrová, G.: *Personal competences of absolvents as prerequisite of social inclusion*. In Slavonic Pedagogical Studies Journal: The Scientific Educational Journal, 2016. vol. 5, no. 1, pp. 184-200. ISBN 1339-8660
8. Duchovičová, J., Tomšík, R.: *Critical and creative thinking strategies in teaching internal consistency of the research tool*. In Slavonic Pedagogical Studies Journal: the scientific educational journal. 2017, vol. 6, no. 2. p. 375-394. ISSN 1339-9055
9. Duchovičová, J., Tomšík, R.: *Managerial Competencies of a Teacher in the Context of Learners' Critical Thinking Development: Exploratory Factor Analysis of a Research Tool and the Results of the Research*. In TEM Journal: Technology, Education, Management, Informatics, 2018, vol. 7, n. 2. p. 335-347. ISSN 2217-8309
10. Duchovičová, J., Fenyvesiová, L.: *Applying of Strategies of Critical Thinking by Teachers According to the Teaching Subject and Degree of Education*. In Ad Alta – Journal of Interdisciplinary Research, 2019, vol. 9, n. 1, pp. 49-55. ISSN 1804-7890
11. Dunlop, L. et. al.: *Child-led enquiry in primary science*. In Education 3-13. International Journal of Primary, Elementary and Early Years Education, 2015. 43 (5), pp. 462-481. ISSN 0300-4279
12. Ennis, R. H.: *A logical basis for measuring critical thinking skills*. In Educational Leadership, 1985. vol. 43, n.2, pp. 44-48. ISSN 0013-1784
13. Facione, N. C., Facione, P. A.: *Critical Thinking and Clinical Judgement*. [online]. [cit. 2019-011-03]. Available at: <https://www.insightassessment.com/wp-content/uploads/ia/pdf/CH-1-CT-CR-Facione-Facione.pdf>
14. Fair, F. et. al.: *Socrates in the Schools: Gains at Three-year Follow-up*. In Journal of Philosophy in Schools, 2015. 2 (2), pp. 5-16. ISSN 2204-2482
15. Fenyvesiová, L.: *Teória vyučovania – vybrané kapitoly*. Nitra: PF UKF v Nitre, 2013. 84 s. ISBN 978-80-558-0392-0
16. García-Moriyón, F., et. al.: *Evaluating Philosophy for Children*. In Thinking: The journal of philosophy for children, 2005. 17 (4), pp. 14-22. ISSN 0190-3330
17. Gavora, P. et. al.: *Elektronická učebnica pedagogického výskumu*. Bratislava: Univerzita Komenského Bratislava, 2010. [online]. [cit. 2019-12-19]. Available at: <http://e-metodologia.fedu.uniba.sk>
18. Gažovič, O., Markoš, J.: *Kritické myslenie: Príručka pre stredné školy*. In: N Magazin, 2017. roč. 2, č. 10, s. 1-32. ISSN 2453-9597
19. Grecmanová, H. et al.: *Podporujeme aktívny myšlení a samostatné učení žáků*. Olomouc: Hanex, 2000. 159 p. ISBN 80-85783-28-2
20. Groččíková, S., Duchovičová, J., Fenyvesiová, L.: *Development of future teachers critical thinking through pedagogical disciplines*. In Slavonic Pedagogical Studies Journal: The scientific educational journal, 2018. roč. 7, č. 1, s. 101-109. ISSN 1339 – 9055. DOI 10.18355/PG. 2018.7 . 1.9
21. Groččíková, S., Kozárová, N.: *Metacognitive skills of pregraduate teacher students as a condition for development of their key didactic competences*. In SGEM 2017: 4th International Multidisciplinary Scientific Conference on Social Sciences and Arts. Proceedings Volume 2. Albena: STEF92 Technology, 2017. pp. 315-321, ISBN 978-619-7408-22-5
22. Halpern, D. F.: *Teaching for Critical Thinking: Helping College Students develop the Skills and Dispositions of a Critical Thinker*. In New Direction for Teaching and Learning, 1999. no. 80, pp. 69-74. ISSN 0 2710633. DOI 10.1002/tl.8005
23. Halpern, D. F.: *Trouth and Knowledge*. New York, London: Taylor & Francis, 2014. [online]. [cit. 2019-05-11]. Available at: https://tandfbis.s3.amazonaws.com/rt-media/pdf/9781848726291/chpt_1.pdf
24. Higgins, S. E.: *Critical thinking for 21st-century education: a cybertooth curriculum?* In Prospects, 2014. no.4, pp. 559-574. ISSN 0033-1538
25. Kosturková, M., Ferencová, J.: *Stratégie rozvoja kritického myslenia: Kritické argumentovanie, debatovanie, písanie a organizovanie poznatkov*. Bratislava: Wolter Kluwer, 2019. 236 s. ISBN 978-80-571-0049-2
26. Kosturková, M., Ferencová J., Šuťáková, V.: *Kritické myslenie ako dôležitá súčasť kurikulárnej reformy na Slovensku: Skúmanie fenoménu v slovenskej časopiseckej literatúre*. 2018. [online]. [2019-05-11]. Available at: https://www.cupress.cuni.cz/ink2_stat/dload.jsp?prezMat=121787
27. Kosturková, M.: *Rozvoj kritického myslenia žiakov stredných škôl*. Prešov: Prešovská univerzita v Prešove, 2016. 187 s. ISBN 978-80-555-1755-1
28. Kotrba, T, Lacina, L.: *Aktivizační metody ve výuce. Príručka moderného pedagoga*. Brno: Barrister & Principal, o. p. s., 2015. 158 s. ISBN 978-80-7485-043-1
29. Lai, E.: *Critical thinking: A literature review. Pearson's Research Reports*. 2011. [online]. [2019-05-11]. Available at: <http://images.pearsonassessments.com/images/tmrs/CriticalThinkingReviewFINAL.pdf>
30. Lam, C.-M.: *Continuing Lipman's and Sharp's Pioneering Work on Philosophy for Children: Using Harry to Foster Critical Thinking in Hong Kong Students*. In Educational Research and Evaluation, 2012. 18 (2), pp. 187-203. ISSN 1380-3611
31. Lawson, T. J.: *Assessing Psychological Critical Thinking as a Learning Outcome for Psychology Majors*. In Teaching of Psychology, 1999. Vol. 26, no. 3, p. 207-209. ISSN 1532-8023.
32. Lipman, M.: *Critical Thinking: What can it be?* 1988. [online]. [2019-05-11]. Available at: <http://journal.viterbo.edu/index.php/at/article/view/403>
33. Lipman, M.: *Thinking in Education*. United Kingdom: University Press, Cambridge, 2003. 304 p. ISBN 0-521-01225-2
34. Oravcová, J.: *Vývinová psychológia*. Banská Bystrica: Univerzita Mateja Bela, 2012. 234s. ISBN 987-80-8083-937-6
35. Othman, M., Hashim, R.: *Critical Thinking & Reading Skills*. In Thinking: The Journal of Philosophy for Children, 2006. 18 (2), pp. 26-34. ISSN 0190-3330
36. Paul, R. W., Elder, L.: *Critical Thinking: Concepts and Tools*. 2006. [20-10-2019] Available at: https://www.criticalthinking.org/files/Concepts_Tools.pdf
37. Paul, R. W., Elder, L.: *Critical Thinking: The nature of critical and creative thought*. In Journal of adolescent development, 2006. Vol. 30, no. 2, pp. 34-35. ISSN 0738-0593
38. Paul, R. W., Elder, L.: *The Art of Socratic Questioning. Dillon Beach, CA: Foundation fir Critical Thinking*, 2006. 96 p. ISBN 978-0-944583-31-9
39. Petrasová, A.: *Kriticky mysliaci učiteľ – tvorca kvality školy*. Prešov: Rokus. 2008. 136 s. ISBN 978-80-89055-88-3
40. Porubský, Š. et al.: *Škola a kurikulum: Transformácia v slovenskom kontexte*. Banská Bystrica: Belianum, 2014. 190 s. ISBN 978-80-557-0839-3
41. Scriven, M., Paul, R.: *Critical thinking as defined by the national council for excellence in critical thinking*. 1987. [online]. [2019-05-11]. Available at: <http://www.criticalthinking.org/pages/defining-critical-thinking/766>
42. Scriven, M., Paul, R.: *Defining critical thinking. The Critical Thinking Community: Foundation for Critical Thinking*. 2007.

- [online]. [2019-05-11]. Available at: http://www.criticalthinking.org/aboutCT/define_critical_thinking.cfm Schafersman
43. Siddiqui, N., Gorard, S. et. al.: *Can programmes like Philosophy for Children help schools to look beyond academic attainment?* In *Educational Review*, 2019. 71 (2), pp. 146–165. ISSN 0013-1911
44. Snyder, M. J., Snyder, L. G.: *Teaching Critical Thinking and Problem Solving Skills*. 2008. [online]. [2019-05-11]. Available at: https://pdfs.semanticscholar.org/dcb3/c6910cc8a78c3b6135d58b6e0c5479e2b2b9.pdf?_ga=2.258349130.11382746.1578387908-1619832163.1574858385
45. Tileston, D. W.: *10 Best Teaching Practices*. Thousand Oaks (CA): Corwin Press, 2005. 111 p. ISBN 978-1-4129-1472-7
46. Topping, K. J., Trickey, S.: *Collaborative Philosophical Enquiry for School Children: Cognitive Effects at 10–12 Years*. In *British Journal of Educational Psychology*, 2007. 77 (2), pp. 271–288. ISSN 2044-8279
47. Tóthová, M.: *Rozvoj tvorivosti na 1. stupni ZŠ*. Nitra: PF, 2006. 179 p. ISBN 80-8094-033-9
48. Tuma, M.: *Tvorivý proces človeka. Banská Bystrica: Úrad priemyselného vlastníctva Slovenskej republiky*, 2001. 423 p. ISBN 80-88994-08-X
49. Velmovská, K., Bartošovič, L.: *Developing critical thinking skills in physics classes*. In G. Gibson (Ed.), *Critical thinking: Theories, methods and challenges*. 2016. [online]. [2019-05-11]. Available at: <https://trove.nla.gov.au/work/204407326?q&versid=224398672>
50. Watson, G., Glaser, E. M.: *Watson-Glaserov test hodnotenia kritického myslenia: Forma C*. Bratislava: Psychodiagnostika, 2000. 69 p.
51. Williams, R. L.: *Targeting Critical Thinking Within Teacher Education: The potential Impact on Society*. In *The Teacher Educator*, 2005. vol. 40, no. 3, pp. 163–187. ISSN 0887-8730
52. Willingham, D.: *Critical thinking: Why is it so hard to teach?* In *Journal Arts Education Policy Review*. 2010. [online]. [2019-05-11]. Available at: <https://www.tandfonline.com/doi/abs/10.3200/AEPR.109.4.21-32>
53. YAN, et. al.: *Meta-Analysis of the Effectiveness of Philosophy for Children Programs on Students' Cognitive Outcomes*. In *Analytic Teaching and Philosophical Praxis*, 2018. vol. 39. no. 1. pp. 13–33. ISSN 0890-5118
54. Žák, P.: *Kreativita a její rozvoj*. Brno: Computer Press, 2004. 330 p. ISBN 80-251-0457-5

Primary Paper Section: A

Secondary Paper Section: AM

TEACHERS' PERCEPTION OF THE BOOKS OF SUBJECTS OF ELEMENTARY REALIA WITH AN EMPHASIS ON FOREST ENVIRONMENT TOPICS

^aDANA KOLLAROVA, ^bALEXANDRA NAGYOVA

Constantine the Philosopher University in Nitra, Department of Pedagogy, Drazovska cesta 4, 94974
 email: ^adkollarova@ukf.sk, ^balexandra.nagyova@ukf.sk

This study was supported by the Slovak Research and Development Agency under the contract No. APVV-18-0484 as a part of the research Forest Pedagogy and Education to Sustainable Development in pre-primary and primary education.

Abstract: The research paper shows primary education teachers' opinions on the content of elementary realia subjects, more specifically of the subject Elementary Realia for the 1st and 2nd grade of primary schools, which emphasizes topics related to forest environment and environmental protection. Theoretical outcomes of the study are rooted in attempts of anchoring the content of the syllabus for this subject in standardized documents, hence in the Syllabus in the National Education Program, while highlighting the ever-changing content and formal instability of this subject. Due to these reasons, we were observing how primary education teachers perceive the content of this subject. We were evaluating what subjective characteristics teachers assign to natural science topics, that are related to forest environment and environmental protection.

Keywords: Elementary realia subject, elementary realia, cognitive processes, forest pedagogy

Introduction

The subject of Elementary realia in Slovakia is taught in 1st and 2nd grade of primary schools and represents a prerequisite for other subjects such as Natural Sciences and Homeland Studies that are taught in 3rd and 4th grade. However, the syllabus of this subject currently lacks content stability. The focus is on a pupil's education with an emphasis on learning and understanding a pupil's closest natural and social environment. The subject of Elementary realia is very specific in its nature since it does not only educate a pupil but also includes components of upbringing, pupil's language competency development as well as family education. When teaching this subject, one must consider several factors. Pupils come from various environments, from different family and living backgrounds, being used to different ways of spending their free time. Other factors are that pupils have different vocabulary levels and different levels of ability to set their own value system. These are the reasons, why the process of anchoring the content in the syllabus for the Elementary realia subject is so unique and can be challenging.

As a part of our research question for the project *Forest Pedagogy and Education to Sustainable Development in pre-primary and primary education* (see www.lesnapedagogika.sk), we conducted several partial pedagogy studies. These studies focus on primary education Elementary realia textbooks analyses, strategies in teaching natural science topics, evaluation of teachers' and tutors' opinions and experience with forest pedagogy, or on ongoing experimental study related to the application of forest pedagogy programs in pedagogical praxis. In this research paper, we present some of the research results, that document primary education teachers' opinions on topic proposals, their representation and recency in current Elementary realia textbooks. We were also observing how teachers perceive the topics of the forest environment, by which we can develop a child's relationship with its natural environment and the need for its protection. Moreover, we can help a child to see its natural environment as a place for spending its free time. We build upon assumption, that children in the first years of primary education strive to discover things and phenomena, which encourages them to think about how these things work. Elementary realia subjects are based exactly on this kind of conceptual thinking, that emphasizes the development of pupil's cognitive functions.

1 Transformations in the Elementary realia subject

As mentioned in the introduction, the Elementary realia subject is a unique subject taught in 1st and 2nd grade of primary

school. Despite this fact, we need to prompt, that in Slovakia authors address Elementary realia subject only rarely. A great addition to the subject of Elementary realia was an expert publications and teaching materials from K. Navratilova (1996), that does not lose its recency. Alternatively, mentionable addition was a historical summary of this school subject published by J. Kopacova (2011) or by A. Douskova (2003), the coauthor of the Elementary realia textbook.

Navratilova (1986) states that school subjects about nature and society were introduced to schools' education programs gradually with the start of the modern age, however mostly with the beginning of humanism period. Elementary realia were not part of primary education or taught as an individual subject, rather they were a part of school subjects like Mother Tongue Studies, specifically, part of Reading. It was only later when they started to appeal that pupils should be besides trivia subjects also taught natural sciences. In Slovakia, the development of teaching content about nature and society in primary education was on the same level as in the Czech Republic. However, in the Czech Republic, as K. Navratilova (1986) states, live discussions on this topic and opinion diversity were conducted, which Slovakia lacked. Pupils were introduced to knowledge about nature and society in a subject called *Exercising speech and mind*. The lectures for this subject were held three times a week. This is supported by J. Kopacova (2011), as she clarifies, that three lectures a week were occurring in the 1st through 3rd grade of primary school, but it was indeed taught as a part of Mother Tongue Studies. In 1927 a new syllabus was created. These understood subject of Elementary realia as the centre of primary education. It was only in 1933, when this subject was established as an individual school subject, however not for long. M. Nogova (2008) states, that later on, Elementary realia subject was again part of mother tongue studies as a result of political changes in 1948 and only far ahead in 1960 subject of natural science was established under the name Study of Things. Already then, the education praxis has shown that pupils mastered the knowledge that was provided to them already in pre-primary schools, which resulted in their decreased motivation to learn. There were attempts to change this negative phenomenon by a reform in 1976 when the subject was again renamed to the distinct subject of Elementary realia, and it was perceived as a complex integrated subject. As stated by J. Kopacova (2011), we can agree that the goal of the Elementary realia subject was to prepare pupils for being able to observe natural and social phenomena in their everyday life experiences and to be able to name and utilize objects in nature. In this period, concepts of visualization and observation have again returned to schools. The teaching process was supposed to aim for a true understanding of the surrounding world. The topics were established around seasons of the year. To remind, these goals required, like any other school reform, primarily a change in a teachers' approach in the teaching process of this subject. Unfortunately, this fact did not receive enough attention.

Another content reformation of the Elementary realia subject happened in the academic year 1991/1992 when the syllabus content was split into three areas – nature, society, human being. The year 1995 also brought a change to the content of this school subject, though, these changes were not significant. However, substantial content improvements were made with the introduction of school reform in 2008, and these were significantly contingent by the fact that the Elementary realia subject (with the upgraded name - Natural Science) was classified in the education area of Human and Nature. New activating methods, experimental and observation topics were also introduced with this reform, while those of which implementation in the classroom was promoting pupil's activity and execution in the classroom, were in majority. Exercise books slowly also found its way onto the market. Currently, there are five different exercise books on the market, however it is important to know that only one of these has an approval clause,

which is yet another proof of the formal instability of this school subject and its content. The last change to the Elementary realia subject was made in 2015 when this school subject again regain its name *Elementary realia*, however, the content did not change significantly. The content comprised predominantly of natural science topics. By the performed textbooks analyses (Duhancikova, Kollarova

2018), (Nagyova, Kollarova 2020) we too observed, that they consist predominantly of natural science topics. In the 1st grade of primary schools, these topics represent 82.20% and in the 2nd grade 74.60% of the textbook material. We consider this to be an important downside, as this school subject should be part of following educational areas: Human being and nature, Human being and society, Human being and world of labour. Therefore, we believe that this school subject should be meaningfully supported by educational-artistic activities, as emotions also play a role in this school subject. The school subject in its essence consists of both, natural and social sciences, which should be in balance.

One part of our research also showed that teachers express dissatisfaction with the time allocation for this school subject, which they consider insufficient – in the 1st grade it is one hour lecture a week and in the 2nd grade two hours a week. We indeed agree with these teachers, *because it is just a first-grader, who needs to develop a system in observed social and natural phenomena, that are becoming new objects in pupil's everyday observations in a changing school and natural environment*. Our opinions are supported by M. Klusak (2010), who claims, that the Elementary realia subject is understood as a subject that is not given any educational importance. He points out the low status of this school subject. He also emphasizes, that teachers who focus rather on the cognitive difficulty of this subject, forget about an emotional component, that leaves pupils with a feeling of uselessness of their work.

1.1 Some of Elementary realia textbooks specifics

Syllabus content should be processed in detail in textbooks. In the case of pupils of 1st and 2nd grades, it is more of an exercise book, since pupils do not yet master reading on the level, that would allow them to work with written text. Exercise book consists mostly of exercises.

Our goal in the presented research paper is not to evaluate the structure and content of these exercises, rather the topics in the syllabus. Exercise book supposed to serve as a specific learning tool for a student, that should fulfil functional educational requirements, or as J. Prucha (1998) similarly describes the expected purpose, it should fulfil didactic means in the education process. E. Petlak (2004) writes about 8 functions: motivational, communication, control and guiding regulation, developing and educational, application, integration and innovation function. Additionally, J. Skalkova (2007) claims, that currently, a textbook is created more by a content, that has some elements of exercise book, such as exercises for pupils' individual work, experimentation and observing or exercises for enriching pupil's experience. Current Elementary realia textbooks also take this form. P. Knecht (2008) states, that textbooks do not represent only syllabus content, but also determine which activities should pupils be able to perform based on this content. Consequently, textbook authors should be aware, that they have the opportunity to develop pupils' higher cognitive processes than just memory and comprehension. Indeed, we cannot view textbooks only based on their attractiveness for a pupil, but also have to consider textbooks' educational-didactic functions.

The authors of one of current Elementary realia textbooks R. D. Adame and O. Kovacikova (2015) state, that pupils in the 1st grade of primary school are introduced to a real-world of nature by observing natural phenomena. Moreover, pupils also adopt knowledge from the areas of public administration or get to know the geographical aspects of the country. The authors of another current Elementary realia textbook L. Zigova, A. Jancichova and A. Douskova (2006) also explain contents of

educational areas, while stating that by the social contents, a pupil acquires a basic understanding of oneself in various situations, creates social contacts and develops own self, relationships, tolerance and cooperation skills. Natural science contents provide pupils with a knowledge about living nature, where pupils get to know living nature's characteristic features, as well as non-living objects in nature. The exercises in the textbook help pupils to familiarize themselves and observe changes that occur in nature, which leads them to understand these changes in nature, in the life of plants and animals, by which pupils learn to wisely use and protect the nature. Here we appreciate the fact that authors view the content comprehensively. They understand the underlying condition of acquaintance – contact and communication with both, people and nature. They also understand the need to develop pupils' ability to protect nature, by which they can also stimulate their personal competencies.

As stated above, the events occurring in nature are the main part of this school subject. Despite this, we would only hardly find terms such as *forest, forest environment, coniferous trees, forest animals and their feeding* in the National Education Program. Among others, the following goals of the Elementary realia subject are listed in the National Education Program (2017):

- develop self-observation ability in a way, that pupils can obtain new and enrich existing information and knowledge from everyday situations
- create own argumentative-based judgement
- cooperate in solving simple observation activities, while a part of cooperation requires actually knowing and effectively utilizing one's knowledge when drawing conclusions
- be able to argue using own experiences, so-called development of scholar discussion to given topic, that is adequate to pupils' age

We believe that if teachers rigorously headed towards these goals, pupils would not have issues to understand living objects and phenomena and to be aware of the consequences of their own responsible or irresponsible behaviour towards themselves, nature and towards other people. Already in the pre-primary period, we observe the development of environmental literacy. Children in this age are able to identify the diversity of animal and plant world, describe ways of nurturing some animals as well as describe the human body, name the origin of water or air in nature and comprehend why are those necessary for our living. We can find several answers and connections to these topics in the teaching on forest example. Nevertheless, A. Wiegerova (2003), co-author of another textbook recalls that the emphasis in the teaching process of the Elementary realia subject is placed on pupil's future application and understanding of these concepts in real life, rather than overloading pupils with the facts. We can utilize teaching in the forest environment to reach this goal or alternatively by inviting external lecturers – forest pedagogists. We believe that just like the process of acquiring literacy is conditioned by experiencing, similarly, the process of acquiring environmental literacy cannot omit the factor of experiencing.

2 Forest pedagogy in and outside the school

In Slovakia, we offer the option to invite foresters – forest pedagogists to Elementary realia lectures, however, many teachers do not know about this possibility. Therefore, it is also one of our research projects goals, to better promote this possibility. Above mentioned cooperation with external lecturers and institutions can improve our pupils' natural sciences literacy ranking, who currently ranked among the last third of the OECD countries (Slastanova, 2014, Lakatosova, 2015). Teachers' mission should be to understand that in environmental literacy we must pay attention to pupil's ability to form values and develop attitudes towards the natural environment. It is not enough when pupil only acquires new knowledge by classroom lectures. Rather, a child needs to be able to develop attitudes

based on this knowledge presented in classrooms. The right way to do so maybe just the forest pedagogy education programs based on experiential learning in the school system as well as outside the school environment, that can be taught by foresters.

Forest pedagogy or teaching about forest and forest environment by a forester – forest pedagogist, should not represent any competition to classroom-based learning, but rather an enrichment element in the education process. This approach to education should provide an opportunity for both groups, pupils and teachers, to learn and acquire new knowledge while forming an understanding of the forest's needs and the need for environmental protection - including protection of plants, animals, soil, water and air resources, as well as understanding the importance of foresters' work. L. Marusakova (2010) defines forest pedagogy as a part of environmental education. It is education about forest ecosystems and education of human beings towards sustainability on the forest example. Forest pedagogy activities are provided by certified forest pedagogists. They utilize activating methods, forms of experiential learning and project-based teaching methods in the education process. This kind of education has also a significant impact on human's emotions. Two group of authors D. Chlposova, V. Jaloviarova (2019) as well as Loyova, Marusakova, Jaloviarova (2018) speak about forest pedagogy as a concept, that utilizes forest as a unique living textbook.

In countries like Austria, Germany, or Switzerland forest pedagogy has a longer history than in Slovakia. Therefore, these countries served as an inspiration for the growth of forest pedagogy in Slovakia. In 2001 around 500 foresters attended the course in Austria, which supports the claim that in Austria they put a great emphasis on forest pedagogy (Lasak, 2001). Moreover, in Austria, the forest pedagogy is also covered by the law. In the Czech Republic, first forest pedagogy courses took place in 2002 and followed the Austrian model. The training centre in the Czech Republic is Forestry High School in Hranice na Morave. In 2006 the forest pedagogy course was accredited by the Ministry of Education, Science, Research, and Sport of the Slovak Republic. Forest pedagogy courses for foresters are administered by National Forest Center – Institute of Forest Advisory and Education in Zvolen (NLC- UPLV Zvolen), which is the central institution mandated by the Ministry of Agriculture and Regional Development of the Slovak Republic to coordinate and direct the education program of forest pedagogy. National Forest Center in Zvolen (see www.nlc.sk), which is our partner and co-author of the above mentioned research project has an opportunity to raise qualified forest pedagogists thanks to its accredited education program. D. Kollarova, the co-author of this research paper, also participates in the education of these pedagogists by taking part in activating methods of creative drama as a part of National education program. Foresters complete 80 hours of lectures on how to educate children in pre-primary school and early primary school age in areas of natural science. Besides psychology of development, pre-primary and elementary pedagogy including didactic and education standards, they are also prepared in areas of activating or experience learning methods as well as project-based teaching. Czech foresters K. Bjacek and A. Sedivy (2018) understand the role and a figure of a forest pedagogist to be a competent expert on forest economics, who provides information about the forest, explains its functions and ecosystems through various programs aimed primarily to children that are focused on the understanding of the forest sustainability principles. D. Doudova (2018) similarly describes the job responsibilities of forest pedagogist, who educates a group of people by utilizing various forms of games and activities related to forest topics and allows them to experience an adventure in the forest environment as well as familiarize themselves with forester's role and duties.

Forest pedagogy is to a great extent an asset to education of children not only thanks to the knowledge about a forest that it offers but also thanks to the ability to raise awareness about forest environment and the need of foresters' profession. This can bring a significant increase in interest in the forest environment and an understanding of the need for forest

protection for the needs of human existence. To some extent, it will also refute existing medialized picture of forester's work, which is unfortunately often misinterpreted by teachers as well as parents.

3 Research – Teachers' opinion on Elementary realia subject contents

The above introduced theoretical part of the issue is our basis for theoretical starting points of the research. We defined them by analysing and synthesizing of professional literature on given subject matter. After narrowing down the research problem we formulated the goal of our research – To find out *how primary school teachers perceive the current Elementary Realia subject contents and what role could the forest pedagogy play in it?* There is no similar research focusing on teachers' opinions on Elementary realia subject contents in Slovakia. Its main advantage is that we can contribute to more precise subject contents with an emphasis on its didactic structuring.

3.1 Research strategy

We decided to use a quantitative-qualitative research strategy in our research. We chose the questionnaire method in the quantitative part of the research and the semi-structured interview for the qualitative part. Taking into consideration the descriptive nature of the research problem, we did not form the hypotheses. We used following research questions:

- What positives and negatives do primary school teachers attribute to structured contents of the Elementary realia subject?
- How do primary school teachers rate the Elementary realia textbooks with an emphasis on its content?
- What experience do the teachers have with the Forest pedagogy, and whether they think it should be part of the Elementary realia subject?
- How interested are pupils in learning about the forest environment?
- In which curriculum do they see a room for teaching about responsibility and long-term sustainability?

Within the questionnaire method, we created a research tool questionnaire. It consisted mainly of open-ended questions, but there were also the Likert scale data entries. In terms of the questionnaire method, we addressed 115 respondents. It was necessary for them to be from different regions of Slovakia and to have at least 5 years of experience in pedagogy to ensure that they have already taught the Elementary realia subject. 104 questionnaires were returned. After evaluating the data from questionnaires, we created a plan of individual interviews. It was a semi-structured interview. The questions were based on the questionnaire answers, that we needed to compare or specify. Therefore, we addressed the primary school teachers, who have been teaching for at least 5 years and have been teaching the Elementary realia subject for at least two years. The research group consisted of 12 participants.

3.2 Research outcome and its interpretation

At first, we will state to which topics of the **Elementary realia subject** the teachers (participants) attribute **importance**, and which topics would they amend or exclude. We used the questionnaire with open-ended questions for collecting opinions. We received two proposals from each respondent. We evaluated total of 108 answers. According to the occurrence of their frequency, these were the prevailing suggestions – teachers would suggest adding the topic *Seasons* for the first grade and *Animals in the forest* for the second grade. On the other hand, these topics were recommended to be excluded from the subject contents – *Light and shadows* for first grade and *Filtration and evaporation of water* for second grade.

Regarding the addition of topics to improve the subject contents connected to the topic *Animals in the forest*, there was a frequent request to add following topics for the first grade: *About family*,

Animal families, Months of the year, Holidays in the year, Me as a personality. On the contrary, they would suggest excluding following topics: *Pendulum, Time and its measurement, Transparency.* Regarding the second grade, they would recommend adding the topics *Nature Conservation, Health Care, Living and Inanimate Nature, Pets.* And they would suggest excluding the topics *Plan - how not to get lost, Dissolving substances, Exploring the universe, How fog is formed.* It follows that teachers would suggest adding several topics that are more related to living nature, which includes both humans and animals. On the contrary, physical or chemical experiments were suggested to be excluded. The question is whether these topics are difficult to grasp, or is it really, as we stated in the theoretical background, that teachers perceive these topics negatively because the experiments are supposed to be performed in the classrooms.

However, the answers of the respondents also showed that some of the topics are considered to be inappropriate for pupils due their age. The answers were also supported by using a qualitative method – an interview. Here, the participants decided not only on adding some topics, but also on moving the topics to another grades. The most frequent topic in the Qualitative data was topic *Time*, which they would recommend for second grade. They explain their statement by saying that lots of pupils struggle to learn to tell the time by using analogue clocks. The pupils of the first grade already understand the concept of time, therefore it is often used in teaching methods when measuring time by using hourglass, clapping, pendulum or counting. They even enjoy making hand clock or playing with it, but they have trouble determining the real time. This appears not to be a problem with digital clock. Interviews with the participants also confirmed that they would recommend the subject matter of *Substances and their states, Dissolution and Melting* for higher grades.

There was a consensus between the answers from questionnaires and interviews. It was suggested to add *topics focusing on environmental education of pupils.* Although it was not the most frequent suggestion. We consider this to be a matter that needs our attention. Some of the respondents said that it is necessary to devote more time to *teaching about their own regions, districts or villages.* They think that pupils should *get to know the nature, parks, history and traditions of their surroundings.* Apart from the above topics, they had no more comments on the changes of the subject contents. They rather focused on the scope, concept, time allocation and logical arrangement of topics, because according to them, there is no system. This was also confirmed by the participants in the qualitative part of the survey. They agreed that the curriculum is for 3 lessons per week, rather than 1 or 2.

Concerning the previous entry, we were also interested in what they consider to be positive or negative regarding its contents. The interview results showed that the respondents have an extensive experience in teaching this subject. That helped us to identify positives and negatives. As shown by the research data, they attribute more positives to this subject. They stated that it helps to develop pupils' personality, their knowledge, skills and it also shapes their perception as well as behaviour. *It also helps them to fully use their knowledge and skill set. It encourages them to perceive themselves as part of nature and the society. At the same time, it forces them to accept and adhere to certain standards of behaviour. They perceive and distinguish ecological as well as biological contexts and by using already acquired knowledge they acquire and consolidate responsible behavior not only towards themselves, but also towards their surroundings, people, animals and nature.*

They consider the fact that the topic covers several areas of everyday life, its activities, nature and the environment in which they live, to be significantly positive. Respondents also appreciate that almost all the topics of Elementary realia subject are related to everyday life, to nature, i.e. to the pupil's immediate surroundings. They perceive this as one of the reasons why it is easier for pupils to learn the curriculum. They

also appreciate that it stimulates their scientific thinking and scientific approach to life, nature, surroundings, landscape and homeland. There was a great number of answers suggesting to focus more on topics such as *Environment, Plant care, Excessive use of chemical substances, and How not to pollute the environment, not only for humans but also for animals.* Respondents stated that pupils are very interested in learning about these topics. They want to talk about it and suggest various examples of how to fight against environmental pollution. There is a need to carry out qualitative research that would focus on the opinions of children, pupils and students and examine what subjective characteristics they attribute to environmental protection.

Another positive aspect of the contents of Elementary realia subject is according to the teachers the possibility to use and vary the use of teaching aids. There are also several teaching aids on the market, which allow them to implement activating methods in teaching - *observation, morphological exercises, research, exploration, making assumptions,* etc. This confirms the need to implement activating methods into teaching. The participants emphasize that experiential learning is the best method for students how to achieve positive learning outcomes and they add: *There is an incredible number of opportunities how to introduce and explain the topic to students – teaching aids, electronic kits, videos, internet, etc. They see the positive in the fact that not only can they make experiments, but subsequently they can lead the discussion together. That is beneficial for both the pupils and the teacher.*

However, there are also some negative aspects. But interviews have shown that there are significantly fewer negative aspects than positive. Majority of the respondents did not comment on negative aspects in the questionnaires. The most frequent negative aspect was the *subject contents*, more precisely the illogical outline of textbooks. The subject has undergone several changes in the last twenty years, but the textbooks do not reflect on these changes. The participants, who commented on the negative aspects, agreed that the contents of this subject and textbooks was more appropriate before the reform, i.e. before 2008. They stated that the curriculum was more age-appropriate and there was enough time for walks and experiments. They claim this despite the fact that they are aware of the matter that they did not have so many teaching aids. They stated that *today are the standards unreasonable and pupils' scientific literacy is at the low level. They pointed out that less is more.* These opinions were gained by comparing the results of the questionnaire method and individual interviews.

As mentioned in the theoretical background, the textbooks have also undergone several changes and of the current five textbooks, only one has an approval clause. One of the positives of the textbooks is the fact that *the worksheets offer ideas for experiments and varied tasks that are based on real life themes and are supported by extensive visual material.* Concerning the variety of tasks, they are different for each subject. But by conducting the content analysis we found out that a relatively high percentage of them (41-57%) are comprehension tasks and 19-33% of them memorization tasks. Only up to 10% of other thought operations such as *analysis, application, evaluation or creativity* are represented in each textbooks. They consider the fact that they do not have appropriate conditions or enough time for the mentioned experiments as negative. They emphasized that there is no system and many of the topics are not age-appropriate, they are more suitable for older students. They also perceive negatively that several subjects are rather superficially grasped and therefore the pupils are not interested in them. On one hand, teachers appreciate that the topics are from real life, but here their opinions differ. They think that the curriculum does not go into depth and provides rather superficial information. That can also be a consequence of the fact that the topics that are included in the curriculum are difficult to grasp. Pupils do not have the opportunity to use their own experience and concrete ideas, which is necessary when talking about more difficult thought operations. The inability to use a particular idea can also make some of the topics uninteresting for them.

Based on the solution of the research problem in connection with our research project in the field of forest pedagogy in pedagogical practice, we were also interested in opinions on the use of forest pedagogy within Elementary realia subject and opinions on the conditions for education for sustainable development. We assumed that by observation or learning in the natural environment - in the forest environment, we have the opportunity to build a positive relationship to nature and to the environment in which the pupils live. We wanted to know to what extent is the forest pedagogy known and widespread among primary school teachers. We were interested in whether during their pedagogical practice they have ever encountered forest pedagogy, what importance they attribute to it in terms of primary education, and to what extent the pupils like the topic of the forest. The field of forest pedagogy education is relatively uncommon, so we assumed that teachers will not have much experience with it. We asked if and where they dealt with forest pedagogy. We received 11 types of answers to the question, with the largest representation of 93 answers - was the answer that they had not yet the opportunity to deal with it. Even if they came across a forest pedagogy, it was in the library during a discussion with a forester or hunter, on the Internet, in the media or during a school trip. Some teachers also stated that they became familiar with it while preparing for the profession. In two cases, they stated that they met with a forester on the occasion of Children's Day or St. Hubert' Day. Only one participant stated that they had the opportunity to cooperate with a forest pedagogue half the day. She evaluated this meeting very positively because, in addition to playing games and organising competitions on the campus, which resembles a forest environment, there were also activities to develop students' creativity. Pupils also appreciated the hunting exhibition of trophies, an explanation of how ecosystems works in the forest and life in the forest in general. The teacher pointed out, that the didactic games strongly affected the pupils because they wanted to return to them and build on the acquired knowledge. Among other things, she also stated: *In our primary school we cooperate with a forest pedagogue and we meet her twice a year in discussions, on the school premises or in the village and its surroundings. We go to listen to the sounds of birds, collect medicinal herbs, observe nature, surroundings, beautify the environment near the school, forest paths, sidewalks, feed animals, clean the stream, play and perform fun tasks in nature and in a nearby park.*

In one case, they also stated that they had responded to the protection association's offer. We can state that the core of forest pedagogy – didactic activities with children in the forest environment with a specific educational goal and content implemented by a qualified forest teacher - is not yet a stable part of the education process in schools. The school will even respond to the offers of conservation organizations, whose lecturers have no education for teaching topics about the forest and the forest environment, or even experience with the forestry profession. Enthusiasm is definitely not enough in this case, a certain amount of expertise is required. Sometimes only the enthusiasm without expertise can be harmful. The above mentioned views resulted from the discussions that were part of our professional seminars with teachers. Including forest pedagogy in pre-school and primary education with emphasis on the goals of the State Education Program, in the formal and non-formal level of education, is also one of research tasks. We have found out that there are suitable school premises in most of the schools and that there can also be found some trees on the premises.

The fact that teachers are not familiar with the core of the forest pedagogy and do not have specific experience with a forest pedagogue in the conditions of teaching process is also proved by their opinions. We found out that the respondents are not determined whether some topics about the forest environment should be taught by an expert from the external environment, specifically a forest teacher or not. Up to 42% of all the respondents were not able to make a decision in terms of this subject matter. Despite the fact that they have no experience with forest pedagogy, a relatively high percentage of 29% attaches

great importance to it, or more precisely, on a 7-point scale (7 is the most), the values of 6 and 7 was attributed by 46% of respondents, which is almost half of them. This means that the forest pedagogy can definitely find its place in contents of Elementary realia subject in primary schools. We would like to remind that the value of 7 (means "very important") was the second most saturated value on the scale.

In terms of the forest pedagogy, we were interested in the importance that teachers attach to topics of the forest and the forest environment in the teaching of Elementary realia subject. According to them, these topics should not stay on the periphery. They are aware of the fact that topics related to the forest environment are not only part of the Elementary realia subject, but also part of other subjects – such as Reading, Art Education, Mathematics, etc. They emphasize that these topics are not only interesting for pupils, but also necessary for them. They stated *that children do not go to woods very often nowadays, so some information may be new to them. Especially the conversations about animals are always interesting for them.* Other participants expressed a similar opinion, stating that they would consider teaching these topics *in the forest or in a territory reminiscent of the forest, to be the most effective.* Their experience also shows that several schools have at least a few coniferous trees in the area. They stated that *pupils interested in this topic always observe, discover and ask about the growth of cones, needles, or class and compare leaves, fruits, bark, etc.* Several respondents admitted that that it is not always possible for a teacher to explain it to them proficiently and answer all their questions. According to respondents, there is a need to involve parents, volunteers and members of the *Young Naturalist* club in afforestation of the school surroundings. We can see that forest pedagogy overlaps with non-formal education. This is also one of the ways how we can make the child to be more aware of the importance of protecting the environment. This however requires professional consultation or practical help.

We were also interested in pupils' interest in topics related to the forest environment. We discovered that the scale 6 was the most represented, followed by the scale 7, which makes up a total of 52%. A neutral attitude was expressed by up to 19% of respondents. On a scale of 1 to 3, 14% expressed disinterest in these topics. The remaining 15% was expressed on a scale of 5, which we could consider positive. Based on the research answers, we see that respondents perceive the topic of the forest as necessary and interesting not only for students but also for teachers.

In addition to the forest environment, we were also interested in teachers' opinions on sustainable development and its place in education process. Both respondents and participants agreed unanimously that this is a topic that needs our attention. They pointed out that this should be a cross-cutting theme of all subjects. They reminded that *there is a need to devote more time to this topic in every thematic unit and if students have questions, they should be discussed in depth.*

In connection with the topic of sustainable development, we wanted to find out who, in their opinion, plays a major role in education for responsible behaviour. They expressed very similarly to a previous question, that the matter of responsibility should be part of all the subjects, not only of Elementary realia subject. It is also necessary that not only teachers but also educators or parents would focus on teaching responsibility. Several respondents think that some of the teachers would need it as well considering the negative behaviour of pupils during breaks. However, they reminded that they are on the same page with the educators in terms of their approach to education. Teachers also appreciated and agreed on the approach of grandparents, which is reflected in the thinking and actions of pupils. What we consider to be a negative, however, is the fact that there were some opinions according to which teachers considered clean desk and responsibility for school matters or school interior to be an example of responsible behaviour. It was not possible to determine whether they are aware of the fact that the responsibility for sustainability means not only to protect

material things, but that it is based on the formation of a relationship with each other, that it is about thinking, decision-making, behavior, actions and consequences of action in nature and for nature or not. Here we have another research task - to examine teacher's opinion on the causes and consequences of sustainability, because the teacher's thinking is largely reflected in the students' thinking.

From the point of view of the subject contents, we were interested in which topics they most often deal with environmental protection. It was an open-ended question and respondents could write any topic from the contents of Elementary realia subject. The most repeated topics were *Water, Animals, Living and Inanimate Nature, Plants*. The topics of *Man and Transport* were rather rare. When we look at the answers, we see that almost all of the topics are related to the natural environment. Here we could also consider whether, in connection with the undergraduate training of teachers, we should not focus more on the teacher's thinking about environmental protection, which is based on human thinking and behavior. It is not enough to only talk to pupils and to warn them of the consequences. Even though the respondents mentioned other topics, none of them mentioned *Man and his health*, which is also dependent on nature and natural conditions.

3.3 Research conclusions

A comparison of the analysis of qualitative and quantitative data showed that teachers would suggest to include in the contents of the subject topics that are related to nature as well as to man. Specifically, we are talking about the following topics: *Animals in the forest and their families, Me as a personality and family*, but also the topic *Time*. However, not determining and measuring time, but *Seasons and Months of the year*. They think that structuring the topics in terms of subject content should be more logical. The answers of the respondents showed that students are very interested in topics related to nature and the environment. However, they said that some subjects are being taught rather superficially.

Concerning our project Forest pedagogy, which has the character of applied pedagogical research, we can see that the teacher can also approach education about the forest environment by implementing the mentioned proposed topics. We justify this by saying that teaching about the forest would include not only knowledge about the animals in the forest, but also about the man's need for the forest and vice versa - planting trees, their treatment, measurement, oxygen production, animal feeding, etc. Also the topic *Seasons* can be taught by observing the same place in the forest. These findings inspire us to create didactic materials for teachers. Teachers are aware of the fact that for teaching individual topics, it is important to arouse students' interest in these topics in order to understand why we learn this subject, where we will deal with it in life. The results showed that the interest of students in topics related to the forest environment is relatively high. A lot of the respondents suggested to focus more on topics such as *Environment, Plant care, Excessive use of chemicals and how not to pollute the environment*, not only for humans but also for animals. They explained it by saying that students are very interested in these topics, they want to talk about it and to come up with various examples of how to fight against environmental pollution. There is a room for qualitative research that would map the views of children, pupils and students on what subjective characteristics they attribute to the environmental protection and what are their suggestions.

It turns out that thanks to the variability of teaching aids, students are interested in this subject, they are motivated to work and actively participate in the teaching process, because they enjoy working with these aids. They want to try everything, they want to explore and discover. The results also showed that teachers appreciate worksheets for the 1st and 2nd grade, which offer several topics for experiments and observations. However, there are also some negatives. With one or two hours a week there is not enough time for their implementation and in-depth

discussions. They suggest 3 hours a week. On one hand, they appreciate the clarity and diversity of the tasks, but on the other hand, research has shown that these tasks are not in accordance with Bloom's taxonomy of cognitive objectives. They focus more on the development of memory and understanding of concepts, rather than on higher cognitive processes. Although the textbooks meet the quantitative or formal criteria, it is not enough. The question is, whether teachers know the methodology for evaluating textbooks. They should look at textbooks more critically and take into consideration their qualitative content character. This finding can also be an inspiration for creating education programs for teachers, similarly as with forest pedagogy programs. The research revealed that forest pedagogy is rather unknown in school practice. Teachers do not know its core and the possibilities of using it in teaching or education. On the positive side, however, they do not consider it to be a marginal issue in the education of Elementary realia subject, as they agree that it is an important part of environmental education, and therefore of environmental protection as well. In the research, which is a partial output of our project, we managed to answer the research questions. At the same time, the research findings showed us possibilities for further research, which were presented in the data interpretation.

4 Conclusion

Nowadays, the matters of pupils' receptivity, attention, curiosity and courage of their thinking and creativity are becoming more and more popular. In the first years of primary school, the pupil desires to discover and get to know the surrounding reality and to understand it. This helps to form the basis for his or her research. However, the teacher must enter into the process of this discovery, acquaintance, finding and research not only with his individual teaching strategy, but also in accordance with the contents of the didactic system. This is one of the reasons why more rigorous attention should be paid to the revision of the Elementary realia subject contents, as well as a more precise approach to textbooks, their creation, and evaluation. A teacher should be able to ask questions that will help to develop their cognitive processes.

The child comes to school with a certain amount of knowledge gained from observing the forest environment and supported by an interview. However, observing and discovering initiates questions, that neither the parent nor the teacher can answer with certainty. This was also confirmed by our research. Forest pedagogy, learning about the forest, natural sciences topics related to the forest environment, or extracurricular activities related to the forest environment led by a qualified forest teacher, should not be perceived as a competition for the teacher or educator at school. Pupil, teacher, educator or even parent, they should all benefit from it, in terms of the knowledge as well as its experiential nature. It is a teaching that helps us to actively involve all the senses and all the cognitive processes in conjunction with psychomotor skills.

This teaching is led by the experts - forest pedagogues, who know the forest environment and life in it perfectly. He or she can explain various contexts, e.g. why forest and nature are important for our lives and health, but also why and how we can take care of the forest.

Literature:

1. BJACEK, K., SEDIVY, S. 2018. Zahraniční spolupráce v lesní pedagogice. In *Lesnická práce*. ISSN 0322-9254, 2018, vol. 97, č. 4, p. 34-35.
2. DOBISOVA ADAME, R., KOVACIKOVA O. 2015. *Prvouka pre 1. ročník základnej školy*. Bratislava : AITEC s. r. o., 2015. 49 p. ISBN978-80-8146-108-8.
3. DOUSKOVA, A. 2003. *Učenie sa žiaka v prírodovednom a spoločenskom kontexte*. Banská Bystrica : PF UMB, 2003. 144 p. ISBN 80-8055-807-8.
4. DOUDOVA, D. 2018. Historie seminářů pro lesní pedagogy v ČR. In *Lesnická práce*. ISSN 0322-9254, 2018, vol. 97, č. 6, s. 46-47.

5. DUHANCIKOVA, M. 2018. Didaktické analýza učiva Prvouky v 1. ročníku základnej školy /Diplomová práca, consultant Dana KOLLAROVA/. Nitra : UKF, 2018. 71 p.
6. CHLPOSOVA, D. JALOVIAKOVA, V. a kol. 2019. *Učenie o lese*. Zvolen : NLC, 2019. P. 86. ISBN 978-80-8093-278-7.
7. KLUSAK, M. 2010. Poznávání sociálního prostředí. In *Předškolská a elementární pedagogika*. Praha : Portál, 2010. ISBN 978-80-7367-828-9, p. 363-399.
8. KNECHT, P. a kol. 2008. *Učebnice z pohledu pedagogického výzkumu*. Brno : Paido, 2008. 193 p. ISBN 978-80-7315-174-4.
9. KOPACOVA, J. 2011. História a súčasnosť primárneho prírodovedného vzdelávania. In Scientific Bulletin of Chełm. [online]. 2011, no. 1[2018-10-19]. Dostupnosť na internete: <http://pwsz.chelm.pl/uczelnia/wydawnictwa/SCIENTIFIC_2011.pdf>. ISSN 2084-6770.
10. LAKATOSOVA, D. 2015. *Tematická správa PISA 2006 Prírodovedná gramotnosť*. Bratislava : NÚCEM, 2015. 40 p. ISBN 978-80-8963-822-2.
11. LASÁK, O. 2001. Lesní pedagogika. In *Lesnická práce*. ISSN 0322-9254, 2001, vol. 80, issue 8, p. 346-347.
12. LOYOVA, D., MELCEROVA, A., JALOVIAKOVA, V. 2018. Lesná pedagogika ako súčasť environmentálnej výchovy. In: *Zborník príspevkov z národnej konferencie environmentálna výchova, vzdelávanie a osвета v Slovenskej republike*, 2018. Nitra: Univerzita Konštantína Filozofa v Nitre, p. 136-144. ISBN 978-80-558-1261-8
13. MARUSAKOVA, L. a kol. 2010a. *Lesná pedagogika: príručka pre lesných pedagógov*. Zvolen: Národné lesnícke centrum. 67 p. ISBN 978-80-8093-121-6.
14. NAGYOVA, A. KOLLAROVA, D. 2020. Učenie o lese v učiteľovej stratégii vyučovania Prvouky. In *GRANT JOURNAL*.
15. NAVRATILOVA, K. 1986. *Didaktika prvouky*. Nitra : PF UKF, 1986. 148 p.
16. NOGOVA, M. 2008. Predmety v učebnom pláne v školách na území Slovenska v histórii a súčasnosti. In *Pedagogické spektrum*. ISSN 1335-5589, 2008, vol. 17, issue 2, p. 10-30.
17. PETLAK, E. 2004. *Všeobecná didaktika*. Bratislava : Iris, 2004. 311 p. ISBN 978-8901-864-5.
18. PRUCHA, J. – WALTEROVÁ, E, - MAREŠ, J. 2008. *Pedagogický slovník*. 4. vyd. Praha : Portál, 2008. 322 p. ISBN 978-80-736-7416-8.
19. SKALKOVA, J. 2007. *Obecná didaktika*. Praha : Grada, 2007. 322 p. ISBN 80-2471-821-7.
20. SLASTANOVA, M. 2014. *Rozvoj prírodovednej gramotnosti v primárnom vzdelávaní prostredníctvom zážitkového učenia*. Bratislava : MPC, 2014. 41 p.
21. ŠTÁTNY PEDAGOGICKÝ ÚSTAV, 2015. *Inovovaný štátny vzdelávací program pre 1. stupeň ZŠ*. [online]. Bratislava : ŠPÚ, 2015. 27 s. [cit. 2019.02.18]. Available: <<http://www.statpedu.sk/sk/svp/inovovany-statny-vzdelavaci-program/inovovany-svp-1.stupen-zs/>>.
22. WIEGEROVA, A. 2003. Prírodovedná gramotnosť a jej dosah na prírodovedné vzdelávanie v kurikule 1. stupňa ZŠ na Slovensku. In *Sociální a kulturní souvislosti výchovy a vzdělávání : 11. výroční mezinárodní konference ČAPV : Sborník referátů* [online]. Brno : Masarykova univerzita, 2003. Available: <<https://www.ped.muni.cz/capv11/default0.htm>>.
23. ZIGOVA, L. – JANCICOVA, A. – DOUSKOVA, A. 2007. Prvouka pre 1. ročník základných škôl – Metodická príručka. Bratislava : Orbis Pictus Istropolitana, 2006. 56 p. ISBN 978-80-7158-766-7.

Primary Paper Section: A

Secondary Paper Section: AM, EH

LEISURE ACTIVITIES AND EDUCATION OF SENIORS IN RESIDENTIAL FACILITIES

^aMIROSLAVA DEBNÁRIKOVÁ, ^bMICHAL KORICINA

*Department of Pedagogy, Faculty of Education,
Constantine the Philosopher University in Nitra,
Drážovská 4, 949 74 Nitra, Slovakia
email: ^amiroslava.debnarikova@ukf.sk, ^bmichal.koricina@ukf.sk*

The article is the output of authors within the project UGA PF UKF V/8/2020 called Leisure time of older adults and possibilities of its educational use and the project VEGA no.1/0001/18 called *Preparation for ageing and old age – possibilities of andragogical intervention*.

Abstract: The article aims at the current issue of how to use leisure time of seniors in residential facilities, placing a particular emphasis on educational activities. Authors point to education possibilities in the residential environment, aspects and characteristic features of educational activities, and social services clients' specific objectives. In the second part, authors focus on those educational areas, which represent essential topics in senior education in the 21st century, and they apply them into real conditions of residential facilities. Education is perceived here as a useful tool for developing retired peoples' personalities and a crucial element in developing society.

Keywords: seniors, education, leisure time, seniors with a disability, residential facilities

1 Leisure activities of seniors in residential facilities

The phenomenon of leisure time represents a significant opportunity. In particular, this is true for seniors who learn how to use their leisure time after being retired. In this life period, their leisure time increases in several hours daily. For this reason, there arises a crucial question of its meaningful use, i.e. seniors need to fill this time with such activities that are beneficial for them and, at the same time, they do not endanger other people (Krystoň, 2019). In the submitted article, we deal with seniors' leisure activities and education in residential facilities because social andragogues can directly influence seniors' target group. They can help them achieve a higher quality of their lives. We describe possibilities of leisure activities, their perception and objectives, and essential areas of leisure education of seniors in the 21st century.

In the ideal society, no seniors would have to spend the final period of their lives without their families and friends. However, many families currently cannot and do not always want to look after their oldest members (Haškovcová, 2010). Sometimes, it is not possible because of their serious health condition, 24-hour care, long-distance, workload and other reasons. In these situations, the state helps these families with its legal system. According to the Law no.448/2008 Journal of Law about social services, as amended, the state defines types, forms and ways of providing social services and types of social facilities related to them. State-owned entities and non-state entities can be awarding authorities of these facilities.

The following institutions belong to these social service facilities aimed at senior clients: facilities for seniors, residential social service facilities, specialised facilities, nursing care facilities and daycare centres. One of the criteria for choosing the appropriate type of social facilities for seniors is their degree of social service dependence. It is essential to judge a natural person's dependence on another natural person's help in specific activities. Twelve areas are in assessment with the scale from 0 to 10, where 0 means that the given person is dependent on the help of another person in the majority of judged activities. The degree of dependence can be from I to VI. A more detailed description is mentioned in Annex 3 to the Law 448/2008 Journal of Law about social services, as amended.

According to this criterion, seniors with the highest rate of assistance (degrees of dependence V and VI) become clients of social service facilities and specialised facilities (they have a disability, mainly Parkinson's disease, Alzheimer's disease, Pervasive Developmental Disorder, Sclerosis Multiplex, Schizophrenia, Dementia of different etiological types, Deaf-Blindness and others). Seniors with a lower rate of assistance

(degree of dependence IV) become clients of social services in facilities for seniors, daycare centres (degree of dependence III). For example, if citizens were in the facility of supported residence even before reaching the retirement age, and their degree of dependence remains at level III, they can stay in the given facility.

According to V.Labáth (2004), the following aspects characterise people who get into residential care:

- Their established *life programme* and *lifestyle* are "disturbed",
- They become *clients* (patients, inmates, convicted). At best, they are clients requiring assistance. At worst, they become impersonal numbers (institutional mortification),
- They become dependent, *nonautonomous* people who get into asymmetric, subordinated position. Clients have their precisely defined roles, and their rights and obligations have a different character as well,
- There is a *sharp decrease in frequency* and intensity in all types of impulses which a differentiated social environment can provide to them,
- People – clients get in touch with people who have *similar problems* as them, and it is necessary to create their place here,
- To some extent, *authorities* can *decide* about them on several issues (Labáth, 2004, p. 83).

Seniors need to cope with the transition from the family environment into the social institution. At the same time, they need to adapt and accept their old age. Határ (2014a) says that these processes will depend on "the level of peoples' sociability and adaptability, their achieved education, life aspirations, social and professional roles they had in the past. Education in social adaptation in their childhood, young age, and adulthood will significantly impact these processes." (Határ, 2014a, p. 56).

Similarly, authors C. Pichaud and I. Thareauová (1998), in their publication *Soužití se staršími lidmi*, say "that contrary to frequent prejudices and convictions, research showed that the ability of adaptation is not related to age. Ageing means that people cope with loss in their lives. At the same time, they continue planning their future and live in hope." (Pichaud, Thareauová, 1998, p. 34).

Based on the definition in the *Andragogical Dictionary* (Průcha, Veteška, 2014), the leisure time of seniors in these facilities is "time when they can decide how they will spend it according to their ideas, hobbies and needs. It is possible to see that leisure time depends on peoples' profession and education, age, and personality type. Education is a meaningful activity in leisure time in the productive age (further education) and the post-productive age (seniors' education)." (Průcha, Veteška, 2014, p. 288).

According to Határ (2014b), clients in residential facilities have two basic possibilities of education:

- 1) Possibilities of education carried out in the social facility within a) leisure and therapeutic activities (obligatory) and b) their educational activity (optional);
- 2) Possibilities of education carried out outside the social facility. They take place in educational institutions (e.g. academies or universities of the Third Age) and other social, cultural, healthcare and pro-senior oriented facilities, organisations and communities." (Határ, 2014b, p. 26).

Building on J. Wingchen, C. Határ (2014b) describes these four categories as the main objectives of education:

1) Cognitive objectives, i.e. providing of learning topics (to provide knowledge, structures and principles; to understand connections; to apply knowledge and others),

2) psycho-motor objectives, i.e. supporting of skills (to develop skills of physical persistence and relaxing; to improve the sensory-motor coordination; to support the gross and fine motor skills),

3) affective objectives, i.e. change in behaviour and attitudes (to perceive own attitudes and behaviour; to develop a sensibility for own feelings and feelings of others, to develop regulation and to control feelings),

4) social objectives, i.e. increasing competences in the social area (developing the communication ability; developing social participation ability; developing the willingness to cooperate; developing self-confidence in contact with others)." (Határ, 2014b, p.73).

It is possible to fulfil the affective and social objectives with various training programmes. Authors Müller de Morais and Rapsová (2016) recommend carrying out training of social competences of institutionalised adults and seniors with a disability to achieve the progress and development of their personalities. They understand this training as "a practical activity supporting the process of social learning, which is based on personal experience and accompanying emotional experience." (Müller de Morais, Rapsová, 2017, p. 42). We agree with the authors that "the contents of training programmes for adults and seniors with a disability should be manifold, and these programmes should fulfil requirements, hobbies, current needs and objectives of a client and the whole group. (ibid., p.43). They suggest alleviating negative consequences of institutionalisation with "the training to overcome the dependence on others, training of reality, environmental therapy, revitalisation and re-sensibilisation. Another recommended activity within this training is the realisation of the sequence model of self-improvement (self-reflection, self-evaluation, self-regulation, self-creation)." (ibid., p. 43-44).

Szabová-Širová, Milotová (2017) focus their attention on the socio-therapy in the residential social-educational care about seniors. They think that target elements of the socio-therapeutic work are "adequate self-evaluation, personal freedom and meaningfulness of life, sense for reality, motivation, will, independence, ability to express own feelings, emotions or conflicts, creativity, spontaneity, overview, the ability of cooperation and communication, as well as intergenerational understanding. These elements also include accepting the family and social support and caring about a dependent adult or senior and developing thinking, memory and attention." (Szabová-Širová, Milotová, 2017, p.76).

Contacts with family and close friends belong to the leisure activities of institutionalised seniors. P. Jedličková (2014) reminds the importance of pro-senior education in families, strengthening of intergenerational relationships with "mutual meetings and various activities carried out together, which are beneficial for both participating sides." (Jedličková, 2014, p. 29-30).

The most challenging task is to create leisure activities for seniors with specific needs and the highest assistance combined with a health disability. These seniors are entirely dependent on others' help, and they can provide only non-verbal feedback. An example of these seniors' activities is creating the Plan of participation and experience by Norwegian authors Ellefsen and Slåtta (2010). This plan aims to provide these people with an exciting experience in the form of participation and approach. These authors perceive participation "comprehensively as activities, expressions or ways of acting which these people use in their everyday lives. It means that we can talk about participation if we see, for example, a smile indicating expectation, the sight fixed on something new in the visual field

or a joyful sound after touching something. Participation also reflects in their intentional and focused movements towards something interesting "(Cangár, 2015, p. 25). Its success will depend on the staff's creativity and ability to recognise their clients' specific expressions and reactions. Authors point out that it is crucial so that staff acquires "new competences how to create and develop good relationships with people with disabilities." (Cangár, 2015, p. 26).

An individual plan can help create leisure activities for seniors in residential facilities. Its elaboration is obligatory (Law 448/2008 about social services, as amended). Section §9 of the given law defines this plan as "a comprehensive, flexible and coordinated tool for active cooperation between the provider of social services and the recipients of social services, their families and community. The individual plan's objectives depend on recipients' individual needs and the mutual cooperation between the recipient and social services provider. A determined worker coordinates this individual plan with supporting and accompanying the recipients in the process of individual planning (from now on, a key worker). The process of individual planning includes identifying individual needs, choosing objectives for the individual plan, methods to achieve the given objectives, preparing the plan of activities, fulfilling and evaluating the individual plan."

In most social service facilities where the processes of transformation and deinstitutionalisation occur, we could see that the primary approach to individual planning is based on Rogers's Person-Centred Approach and less on other approaches. Cangár (2018) says about the basic approaches in individual planning that "in some facilities, a more significant emphasis is placed on the educational character of planning, whereas other facilities prefer the therapeutical or nursing approach." (Cangár, 2018, p.19). However, it is always crucial to remember that these plans are elaborated together with social services recipients. These plans should be their plans. Seniors should decide what they prefer in their personal plan. At the same time, we have to consider that employees have different personal settings, experience, knowledge and professional competences. These factors will influence employees when they prepare individual plans in cooperation with seniors.

According to Cangár (2018), the Person-centred approach includes six necessary steps that help achieve social service recipients' individual objectives. These are:

1. "Efficient knowing and reacting to peoples' various desires, abilities and worries,
2. Understanding and focusing on crucial areas of individuals – examining their current situation and their desire to change their lives; talking about what a specific change can mean for them,
3. Identification and knowing of available possibilities for individuals,
4. Mobilisation and involvement of the whole social network and sources from the formal system to fulfil individual desires expressed by the given individual,
5. Creation of agreement for the regular following of specific plans, interim evaluation of the progress and realisation of plans,
6. Knowing the way of continuous recording: a) things which participants learned during the process about what is essential for an individual and for them personally, b) what balance was between what is vital for the proper recipients, and what the provider of social services can provide to them." (Cangár, 2018, p. 22).

The creation of this plan is a gradual process. In the beginning, the employees use tools for checking the current situation of the social service recipients. They examine their individual needs, and subsequently, they choose objectives and methodology for preparing the plan of activities and its evaluation. The individual plan also includes the Plan of social rehabilitation and the Plan of risks. If social services recipients have problems with verbal

communication, they insert communication tables into the given plan.

Although employees prepare all activities with the best intentions, it can happen that some seniors are not interested in anything. It may be difficult for employees to respect such decisions, but they should accept that seniors are in their partners' positions. Moreover, seniors should primarily decide what activities they want to participate in and what activities they want to do in their lives. If we do not respect their real desires, we put them into the position of "an object of care."

It is probable that, in future, the population of seniors in high age will increase significantly. The Czech sociologue Možný (2011) is already drawing attention to changing numbers of people in age groups above 65 until the year 2050 in the Czech Republic. "Particularly worrying will be the development in the age group above 80: today there are about 260 thousand people in this age, and their number will increase up to 900 thousand to the half of the century because children from the 70s' *baby boom* will reach this age in that time. More than 220 thousand of them will be older than 90 by keeping the current rate of mortality." (Možný, 2011, p.280). Also, Slovak authors Hroncová, Hudecová, Matulayová (2000) say that "on one side, longevity is one of the greatest successes of the 20th century. On the other side, it seems to be one of the most severe problems as well. Thus, longevity becomes an immensely significant demographic factor that determines social politics and a great challenge for human society." (Hroncová, Hudecová, Matulayová, 2000, p.215).

This situation is also a challenge for social andragogy to prepare new specialists – social andragogues – geragogues. In the future context within specialised activities, Határ (2014b) recommends introducing a social-educational care model for seniors into the institutional practice. This model focuses on the needs of individuals, groups and the whole society. It consists of the following sub-models:

- Education of seniors containing specific educational components that aim at cognitive, socio-affective and psycho-motor progress of clients' personalities.
- Training of clients' social and personal competences.
- Social and educational assistance, respectively, socio-educational counselling for seniors. (shortened, Határ, 2014b).

He also emphasises these aspects: "In addition to the institutionalisation of senior education, its professionalisation plays a very significant role, too. Slovak universities provide pre-graduate preparation for andragogues who should carry out senior education in residential facilities" (Határ, 2014b, p.29). He says that "geragogy does not have a statute of an autonomous study field such as andragogy. It belongs to andragogical scientific disciplines and, therefore, andragogues perform geragogical work in various areas in the life of an individual and society. However, geragogy is a primary teaching subject in several study programmes for assisting professions (e.g. pedagogy, social pedagogy, social work and others)" (Határ, 2014a, p.30). Considering the statistics mentioned above, we agree with his opinion and recommendation to introduce the social andragogues' profession into the residential practice. Social andragogues could have competences, such as searching, planning, preparing, carrying out, and assessing seniors' leisure activities in residential facilities.

In individual planning of objectives, we should not forget to create offers for lifelong education. Schunová (2016) thinks that language education belongs to these educational possibilities. She points to the fact that "age is not such a crucial factor. More important is what is happening in individuals during the teaching-learning process. Other essential factors include conditions for language education, such as a suitable environment, teacher's personality, motivation, accepting specific features of participants and their potential." (Schunová, 2017, p.103).

2 Areas of senior education in the 21st century

In a rapidly changing society, it is also essential to adapt the contents of education more frequently than before. This approach is also valid for senior education in residential conditions if we do not want to exclude this group of older adults entirely from life in civil society. For this reason, in the following part, we analyse three educational areas that must form part of retired peoples' education. We based our analysis on the key competences for the 21st century (*Odporúčania*, 2018)).

2.1 Digital skills

Nowadays, digital technologies form an inseparable part of peoples' lives. Scientific-technological progress allows a fast-growing number of possibilities that we can use for mutual communication or personal and professional growth. However, seniors' absence of digital skills can be a disadvantage that brings along the feeling of exclusion or being "out-of-date". For this reason, digital competences represent a great opportunity, although not fully used now, for seniors' leisure education.

The last European framework for the Digital Competence *DigiComp* (2020) which defines expected digital competences of EU inhabitants, pointed to the fact that, in average, up to 44% of people do not have adequate digital skills.

We can often see that older people and seniors are afraid of using technologies, and they use them at the lowest level possible if their surroundings require it. Thus, Mayerová, Lenhardtová (2017) talk about the so-called digital exclusion. They connect it with social exclusion in several areas:

- communication problems with enterprises – impossibility to communicate via chats, e-mails or discussion forums;
- limitation or impossibility to use public institutions – limited use of e-government and e-services (e.g. electronic voting, online applications)
- no access to the public market of services and shops - impossibility to buy goods and to use services available online (e.g. internet banking, e-shops, e-libraries)
- absence of cultural life, limited access to online culture (e.g. music, works of art) (e.g. music, works of art) (Tomczyk, 2015, in: Mayerová, Lenhardtová, 2017).

Tomczyk (2015) also says that computer illiteracy is an incoherent phenomenon. For this reason, it is necessary to characterise the information society, dividing it into three elementary groups:

- e-citizens – they are equipped with a set of competences necessary for using e-services,
- indeed excluded citizens digitally – they do not have the necessary skills and computer infrastructure which significantly influences their everyday existence,
- only apparently excluded citizens digitally – for this group, IT technologies are not necessary because their everyday life is related to the physical access to services and information (Tomczyk, 2015).

The topic of digital technologies indeed represents a significant challenge in the context of further education of seniors because of their participating in social life and keeping relationships with their families and friends.

In our opinion, education for seniors in residential facilities represents excellent potential. The presence of a social andragogue / lecturer and organised leisure time means a reasonable basis for a PC course or working with a smartphone. However, there arises a question, what should be the subject of education, and what is essential to teach seniors so that digital technologies could increase their socialisation level.

Sikorski (2013) says that the first part of the educational course should focus on the work with a PC mouse, keyboard, and reading screen instructions because seniors do not have

experience with a PC. If seniors want to work with a keyboard, they should know the keys Alt, Ctrl, Delete, Backspace, space bar or Caps Lock. Later, when working with the internet, seniors should be informed about the rules of using the internet and web browser, switching between separate windows and copying websites' contents in other applications. They should also know the work with electronic communication (e-mails), funny servers, e-authorities and e-shops (Sikorski, 2013).

Educational activities aimed at developing seniors' digital skills must provoke positive emotions and create a friendly work environment. Supporting atmosphere reduces stress and, in this way, it can indirectly influence the efficiency of the teaching-learning process (Tomczyk, 2015).

Stress represents one of the most significant barriers that hinder seniors from acquiring education in the ICT field. The research confirmed that evaluation of seniors-learners provokes much worse results than in situations when their knowledge is not verified. Fear from exams is quite frequent in learning PC work. Franken (2006) thinks that the cause of this fear lies in excessive concentration on oneself, which often disables the task's correct fulfilment. However, this fear can also derive from a previous negative experience in the field of institutionalised education. Its cause can also be worry that seniors will not remember all the information necessary for handling modern electronic devices (Szpunar, 2013, in: Tomczyk, 2015).

Digital skills represent the way to a higher level of socialisation and interest in the surrounding world. They also help them keep in touch with family and friends, that is highly up-to-date in the Coronavirus pandemic in 2020. For this reason, it is indispensable so that the digital skills issue also finds its application in residential facilities in the form of leisure education.

2.2 Civic engagement

The area of civic education of seniors in residential conditions has its specific features. Health condition, environment and conditions provided in facilities do not allow seniors to participate in public life to such an extent as seniors living in the home environment. Despite this fact, we decided to include this topic in our article because it is crucial to lead this group of seniors to civic engagement and social life participation.

The civic competence is defined as "an ability to act as a responsible citizen, and fully participate in civic and social life. This participation aims at the knowledge of social, economic, legal and political concepts and structures., Other important factors are understanding the worldwide development and sustainability" (Odporúčania, 2018, p.10).

The general objective of civic education is to form active citizens and lead them to support democracy and human rights (O'Shea, 2012). In addition to the main objective, there are also secondary objectives. We should fulfil them with civic education tools, such as participation, partnership, social cohesion, responsibility, the same approach, equality and solidarity (O'Shea, 2012).

We agree with the educational objectives of civic education defined by Veldhuis (1997, in Sládkayová, 2019). He classifies them in the following way:

- *political objectives* – knowledge of the political system, democratic attitudes, participating experience,
- *cultural objectives* – knowledge of the cultural heritage and history, primary skills (language competence, reading, writing),
- *social objectives* – knowledge of social relationships in society, social skills,
- *professional-vocational training, economic skills* – related to work performance and other economic activities.

All the mentioned objectives should stimulate citizens' active participation in civic society and political decisions within constitutional democracy (Veldhuis, 1997, in: Sládkayová, 2019).

Except for professional-vocational training and economic skills, it is possible to apply all mentioned objectives to seniors living in residential facilities. We can assess and support their civic activity by chosen civic engagement ways:

- *use of their voting rights in democratic elections* – we evaluate whether and how seniors involve in deciding about elected representatives in municipal, national or European politics. They can vote directly from their facility where they live – representatives of the municipal electoral commission will bring them transmissible ballot boxes,
- *participation in petitions* – involvement in protest or support petitions with their signature or filling in the online form,
- *participation in deciding about their surroundings* – they can participate in planning or voting about projects supported by the municipal or regional budget,
- *interest in political issues* – they read newspapers, watch TV news, and political debates on the current situation – these are other options that help us observe the seniors' civic engagement level.

The basis for assessment or motivation to seniors' civic engagement in residential facilities can also be indicators of active citizenship and citizenship education, defined in the study *Indicators for Monitoring Active Citizenship and Citizenship Education* (DeWeerd et al., 2005).

The following activities represent indicators of active citizenship:

- *voluntary activity in the organisation* – we can include here voluntary activities in the facility performed by this target group,
- *organised activities for the community* – similarly, a community represents here other inhabitants of the given residential facility,
- *participation in elections,*
- *membership in a political party* – active membership in the structures of a political party. However, seniors in residential facilities do not have many possibilities for this activity,
- *participation in an interest group* – e.g. an active involvement in the parish (participation in masses or charity activities),
- *non-violent forms of protest* – expressing dissatisfaction mainly in the form of petitions,
- *participation in public debates* – seniors do not usually have created conditions for this activity in social services facilities (DeWeerd et al., 2005).

Social workers, or at best, social andragogues working in residential facilities for seniors, should lead their clients to civic participation in society. Although this target group has fewer possibilities than other groups, we cannot stop looking for ways to support the development of their civic competences and their active community involvement.

2.3 Religious educational activities

As the last educational activity for seniors, we decided to present their spiritual and religious activities. In seniors' leisure time, these activities play a significant role in their experience and participation in social activities.

Strženeč (2007) defines the concept of spirituality, and he says that, nowadays, it is not possible to equate the inner and spiritual life because we perceive here the spiritual life in a broader sense (without a direct relationship to the Holy Spirit, as it is in Christianity). Similarly, we cannot describe spirituality independently from people who experience it.

We cannot deny that experiencing of faith is related to a better health condition of individuals, and it has a positive influence on the physical and psychological features of adult peoples' personalities. Levin (2001, in: Strženeč, 2007) formulated seven principles of the relationship between faith and health:

- Involvement in the religious life of the Church influences peoples' lifestyle.
- Regular participation in masses brings along social support by co-religionists and support of behaviour strengthening their health.
- The positive emotional lives of believers (concerning their participation in masses and prayers) influence their physiological processes.
- There is a certain similarity between the set of religious beliefs and the set of health recommendations.
- Religious belief leads to positive thinking (hope, optimism).
- Mystic experience activates the healing life energy.
- Experimentally verified positive influence of prayers for distant ill people arises an open question about God's direct intervention.

Religiosity has a positive influence on peoples' health condition. Thus, religious educational activities are significant for seniors' target group in residential facilities because they frequently suffer from various health disadvantages.

Kaplan, Berkman (2019) include these aspects into the benefits of religious activities:

- religion supports life approach that is full of hope,
- older people find the meaning of their lives in religion. Subsequently, this attitude influences their health habits, social and family relationships,
- religion represents a way how to cope with illness or disability,
- religion supports the community way of life, and it helps to increase the number of social contacts (Kaplan, Berkman, 2019)

However, we have to admit that seniors' possibilities in the residential environment are limited in religious life participation. Therefore, it is crucial to identify such options that residential facilities provide to seniors to participate in spiritual educational activities.

Participation in masses

It represents the fundamental expression of religious life. In many facilities, there are regular masses or celebrations of Sacraments. In other facilities, seniors are allowed to visit the local church and participate in the mass. The priest's sermon fulfils the educational character in this context. The priest can influence on the believers and motivate them to experience spiritual life more deeply.

Watching religious programmes on TV

In residential conditions, seniors can watch TV programmes. In this context, we can mention spiritual programmes – discussions, documentary films, religious films or television “spiritual advisory service “where seniors can find answers to their questions about the Church's teachings (TV LUX, 2020).

Spiritual dialogue / confession

A spiritual dialogue or confession can have the form of advising or personal accompanying of seniors. In this way, older people can feel the closeness, interest and willingness to listen to their problems, life experience or circumstances. Mainly for seniors in residential facilities, these tools represent efficient prevention against hopelessness and isolation.

Common prayers

In facilities for seniors provided by the Church, there is a usual practice to have common prayers with clients (often with workers too). Reading the Bible or regular prayers can be an

efficient tool for fulfilling seniors' spiritual needs and, subsequently, increasing their quality of life.

However, residential seniors' participation in religious organisations' activities represents a significant challenge in this context. Kozerska (2016) writes about their importance concerning seniors' experiencing of their faith. She says that “the role of religious organisations represents a fundamental part in older peoples' lives. It is a strong argument that the transcendent life dimension acquires much greater importance in older age“(Kozerska, 2016, p. 7). Przygoda (2009) emphasises that religious organisations do not only read biblical texts and prayers. For example, many parishes organise concerts, lectures or even sports activities or language courses. Moreover, many seniors are members of parish singing choirs or other leisure clubs. According to Grotowska (2013), it is evident that seniors' participation in religious organisations can positively influence their social participation in society. She divides religious organisations into (1) organisations aimed at celebrating masses, (2) charity religious organisations, (3) charity religious organisations (outside the Church) and (4) organisations with religious bases aimed at the development of leisure activities and other competences of believers (Grotowska, 2013).

It is crucial for workers dealing with seniors in residential facilities to find new opportunities to involve their clients more in religious organisations' activities. They should also find ways of cooperation with these subjects directly in the residential facility for seniors.

Further education is crucial during professional life, but no less significant is education after leaving to retirement. Whether seniors live in the home or residential environment, we cannot forget that they need to develop themselves through further learning. The residential environment has a little higher potential because longterm work with seniors and immense control of their lives “from outside “can enable leisure education to become part of their ageing in a much broader context. Veteška (2017) defines four fundamental pillars of andragogical work with seniors which we need to apply in the environment we write about in our article. These pillars are education, activation, animation and counselling. Thus, we can see that education has a primary place in developing older peoples' personalities. Together with other mentioned pillars, education should enrich their lives. We think that the inclusion of 21st-century topics into senior education in residential facilities will bring along higher participation of these seniors in social life, contributing to a better quality of their lives.

Literature:

1. Cangár, M., 2018. *Individuálne plánovanie*. [online] Implementačná agentúra Ministerstva práce sociálnych vecí a rodiny Slovenskej republiky, 28 p. ISBN 978-80-89837-45-8. Available at: https://www.ia.gov.sk/npkiku/data/files/np_kiku/dokumenty/Metodiky%202018%20ISBN/Individualne%20planovanie%202018.pdf
2. De Weerd, M. 2005. *Indicators for Monitoring Active Citizenship and Citizenship Education* [online]. Amsterdam: Regioplan, 2005. 182 p. [cit.2020-12-1]. Available at: http://www.pedz.uni-mannheim.de/daten/edzb/gdbk/05/indikator_monitoring_active.pdf
3. Ellefsen, E. - Slåtta, K. (translation M. Cangár) 2015. *Plán účasti a skúsenosti. Nástroj pre rozvoj a zabezpečenie kvality života pre dospelé osoby s kombinovaným alebo ťažkým zdravotným postihnutím*. [online] SOCIA – Nadácia na podporu sociálnych zmien, 2015. 52 p. ISBN 978-80-969744-9-8. [cit.2020-11-14]. Available at: https://www.socia.sk/wp-content/uploads/2016/02/Plan-ucasti_WEB.pdf
4. Franken, R. 2006. *Psychologia motywacji*. Gdańsk: Gdańskie Wydawnictwo Psychologiczne, 2006. ISBN 8389574616
5. Grotowska, S. 2013. Religijny trzeci sektor w społeczności lokalnej na przykładzie organizacji z Wrocławia i Dolnego Śląska. In *Przegląd religioznawczy*, č. 4. r. 250. pp. 205-213.
6. Haškovcová, H. 2010. *Fenomén stáří*. 2nd edition. Praha: HBT, 2010. 368 p. ISBN 978-80-87109-19-9.

7. Határ, C. 2014a. *Kvalita života inštitucionalizovaných seniorov v edukačnom kontexte*. Nitra: Univerzita Konštantína Filozofa v Nitre, 2014. 77 p. ISBN 978-80-558-0701-0.
8. Határ, C. 2014b. *Geragogika. Vybrané kapitoly z teórie a metodiky edukácie seniorov*. Nitra: Univerzita Konštantína Filozofa, 2014. 111 p. ISBN 978-80-558-0666-2.
9. Határ, C. 2016. *Sociálny andragóg v systéme starostlivosti o inštitucionalizovaných dospelých a seniorov (nielen) so zdravotným postihnutím*. Nitra: Univerzita Konštantína Filozofa, 2016. 79 p. ISBN 978-80-558-0988-5.
10. Határ, C. – Jedličková, P. 2017. Medzigeneračné učenie v zariadeniach sociálnych služieb pre seniorov (so zdravotným znevýhodnením). In VETEŠKA, J. (ed.) *Vzdělávání dospělých 2016 - východiska a inspirace pro teorii a praxi*. Praha: Česká andragogická společnost, 2017. ISBN 978-80-905460-6-6, pp. 25-34.
11. Hroncová, J. – Hudecová, A. – Matulayová, T. 2000. *Sociálna pedagogika a sociálna práca*. Banská Bystrica: PF UMB Banská Bystrica, 2000. 293 p. ISBN 80-8055-427-7.
12. Jedličková, P. 2014. *Proseniorská výchova v rodinách a inštitucionalizácia seniorov*. 1st edition. Nitra: Univerzita Konštantína Filozofa, 2014. 75 p. ISBN 978-80-558-0667-9.
13. Kaplan, D.B., Berkman, B.J. 2019. Religion and Spirituality in Older Adults. In *MSD Manual Professional Version*. [online]. [cit.2020-12-1]. Available at: <https://www.msmanuals.com/professional/geriatrics/social-issues-in-older-adults/religion-and-spirituality-in-older-adults>
14. Kozerska, A. 2016. Educational aspects of Polish seniors' participation in religious organisations as well as organisations promoting knowledge. In *Studies in the Education of Adults*. [online]. vol. 48. no. 1. pp. 4-22. ISSN 1478-9833. [cit.2020-12-1]. Available at: <https://www.tandfonline.com/doi/full/10.1080/02660830.2016.1149354>
15. Krystoň, M. 2019. *Vybrané problémy z kultúrno-osvetovej andragogiky*. Nepublikovaná prednáška. Nitra: PF UKF.
16. Labáth, V. 2004. *Rezidenčná starostlivosť*. Bratislava: Občianske združenie Sociálna práca, 2004. 144 p. ISBN 80-89185-03-7.
17. Mayerová, K., Lenhardtová, M. 2017. Senior a IKT v andragogickom kontexte. In *Šance a limity seniorov v súčasnej modernej komunikácii (negatívna a pozitívna IKT v živote seniora)*. [online] Prešov: Filozofická fakulta Prešovskej univerzity, 2017. [cit. 2019-10-15]. Available at: <https://www.publib.sk/web/kniznica/elpub/dokument/Balogova11/> ISBN 978-80-555-1803-9
18. Možný, I. 2011. *Rodina a společnost*. Praha: Sociologické nakladatelství (SLON), 2nd edition. 2011. 323 p. ISBN 978-80-86429-87-8.
19. Müller de Morais, M. – Rapsová, L. 2017. Perspektívy a špecifiká rozvíjania sociálnych spôsobilostí zdravotne znevýhodnených dospelých a seniorov v zariadeniach sociálnych služieb. In Veteška, J. (ed.) *Vzdělávání dospělých 2016 - východiska a inspirace pro teorii a praxi*. Praha: Česká andragogická společnost, 2017. ISBN 978-80-905460-6-6, pp. 35-47.
20. *Odporúčanie Rady z 22. mája 2018 o kľúčových kompetenciách pre celoživotné vzdelávanie*. [online]. Brusel: Európska únia, 2018. [cit. 2020-11-04]. Available at: [https://eur-lex.europa.eu/legal-content/SK/TXT/PDF/?uri=CELEX:32018H0604\(01\)&from=en](https://eur-lex.europa.eu/legal-content/SK/TXT/PDF/?uri=CELEX:32018H0604(01)&from=en).
21. O'Shea, K. 2012. *Slovník pojmů k výchově k demokratickému občanství*. Brno: Masarykova univerzita, 2012. 32 p. ISBN 978-80-210-5818-7.
22. Pichaud, C. – Thareauová, I. 1998. *Soužití se staršími lidmi. Praktické informace pro ty, kdo doma pečují o staré lidi, i pro sociální a zdravotnické pracovníky*. Praha: Portál, 1998. 160 p. ISBN 80-7178-184-3.
23. Průcha, J. – Veteška, J. 2014. *Andragogický slovník*. 2nd edition. Praha: Grada Publishing, a.s., 2014. 320 p. ISBN 978-80-247-4748-4.
24. Przygoda, W. 2009. Formacja apostoła ludzi w podesłym wieku. In *Perspectiva. Legnickie Studia Teologiczno-Historyczne*, vol. 14. no. 1. pp. 170-184.
25. Schunová, R. 2017. Jazykové vzdelávanie seniorov a jeho špecifiká. In Veteška, J. (ed.) *Vzdělávání dospělých 2016 - východiska a inspirace pro teorii a praxi*. Praha: Česká andragogická společnost, 2017. pp. 97-104. ISBN 978-80-905460-6-6.
26. Sikorski, W. 2013. Edukacja w zakresie technologii informacyjnej na uniwersytetach trzeciego wieku. In: *Seniorzy w świecie nowych technologii. Implikacje dla praktyki edukacyjnej oraz rozwoju społeczeństwa informacyjnego*, „Biblioteka Gerontologii Społecznej”. Katowice: Wyd. Naukowe Śląsk, 2013. ISBN 978-83-7164-791-8.
27. Sládkayová, M. 2019. *Občianske vzdelávanie dospelých*. Banská Bystrica: Belianum, 2019. 96 p. ISBN 978-80-557-1535-3.
28. Szabová-Šírová, L., Milotová, A. 2017. Socioterapia v rezidenčnej sociálnoedukačnej starostlivosti o seniorov. In Veteška, J. (ed.) *Vzdělávání dospělých 2016 - východiska a inspirace pro teorii a praxi*. Praha: Česká andragogická společnost, 2017. ISBN 978-80-905460-6-6, pp.73-84.
29. Tomczyk, L. 2015. *Vzdelávanie seniorov v oblasti nových médií*. Praha: AIVD ČR, 2015. 240 p. ISBN 978-80-904531-9-7.
30. TV LUX. 2020. *Všeobecné informace*. [online]. [cit.2020-12-1]. Available at: <https://www.tvlux.sk/>
31. Veteška, J. 2017. *Gerontagogika*. 2nd edition. Praha: Česká andragogická společnost, 2017. 75 p. ISBN 978-80-905460.
32. Zákon č. 448/2008 Z. z. *o sociálnych službách* (v znení neskorších predpisov). [online]. Available at: <https://www.slovlex.sk/pravne-predpisy/SK/ZZ/2008/448/20200425>

Primary Paper Section: A**Secondary Paper Section: AM**

THE INTEGRATION OF CRITICAL AND MORAL THINKING: THE ATTITUDES OF THE TEACHER STUDENTS TO THE DEVELOPMENT OF THEIR CRITICAL AND MORAL THINKING

^aMARTINA KOSTURKOVÁ

Department of Pedagogy, Faculty of Humanities and Natural Sciences, University of Prešov in Prešov, 17. November 1, 081 16 Prešov, Slovakia
email: ^a*martina.kosturkova@unipo.sk*

The paper was developed with support of projects: VEGA 1/0174/20 The integration of moral judgement and critical thinking into undergraduate teacher training, KEGA 025PU-4/2020 Developing the moral and critical thinking in students learning programs.

Abstract: In this study we present partial results of extensive research focused on the development of moral and critical thinking. The aim of the study was to find out whether there is a difference in students' perception of innovative and traditional teaching. Three balanced groups of teacher students of the University of Prešov in Prešov took part in the experiment (control group – n = 21; experimental group 1 – n = 21; experimental group 2 – n = 20). The basic method of evaluation of seminar lessons was a two-factor semantic differential with 15 scales, 6 of which measured the evaluation factor and 9 the energy factor. The results showed a significant difference between the control group and the experimental groups. The groups purposefully focusing on development of moral and critical thinking evaluated the teaching process (in the evaluation factor) as better, more pleasant, stronger, with a relaxed atmosphere, more interesting and nicer; in the energy factor as more demanding, stricter, heavier, much more active, less problematic, more valuable, a little louder and shorter. In order to achieve healthy development of an individual with moral autonomy, we consider it necessary to support the integrity of moral and critical thinking.

Keywords: integrity of moral and critical thinking, semantic differential, evaluation factor and energy factor.

1 Introduction

Global trends in the field of education have also made Slovak experts think about achieving more effective educational results. Our country started to deal with the issue of critical thinking only a few years ago. This requirement mainly arose in 2003, when Slovakia participated in the international OECD PISA measurement for the first time. The results showed insufficient ability of 15-year old Slovak students to think critically and think at the level of higher cognitive processes. This was followed by other unflattering findings from several groups in the educational environment, including teacher students and teachers in primary and secondary schools and universities. This prompted the efforts of many Slovak experts to delve deeper into the problem at the scientific level. Since recent years our country has embarked on a new era of education in the Slovak Republic, namely the integrity of critical thinking and character education. We are inspired by many effective Character Education Programmes from abroad. The Ministry of Education, Science, Research and Sports of the Slovak Republic has supported several grants in an effort to change mainly university teacher training. Our long-term goal is to change undergraduate teacher training with an orientation towards the quality of educational outcomes in the area of critical and moral thinking.

A part of the extensive research focused on the critical and moral thinking of teacher students was an experimental intervention. One of the goals of the experiment was to find out the opinions of experimental groups on traditional and innovative ways of teaching. The innovative programme was focused on the targeted development of critical and moral thinking of students in undergraduate teacher training. The basic measurement tool was a scheme of a two-factor semantic differential, which provides information about the evaluation factor and the energy factor for the monitored component. In this study, we present the evaluation of the subjects of the experiment for the course of the lesson, the so-called seminar. The starting point for formulating a scientific problem was the theories of world experts such as P. Facione, R.W. Paul, L. Elder, G. Lind.

2 Starting point in formulating the problem

Until recently critical thinking and moral reasoning in Slovak professional field were dealt separately, although the connection between the two domains is implicitly indicated. The concept of critical thinking is based on the original definition of the Delphi Report, which defines cognitive abilities and affective dispositions (Facione, 1990) and conceived standards of a good critical thinker with the necessary intellectual virtues (Paul & Edler, 2006).

From the point of view of moral reasoning, we rely on Lind's theory (2013), who grasps Kohlberg and Habermas's definition and complements it with an element of conflict and dilemma (implicitly indicated by Kohlberg). We also find this integrity in Lajčiaková's (2008) definition, who considers moral competence to be a kind of a bridge between moral attitudes or moral values on one hand and moral behavior on the other. It is the capability of an individual to reach moral judgments based on his or her internal principles and then to act in accordance with those judgments. This means that moral competence as a sign must be reflected not only in thinking but also acting. A morally competent person thus makes moral decisions and acts morally. Her or his thinking is reflected in her or his behavior. Lind (2013) suggests that moral competence includes, besides the ability to judge which action is correct in relation to a moral principle, the ability to solve dilemmas and conflicts between morally equal alternatives of action. Kaliská, Kaliský and Čizmaríková (2013) state that morally competent judgment means that both parties will try to resolve the conflict on the basis of general moral principles (e.g. the principle of justice, free expression, etc.) through thinking and discussion. Here we can see great space for the integrity of critical and moral reasoning, in which cognitive abilities, affective dispositions overlap with the virtues of a critically and morally responsible thinker.

The most concise integrating understanding of the critical and moral aspects can be registered with Paul (2020). Critical thinking understood as an individual skill separated from values, is often used to rationalize prejudice and interest. Moral integrity and responsible citizenship, only understood as a *good heart*, are themselves more likely to be manipulated by propaganda. Human mind, whether it is its conscious goodwill, is a subject of a strong, self-deceptive, unconscious egocentric mind. The full development of each characteristic - critical thinking, moral integrity and responsible citizenship - in its strong sense requires and develops other ones in a parallel strong sense. The three mentioned are only developed together in an atmosphere which encourages intellectual virtues: intellectual courage, intellectual empathy, intellectual goodwill or integrity, intellectual perseverance, intellectual justice and faith in reason. The intellectual and moral virtues themselves are interdependent.

3 Research methodology

The basic goal of this part of the research was to find out how the students included in the experiment evaluated the development of critical and moral thinking during the teaching process on their seminar.

3.1 Research Design

We used the Semantic Differential method to measure the attitudes of teacher students to the development of their critical and moral thinking during the seminars. We created a record sheet (study appendix) with the individual meanings of selected terms measured. At the end of the experiment, the students assessed 9 concepts (lecture, seminar, homework, experience, memorization, reflection, classmates, evaluation, I as a critically thinking person - self-reflection) with 15 scales of a two-factor

semantic differential, 6 of which measure the evaluation factor and 9 the energy factor. Each assessed concept was submitted on a separate record sheet. Choosing a point on the scale the subjects of the experiment indicated the degree of properties expressed by the particular pair of adjectives. Numerical values 1 to 7 were assigned to individual points on the scale. In order to avoid stereotypical assessment in scales, some scales were presented in the so-called reverse form and in the record sheet were marked by an asterisk (Chráska, 2007). It was quite difficult to choose a certain range of relevant adjectives applicable to several terms. The original list of 50 scales of semantic differential according to C. Osgood from 1958 presented by Chráska (2007, p. 225) was helpful. In this paper we offer an analysis of students' attitudes to one concept (or object) – a seminar, i.e. that students evaluated the course of the teaching process aimed at developing of critical and moral thinking after the experiment had finished.

3.2 Participants

The selected sample of this study consisted of three balanced groups of 2nd year teacher students of the bachelor's degree at the University of Prešov in Prešov (one-way ANOVA results - $p = 0.889$). There were 21 students in the control group who were taught in traditional way. Experimental group 1 (EG – $n = 21$) and experimental group 2 (EG – $n = 20$) included a programme for the development of critical and moral thinking.

3.3 Procedures

The experiment was carried out during 13 weeks of the summer semester in three subjects. The lectures were presented in traditional way. During the seminars, the control group proceeded in the classic usual way. The group was taught by a teacher who followed exactly the previous customs (according to the information sheets of study subjects). The experimental groups completed a programme for the development of critical and moral thinking (3 hours and week). The teaching during the seminars was provided by a trained teacher who prepared the programme and who also mastered the difference between classical and innovative teaching in the given subjects very well.

In addition to demanding testing of the entry level of critical and moral thinking, students were presented with moral dilemmas, e.g. solving socio-cultural aspects of education - the problem of integrating a classmate of another culture into the school staff, testing and relatively possible cheating of a student during an online conference, etc. Part of the preparation for the seminar lessons was the study of the theoretical anchoring of the problem and the possibility of its solution. One topic was set each week. In the integrated way of developing critical and moral thinking, we used active methodologies: case stimulation, case studies, workshops with ethical dilemmas, realistic simulation, various model situations.

3.4 Statistical methods

We used one-way ANOVA (conditions are met, the dependent variable is at least interval, the approximately normal distribution, the selection is random and independent and the homogeneity of the variances is preserved). For descriptive characteristics, we present the number of subjects of individual groups (n), mean (M) and standard deviation (SD). The Benferroni post hoc test was used to determine statistically significant differences.

4 Research results and discussion

The semantic differential is one of the effective methods used to find out the views involved in the research.

4.1 Results of opinions of subjects of experimental groups

The two-factor semantic differential record sheet contained 15 pairs of adjectives. At the end of the experiment students evaluated the course of the teaching process focused on the

development of critical and moral thinking using a 7-point scale. In Table 1 we present the findings on the term of seminar.

Tab. 1 Perception of the term Seminar in groups of experiments – evaluation factor

A pair of adjectives	CG – control group (n = 21); EG1 – experimental group 1 (n = 21); EG2 – experimental group 2 (n = 21)					
	CG		EG1		EG2	
	M	SD	M	SD	M	SD
bad / good	4,76	1,23	6,66	0,56	6,70	0,45
unpleasant / pleasant	4,00	1,02	6,66	0,56	6,45	0,66
weak / strong	4,66	1,39	4,90	1,10	4,85	1,15
tense / relaxed	5,00	1,06	6,47	0,73	5,85	1,58
uninteresting / interesting	5,23	1,44	6,66	0,56	6,50	0,50
ugly / nice	5,19	1,43	6,38	0,72	6,55	0,58
Gross score	4,80	0,90	6,29	0,35	6,15	0,47

Key: n – number; M – average; SD – standard deviation

The evaluation factor (Table 1) indicates that the perception of the term "Seminar" in the control group ($M = 4.80$; $SD = 0.90$) differs from experimental group 1 ($M = 6.29$; $SD = 0.35$) and experimental group 2 ($M = 6.15$; $SD = 0.47$). Experimental groups evaluated seminar classes focused on the development of moral and critical thinking more positively. They evaluated the innovative way of teaching as better, more pleasant, stronger, with a relaxed atmosphere, more interesting and nicer. The most positive average rating was given by EG1. The control group evaluated traditional teaching more negatively.

The average values in the semantic space of the term "Seminar" in terms of energy factor are shown in Tab. 2.

Tab. 2 Perception of the term Seminar in groups of experiments - energy factor

A pair of adjectives	CG – control group (n = 21); EG1 – experimental group 1 (n = 21); EG2 – experimental group 2 (n = 21)					
	KS		ES1		ES2	
	M	SD	M	SD	M	SD
undemanding / demanding	3,19	1,36	4,85	1,20	4,25	1,57
moderate / strict	3,61	1,09	3,61	1,21	4,40	1,42
easy / difficult	4,04	1,29	3,66	1,24	4,05	1,24
passive / active	3,66	1,61	6,71	0,54	6,30	1,18
unproblematic / problematic	3,33	1,42	3,04	1,17	2,80	1,91
worthless / valuable	5,33	1,28	6,33	0,94	5,90	1,75
quiet / loud	3,90	1,63	4,76	0,97	4,65	1,62
short / long	4,09	1,34	4,00	0,92	4,20	1,32
ineffective / effective	5,90	0,92	6,19	0,79	5,80	1,07
Gross score	4,12	0,68	4,79	0,43	4,70	0,57

Key: n – number; M – average; SD – standard deviation

The term "Seminar", in terms of the perception of experimental groups, is in close proximity, which means that it is perceived similarly in experimental groups. Experimental groups rated the energy factor in 'during the innovative seminar classes higher. They considered the seminar for the development of moral and critical thinking in terms of energy to be more demanding, stricter, more difficult, much more active, less problematic, more valuable, a little louder, shorter. Overall, the highest average score was achieved by EG1 ($M = 4.79$, $SD = 0.43$) and slightly lower average by ES2 ($M = 4.70$, $SD = 0.57$). The traditional teaching of the control group was evaluated on average $M = 4.12$ ($SD = 0.68$).

4.2 Discussion of the findings

We compared the results of the perception of the term "Seminar" in individual groups in both the energy factor and the evaluation factor. We used one-step analysis of variance. The results are shown in Table 3 and Table 4.

Tab. 3 Comparison of group averages achieved in the evaluation factor (concept – seminar)

Seminar (evaluation factor)	n	M	SD	F	s.v.	p
control group	21	4,80	0,90	35,621	2	< 0,000
experimental group 1	21	6,29	0,35			
experimental group 2	20	6,15	0,47			

Based on the results, significant differences were demonstrated between the individual groups ($F = 35.621$; $p < 0.000$) in the evaluation factor. The post hoc test (Benferroni) showed the existence of differences between the control and experimental groups ($p < 0.000$). The experimental groups did not differ significantly ($p > 0.05$). As shown in tab. 3, control group achieved a lower average result ($M = 4.80$; $SD = 0.90$) than the experimental group 1 ($M = 6.29$; $SD = 0.35$) and experimental group 2 ($M = 6.15$; $SD = 0.47$).

The comparison of averages in the energy factor to the term "Seminar" is presented in tab. 4.

Tab. 4 Comparison of group averages achieved in the energy factor (concept – seminar)

Seminar (energy factor)	n	M	SD	F	s.v.	p
control group	21	4,12	0,68	8,572	2	< 0,001
experimental group 1	21	4,79	0,43			
experimental group 2	20	4,70	0,57			

Based on the results, we state that there are significant differences between the individual groups ($F = 8.572$; $p < 0.001$) in the energy factor. The post hoc test (Benferroni) showed the existence of differences between the control and experimental groups ($p < 0.001$). The experimental groups did not differ significantly ($p > 0.05$). As shown in tab. 4, the control group achieved a lower average result ($M = 4.12$; $SD = 0.68$) than the experimental group 1 ($M = 4.79$; $SD = 0.43$) and the experimental group 2 ($M = 4.70$; $SD = 0.57$).

Based on the test results we can state that the groups which completed the programme of development of moral and critical thinking achieved higher average score in evaluation of teaching process than the control group, which completed traditional teaching.

The students of experimental groups developed their:

- basic research skills – information gathering, organization and planning, critical thinking, moral dilemmas solving;
- basic personal skills – dispositions of a critical thinker, intellectual and moral virtues;
- professional skills – career development, professional supervision of argumentation and questioning, self-regulation.

The observed energy factor (Table 2) proved that such teaching is more demanding, stricter, heavier, a little louder, but much more active and more valuable. We were inspired by research from the Jubilee Center for Characteristics and Virtues (2020) at the University of Birmingham. Critical thinking cannot be taught without the values and virtues (intellectual and character) which a critical thinker should have (Knapík, 2020a; Maturkanič, 2018, 2020, etc.). Several authors state that the educational process should help learners to become moral individuals who have the ability of critical thinking and moral judgment (Knapík, 2020b; Kučerková, 2018; Pintes & Borisová, 2020).

5 Conclusion

The current priority of Slovak education is the development of a morally responsible individual. More than ever, our country realizes that we need graduates who have the ability to think analytically, behave ethically, and make morally right decisions. The State Educational Programme of the Slovak Republic has created official space for the support of moral and critical thinking in education. It is hardly reflected

in practice. In our programme, we have integrated critical thinking skills into the process of moral reasoning. In the semester experiment, it was shown that students of experimental groups perceive this integrity in teaching much more intensely than groups of students who have completed classical teaching. Long-term interest in the issue leads us to change the curriculum in the next accreditation process at Slovak teaching faculties. We consider the support of moral and critical thinking in future teachers to be a necessary step nowadays.

Literature:

1. Facione, P.A., 1990. *Critical Thinking: A Statement of Expert Consensus for Purposes of Educational Assessment and Instruction* [online]. [cit. 2020-03-30]. Retrieved from: <https://www.insightassessment.com/article/expert-consensus-on-critical-thinking>
2. Chráska, M., 2007. *Metódy pedagogického výskumu*. Praha: Grada. 265 s. ISBN 978-80-247-1369-4.
3. Kaliský, J., Kaliská, L., & Čížmariková, K., 2013. *Morálny vývin stredoškolskej mládeže*. PF UMB: Banská Bystrica. 128 s. ISBN 978-80-557-0643-6.
4. Knapík, J., 2020a. Hodnotová orientácia študentov vysokých škôl. *Verbum: Katolícka univerzita v Ružomberku*. 220 s. ISBN 978-80-561-0781-2.
5. Knapík, J., 2020b. The moral value orientations of university students. In: *Ad Alta*, vol. 10, no. 1, pp. 128–131.
6. Kučerková, M., 2018. Interpretácia mystickej skúsenosti na pozadí fenomenológie Jeana-Luca Mariona. In: *World Literature Studies*, vol. 12, no. 3, pp. 16–28.
7. Lajčiaková, P., 2008. *Psychológia morálky*. Brno: Cerm. 92 s. ISBN 978-0-7204-569-3.
8. Lind, G., 2013. Moralische Kompetenz. In: B. Dippelhofer-Stiem, & S. Dippelhofer (Eds.). *Erziehungs- und Bildungssoziologie, Enzyklopädie Erziehungswissenschaft*. Online. München: Juventa-Verlag.
9. Maturkanič, P.P., 2018. *Základy etiky: Vybrané otázky z praktické filozofie*. Terežín: Vysoká škola aplikované psychologie. 155. s. ISBN 978-80-87871-05-8.
10. Maturkanič, P.P., 2020. *Etika*. Terežín: Vysoká škola aplikovanej psychologie. 166 s. ISBN 978-80-87871-08-9.
11. Paul, R.W., 2020. *Critical Thinking, Moral Integrity and Citizenship*. Tomales [CA]: Foundation for Critical Thinking. [online]. [cit. 2020-02-20]. Retrieved from: <http://www.criticalthinking.org/pages/critical-thinking-moral-integrity-and-citizenship-teaching-for-the-intellectual-virtues/487>
12. Paul, R., & L. Elder, 2006. *The Thinker's Guide to Understanding the Foundations of Ethical Reasoning*. Dillon Beach [CA]: Foundation for Critical Thinking, 56 pp. ISBN 978-0944583173.
13. Pintes, G., & S. Borisová, 2020. Alternatívy a otázky pri implementácii programu filozofia pre deti. In: J. Kaliský, (ed.). *Kritické myslenie a filozofická reflexia v edukácii*. Banská Bystrica: Belianum, s. 41–51. ISBN 978-80-557-1673-2.
14. The Jubilee centre For Character & Virtues, 2020. *Schools of Virtue* [online]. [cit. 2020-10-30]. Retrieved from: <https://www.jubileecentre.ac.uk/1589/projects/character-education-research/schools-of-virtue>

Primary Paper Section: A

Secondary Paper Section: AM, AN

EXISTENCE OF LATENT AGGRESSION AT STANDARD AND SPECIAL CLASSES IN SLOVAK SCHOOLS – EDUCATORS' FINDINGS

^aBARBORA KOVÁČOVÁ, ^bSTANISLAV BENČIČ, ^cANNA HUDECOVÁ, ^dHELENA ORIEŠČIKOVÁ, ^eALEXANDRA ALEKSANDRA SIEDLACZEK-SZWED

^{a,c,d} Department of Pedagogy and Special Education, Faculty of Education, Catholic University, Hrabovská cesta 1A, 034 01 Ružomberok, Slovakia

^b Faculty of Mass media, Pan-European University, Tomášikova 150/20, 821 02 Bratislava, Slovakia

^e Department of Pedagogy, Faculty of Social Sciences, Jan Długosz University in Częstochowa, Waszyngtona 4/8, 42-200 Częstochowa, Poland

email: ^abarbora.kovacova@ku.sk, ^bstanislav.bencic@paneuroimi.com, ^canna.hudecova@ku.sk, ^dhelen.oriescikova@ku.sk, ^ea.siedlaczek-szwed@ujd.edu.pl

The study presents an analysis of findings from a long-term research supported by the VEGA agency 1/0452/18 Identifications, analyses, inhibitions of latently aggressive children's actions in pre-school period.

Abstract: The paper describes research findings that focused on the occurrence of latent aggression in special classes in primary schools and in classes where pupils with health handicaps are educated. The research evaluators were teachers who educated pupils at a health disadvantage in schools. The indicators show the occurrence of latent aggression in classrooms, where pupils with health handicaps are educated.

Keywords: aggressive behaviour, latent aggression, kindergarten

1 Theoretical background

When dealing with latent (hidden) aggression at schools, it is necessary to mention that school classes are premises for its emergence and formation. At the same time, those premises also provide space for the implementation of preventive programs aimed at inhibiting latent aggression in the classroom, school (Kováčová, 2014, Šavrnichová et al., 2020). According to Gajdošová (2000), school classes have solid groupings that are connected by mutual relationships created on the basis of coexistence and that are aware of mutual togetherness. Relationships in classes or peer groups themselves are also a space for latent aggression. Adamík Šimegová (2011, p. 9) claims about the school environment, that it is "inevitably also a space of constant movements, dynamics, and formation of forces, which also give potential for assertion, aggression and violence."

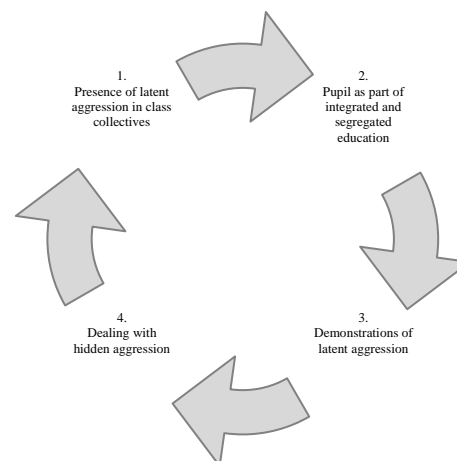
The form of this aggressive behaviour is a negative factor for every school, class, educator and pupil. Latent aggression is also one of the barriers to inclusive education (Šuhajdová, 2019). It harms the social networks of children/pupils with disabilities, specifically affecting components such as friendship/relationships, interaction / contact and perception / acceptance (Bizová, 2013). According to specific educators' statements, physical bullying can be identified more quickly in comparison with hidden aggression. The pedagogues' research findings and conclusions (Kováčová, 2019) confirmed that physical aggression is more visible for educators in the school environment. Teachers say they do not have the professional abilities and competencies to detect latent aggression. Up to 78% of educators point to the fact that bullying in schools is revealed in the case when victims decided or more precisely forced to do tragic solutions or bear sorrowful consequences ... In particular, victims feel help from the competent authorities in raising awareness related to their problems, in immediate coping strategies such as govern the problem, choosing an effective approach and assistance.

Based on those facts, we focused on the occurrence of latent aggression in the classes where the pupils with health handicaps are educated, in so-called special classes and general classes. The direct participation of an experienced teacher, who was involved in aggressive acts, should be considered as a significant factor in the described research.

2 Research methodology

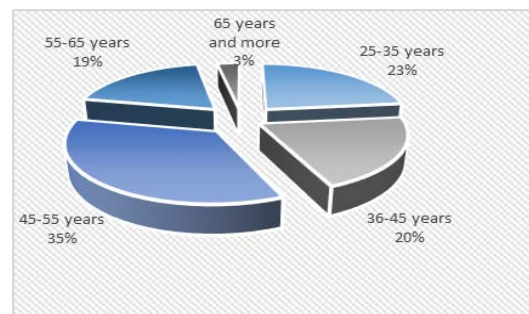
Within more detailed research related to latent aggression, there was used a method of group interview focusing on the research of four factors (Figure 1).

Figure 1. Four factors (research)



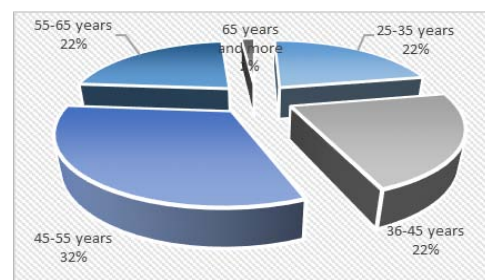
The educators who were divided into two groups took a part in the interview. The first group (group A) represented educators ($N_a = 69$) who teach in general classes where was the handicapped pupil who was registered as individually integrated (Graph 1).

Graph 1. Research Group A classified according to age



The second group (group B) consisted of educators ($N_b = 59$) who taught in special classes in general schools or teach in special classes (Graph 2).

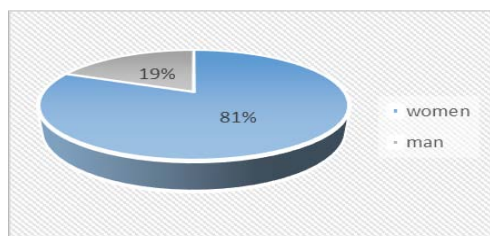
Graph 2. Research Group B classified according to age



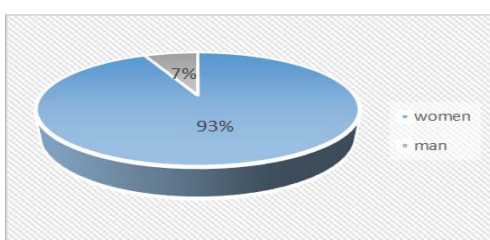
When comparing the age in the separate groups we can state that participants aged 45-55 years represented the most numerous group in the mentioned both groups.

The working groups that took part in the group interview had 8-10 active participants at an average. The group interview took place directly in schools; one meeting lasted about 220 minutes. The characteristics of the groups are presented in a graphic design based on gender (Graph 4, Graph 5) and the highest level of education achieved (Figure 2, Figure 3) in the following graphic design.

Graph 3. Research Group A classified on the basis of sex



Graph 4. Research Group B classified on the basis of sex



When comparing gender heterogeneity in the research groups, we conclude that Group A is represented 1:5 in favour of women, Group B is represented 1:14 in favour of women.

Figure 2. Research Group A based on the highest educational achievement

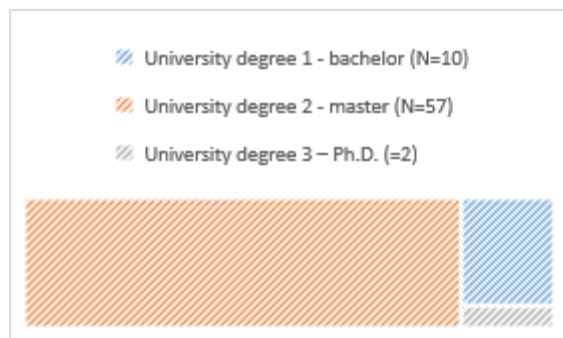
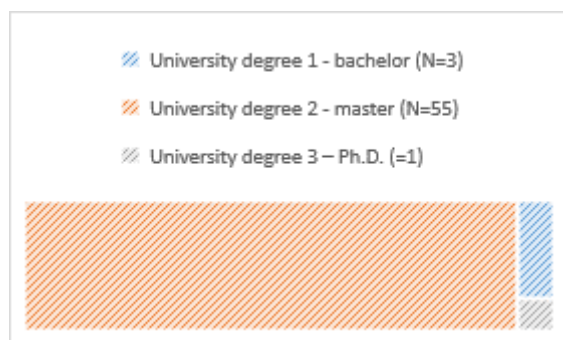


Figure 3. Research Group A based on the highest educational achievement



When comparing the highest educational achievement, it could be stated that both groups have a comparable representation.

The lowest number of educators achieved only secondary and higher education of the 3rd degree.

3 Research findings

3.1 Research findings (elementary schools)

Based on interviews with educators (Na = 69) from general elementary schools, we present the following findings based on the four factors mentioned above.

3.1.1 The presence of latent aggression in class collectives.

Interviews with educators confirmed the occurrence of latent aggression, although its increase or decrease cannot be objectively assessed. Up to 47% of educators admit latent aggression, but they do not have the means to prevent this form of aggressive behaviours. They used own experience to point out to insufficient knowledge abilities. To a greater extent, educators have verbalized the problem of detection and, based on experience, have also demonstrated their concerns, e.g.

- *It was in communication with the pupil – victim, who did not manage recalcitrant problem and came to tell about it to the new colleague, who just joined* [R5 / 1PS / 42].
- *We did not reveal it, it was just a coincidence, even if the educational counsellor says something else* [R1 / 2PS / 55].

We have no means of revealing it - what do we do to them? Will we write them worse assessments in behaviour report cards? They laugh and rag. The teacher no longer has the position he had ever had, even when dealing with problematic pupils, and overall ... [R2 / 4PS / 57].

Educators think that if they had sufficient and effective means (in terms of effective sanctions), and information about latent aggression (how to reveal it and what is needed to observe), it is probable that latent aggression in school would be detected and eliminated.

3.1.2 Pupil as part of integrated education

Interview with teachers was designed to know the status of integrated pupils, more precisely; pupils with special educational needs in the classroom. The testimony suggests that the inclusion of a pupil with disabilities in intact collectives is a common matter, but the training of community does not exist yet.

- *The responses of healthy pupils to the inclusion of the disabled ones seem to be at the first glance positive, but there are also individuals trying to "hide" their reactions, but I know they have not accepted this child. Then, problems will start and problems will be exacerbated.* [R2 / 4PS / 57]
- *In our case, each individually integrated one was problematic, either in behaviour or in learning. It even happened that he was the initiator of class aggression.* [R4 / 4PS / 31].

The most frequent victims of hidden aggression were pupils with cognitive and health handicaps. Educators state that hostility to disadvantaged children comes from the family environment. *I do not dare to talk about the parents' reactions, but I did not catch any negative reactions from them, except some parents' comments during parents' associations meetings. Those comments were more than unpleasant, especially when the parent of this pupil left and the discussion started about him without him (...) when I remarked that it was inappropriate, one of them told me: "don't take it too seriously, the whole class will be lazy, because teachers pay to Patrick all attention. I don't know when our children will catch up on, they don't know anything, and they have no homework*

because everything revolves around him and his individual schedule ... [R6 / 4PS / 28].

3.1.3 Manifestations of latent aggression.

The described manifestations of latent aggression were divided into two basic groups (Table 1), which shows that rational aggression has a higher incidence, despite a lower number of manifestations compared to social manipulation.

Table 1. Occurrences of latent aggression during integrated education

RATIONAL AGGRESSION		SOCIAL MANIPULATION	
Specific Expression	Frequency	Specific Expression	Frequency
Escalated criticism against the victim	55 %	Prejudicial information without verifying the truth	42 %
Call in question opinions, ideas to degrade the victim	28 %		
Thefts (to hide victim's belongings without a chance to find them), or demolishing of personal belongings	17 %	humiliating remarks with the repeated intention to hurt the victim	25 %
		Incitation to hurt the victim	15 %
		Segregation with intention of activity isolation	18 %

3.1.4 Prevention and dealing with hidden bullying

The interview with teachers shows that teachers seek professional help and appreciate the presence of professional staff at the school. They take their presence like obviousness, which is needed in every school.... *our school was one of the first to have a school psychologist, we appreciate his presence. He cooperates with a special pedagogue. It depends on the situation ... we also cooperate with a psychological counsellor, so if necessary we can also contact him* [R9 / 2PS / 33 / F].

Despite the fact that teachers agreed on the general idea of inclusion (they consider it ideal concerning children with behavioural disorders). The limitation in their work on uncovering hidden aggression is the lack of knowledge and training of practical skills to cope with hidden aggression in the classroom (e.g. use of drawing Valachová, 2019; use of bibliodrama, Chanasová, 2019, etc.).

3.2 Research findings (special elementary schools)

Based on interviews with educators (Nb = 59) from special elementary schools, we present the following findings.

3.2.1 The presence of latent aggression in class collectives.

Based on interviews with educators, it is evident that latent aggression occurs in segregated conditions compared to integrated education sporadically (17% of teachers admit it).

3.2.2 Pupil as part of integrated education

A pupil with a disadvantage in integrated conditions by stigmatization and isolation involuntarily loses friends, thus also social relations in the classroom. Anxiety leads to a loss of interest in the school, even the victim may not finish the school (up to 35% of disadvantaged pupils are voluntarily transferred to special schools).

Usually, he or she either voluntarily leave or seek possible and targeted exclusion for a specific, trivial reason. The pupil who is influenced by that "package of experience" is entering into segregated education. Personal failure in a collective or group

and a sense of inferiority increases victimization after the aggressor appears in a new team. This is one of the reasons why educators say that the reason for transferring to their school must be known because the bullying of the pupil and his subsequent school failure is always a signal to increase attention during the adaptation period.

- *Miško entered in and we had a lot to do to control him. He was normally able to manipulate the class and hate. And he always seems to be innocent arguing that somebody else beat him.*
- *Mrs. teacher, I saw that they were doing wrong and so terrible. They beat Janko, one of them commands and the second one beats Janko again.* "1 [R7 / 2SPS / 5]

Educators have to know their pupils all the better because their expression may not be so understandable, because they have e.g. barriers to communication, they have difficulty expressing themselves as accurately as possible or authentically describing the situation (mostly pupils with cognitive disadvantages).

3.2.3 Manifestations of latent aggression.

The described manifestations of latent aggression in special elementary schools have been divided into two basic groups (Table 2), which shows that social manipulation in the context of latent aggressive behaviour has a higher incidence compared to rational aggression.

Table 2. Occurrences of latent aggression within segregated education

RATIONAL AGGRESSION		SOCIAL MANIPULATION	
Specific Expression	Frequency	Specific Expression	Frequency
Thefts (to hide victim's belongings without a chance to find them), or demolishing of personal belongings	18 %	Prejudicial information without verifying the truth	33 %
		Humiliating remarks with the repeated intention to hurt the victim	24 %
Call in question opinions, ideas to degrade victim	8 %	Incitation to hurt the victim	11 %
		Other incitation-valid for individual situations (unquestionable latency in the behaviour of the aggressor towards the victim)	6 %

3.2.4 Prevention and dealing with hidden bullying

Identical conclusions were also recorded based on interviews with educators who carry out preventive activities within class hours as prophylactic measures. In case of suspicion of bullying in the group, they use rather individual interviews. Up to 35% of educators agreed that they had minimal knowledge of latent aggression. Based on the above findings, we find that hidden bullying is a common part of class groups regardless of the age of the participants. Rational aggression is more prevalent in peer groups in general schools, as opposed to peer

¹ Authentic transcript from a special elementary school pupil interview with a teacher

groups in special schools dominated by socially active aggression.

In the case of latent (hidden) aggression from educators' point of view, we state the following:

- The strongest predictor to successfully identify hidden aggression was training of educators. Up to 1/6 of the teachers have had training (relevant training) on this issue and they have a more positive attitude towards its detection and further work with the group.
- The second predictor was the personal factors of the educators (*less stress and more time for the class and paying special attention to pupils with aggressive behaviours*).
- The third predictor was the age of the educator, it was confirmed that the age-younger educators tend to be more positive compared to the age-old colleagues.
- The fourth predictor was the support of school in dealing with this issue, in terms of active climate monitoring of individual classes, support of teachers in further education and real organizing of professional counselling service directly at the school (psychologist, medical educator, eventually special educator, Kováčová, 2019; Vaska et al., 2019).

Latent aggression is a specific form of bullying that Crick - Grotzinger (1995) called as non-physical aggression. From their point of view, it is a momentary effect in the mutual behaviour of people in society, at all levels of social contacts. Later, Fried, Fried (1996) said that this form of aggression should not be considered to be a typical aggressive behaviour because this silent, historically tolerated behaviour was considered as a natural part of socialization. Social aggression has been (and currently remains) an impulse for observation in research and professional publications. Putallaz et al. (2007) confirmed that it is a deliberate ignorance of a member (victim) in various situations, but which strictly excludes any direct attacks on the victim (Kováčová, 2019). Later, they considered slander, obloquy aimed at weakening the position of the victim to be the indirect manifestations, resulting in damage to the reputation (concerning the "good name" or the social reputation) of the victim.

3 Conclusion

Based on the presented research findings, it is possible to conclude that current groups of younger schoolchildren create and accept a variable range of relationships from friendly to hostile ones. These relations are also manifesting themselves (not only) by aggression, hatred or hostility. The whole process of hidden aggression begins covertly, in the case, that this form of aggression is not revealed, it gradually transforms into direct aggression.

In accordance with the presented research, the current situation in Slovak schools confirmed the existence of hidden aggression in class groups; it means the presence of latent aggressive phenomena in social relations and their occurrence among disadvantaged pupils of younger school age.

It is necessary to consider a long-term systematic work in favour of inhibiting latent aggression, especially if intervention itself has not started at an early age. The primary form of eliminating hidden aggression in the child/pupil groups is training that promote their competencies in the area of social relationships (Jablonský, 2019). Rather, interactive and experiential processes of fictitious or real situations are used that are adequately addressed with respect to the age of the participants.

On the basis of the above statements of educators, it is necessary that the preventive module aiming to successful results against latent bullying contained:

- Thematic training showing latent aggression in theoretical background and findings (complemented by good practical examples from abroad);
- experience training to deal with a specific situation;
- an internal preventive module containing procedural schemes depicting the school's cooperation with appropriate participants of latent bullying and procedural schemes to support the school's management and staff;
- to validate of the preventive module within procedural schemes in a particular school.

Literature:

1. Adamík Šimegová, M. Inštitucionálne a sociálne aspekty šikanovania v školskom prostredí šikanovanie v prostredí školy. *Šikanovanie v prostredí školy: (možnosti prevencie a zvládania)*. Trnava: Typi Universitatis Tyrnaviensis. 2011, p. 11-27.
2. Bizová, N. Sociálne interakcie žiakov v procese inkluzívnej edukácie. Lechta, V. (ed.) *Inkluzívna pedagogika a komponenty*. Trnava: Typi Universitatis Tyrnaviensis, 2013. p. 106-118.
3. Crick, N. R., Grotpeter, J. K. Relational aggression, gender, and social-psychological adjustment. *Child Development*, 1995, R. 66, p. 710-722.
4. Fried, S.; Fried, P. *Bullies & victims: Helping your child through the schoolyard battlefield*. New York: M. Evans and Company, Inc., 1996.
5. Gažoňová, E. *Poznávanie sociálnych vzťahov v triede: Práca so sociometricko-ratingovým dotazníkom*. Bratislava: Metodické centrum mesta Bratislavy, 2000. 49 s.
6. Chanasová, Z. Bibliodráma pri práci s agresivitou dieťaťa. *Expresivita v (art)terapii 2*. Ružomberok: VERBUM, vydavateľstvo KU, 2019. ISBN 978-80-561-0690-7, p. 138-148.
7. Jablonský, T. Aggressive behaviour at schools and suggested ways to address it. *Štúdie o latentnej agresii*. Ružomberok: VERBUM, vydavateľstvo KU, 2019. ISBN 978-80-561-0716-4.
8. Kováčová, B. *Latentná agresia v škole*. Bratislava: Musica Liturgica, 2014. 97 s. ISBN 978-80-89700-02-8.
9. Kováčová, B. Reálne situácie mapujúce skryté agresívne konanie v skupinách detí predškolského veku v slovenských materských školách. *Pedagogická revue* Roč. 66, č. 1 (2019), s. 51-72. ISSN 1335-1982.
10. Putallaz, M.; Grimes, C.; Kristen, J.; Kupersmidt, J.; Coie, J.; Dearing, K. Overt and relational aggression and victimization: Multiple perspectives within the school. *Journal of School Psychology*, 2007, 45, p. 523-547.
11. Šavrnichová, M., Almašiová, A., Almáši, M., Vaska, L., Barták, M., Gabrhelík, R., Petruželka, B., Vacek, J. Identifikácia rizikových skupín žiakov a žiačok základných škôl na Slovensku a v Česku pre účely tvorby efektívnych preventívnych opatrení v oblasti technologických závislostí. *Sociálna práca/Sociálna práca*, 2020; 20 (2): 31-49.
12. Šuhajdová, I. Inclusion and inclusive education through the eyes of the majority in Slovakia. In: *Sodobna Pedagogika*, 2019, Roč. 70, č. 2, p. 142-158.
13. Valachová, D. Possible social aggression in the drawing of the child. In: *Štúdie o latentnej agresii II*. Ružomberok: Katolícka univerzita v Ružomberku. 2020. ISBN 978-80-561-0744-7, p. 60-69.
14. Vaska, L.; Almáši, M. Creative supervision/ the possibilities and limits of its use in supervising the organization. In: *Nové smery, trendy a inovace v sociálnej práci*. Hradec Králové: Gaudeamus, 2019. ISBN 978-80-7435-745-9, p. 242-253.

Primary Paper Section: A

Secondary Paper Section: AM, AN

GRAPHIC VISUALIZATION OF LEARNERS' MENTAL REPRESENTATION

^aNINA KOZÁROVÁ, ^bJANA DUCHOVIČOVÁ

Constantine the Philosopher University in Nitra, Department of Pedagogy, Drážovská cesta 4, 949 74 Nitra, Slovakia
email: ^ankozarova@ukf.sk, ^bjduchovicova@ukf.sk

The paper was developed with support under APVV project no. C-15-0368 called "Practice in the Centre of the Subject Field Didactics, Subject Field Didactics in the Centre of Practical Training". The paper was developed with support under VEGA 1/0391/20 project TRANSFORMATIVE LEARNING OF THE STUDENT TEACHERS IN THE CONTEXT OF PUPILS' CRITICAL THINKING DEVELOPMENT.

Abstract: The presented paper compares the influence of nonlinear structuring of the curriculum on the graphical visualization of the curriculum of a selected thematic unit in the mental representations of learners. The method of an experiment and the method of a test of conceptual mapping were applied in the research. The consistency of concept maps was assessed by the relational method of evaluation through an ordinal variable: graphical visualization of a concept map. By the analysis of the results it has been discovered that through the use of nonlinear structuring of the curriculum the learners' results have improved in experimental groups within the investigated parameter of operationalization.

Keywords: concept map, mental representation of a curriculum, meaningfulness, parameter, structuring of the curriculum, strategy.

1 Introduction

In recent decades we have seen a growing negative response to the quality of didactic procedures applied in school. Despite the critical response towards school and school education there is no doubt about the importance of education for human life. Today we know that teaching only scientific knowledge is not enough and that part of effective teaching is the development of skills linked to critical thinking such as: the ability to identify key ideas in texts and arguments, to recognize connections, to search for relationships between information, to correctly interpret data, to draw logical conclusions. All of the mentioned connections regardless of the specificity to the subject in schools give teachers a specific task: to psycho-didactically process the curriculum and include such teaching methods that stimulate critical thinking skills.

2 Psycho-didactic Competencies of a Teacher

Following international efforts to support the development of critical thinking of learners in the teaching process it is desirable to identify in our provenance educational strategies that have the potential to stimulate critical thinking in educational practice. Within the preparation process of future teachers we consider the identification of strategies for the development of critical thinking as a basic prerequisite for quantitative and qualitative change in their training for the 21st century. The requirement for the determination of strategies of critical thinking development is to define the construction level of critical thinking and the evidence that the skills to think critically can be directly influenced within the educational process (Halpern, 2014; Abrami, et al, 2008; Heyman, 2008).

The basic pillar of the school and formal education as a whole is the teacher which logically implies a requirement to change the preparation of future teachers. We believe that the goal should be to equip teachers with psycho-didactic competencies so that they are able to provide cognitive-oriented learning experiences and implement adaptive teaching strategies for the development of learners' critical thinking. We define teacher's psycho-didactic competencies as the abilities and skills of a teacher to psycho-didactically process the curriculum and manage education with the intention of developing learners' cognitive and metacognitive processes and their application in practice, implementing teaching strategies and assessment activities that have the potential to significantly contribute to the development of all personality and cognitive characteristics of a learner.

Authors who have attempted for operationalization and who tried to define strategies for the development of critical thinking

overlap in several constructs therefore critical thinking is defined primarily through the naming of cognitive abilities. According to Kneedler (1985) the development of critical thinking requires the development of competences:

- identify, define and specify the problem (identify the main starting points, controversial issues, determine the main idea of the text, compare the similarities and differences between two subjects, determine which information is important and which is irrelevant, formulate appropriate questions leading to a deeper understanding of the situation)
- assess information related to the problem (distinguish facts and opinions, apply criteria for quality assessment, check the consistency of statements, recognize value systems, recognize emotional factors, various ideologies)
- draw conclusions (determine the suitability and adequacy of the data for the conclusion, predict the likely consequences of the solution adopted).

3 Constructivism in Educational Practice

It appears to us that little attention is paid in educational practice to what teaching strategies are aimed at developing the competence of effective learning and the development of critical thinking. It is necessary to constantly ask ourselves what a successful but especially a functional model of learning should look like. Although each situation provides learners with the same information, they cannot perceive them all at once, so when they perceive, they spontaneously choose the ones they evaluate as easier to accept, although they are not aware of the degree of necessity. It is evident that each learner receives different information from the same situation. The degree of information selection among learners depends on their experience, so the more experience learners have with selecting information, the better they can set their filter.

It is necessary that in educational practice we analyze information that is key to understanding the presented curriculum (knowledge of which is essential) and select information that is complementary and learners can acquire them later. The imperative of a contemporary education system should be not only to lead learners to acquire knowledge but also to organize basic information so that it forms a supportive system for their internal knowledge structure. Constructivist requirements and their application in educational practice represent primarily an emphasis on the individual interpretation scheme of the learner, as a learner with his/her active construction of cognition develops his/her learning mechanisms. We perceive constructivism in the teaching process as a reflected educational activity, construction and reconstruction of learners' internal knowledge system, focusing attention on supporting learner's active understanding and stimulating higher cognitive functions. Constructivist education is not the transfer and subsequent acquisition of "finished" knowledge but the construction of one's own meanings of individual knowledge and their subsequent systematization into the internal knowledge structure.

We understand the constructivist approach in educational practice mainly by updating previous knowledge, the active role of the learner, focusing attention on activities that induce thought operations, problem situations that support the development of critical thinking, the emphasis on social and cultural context when acquiring new information, construction of schemes and models of acquired knowledge, modification of internal knowledge structures based on experience.

We believe that the mechanism of information processing as well as the quality of perception are key determinants for the formation possibly modification of specific learning strategies because stated factors also significantly affect the symbolization, coding, organization of information into functional units and

work with mental representations of learners. A learner's learning strategies should always be assessed especially in the context of his/her cognitive preconditions, thinking, ways of processing verbal and non-verbal information, memory. Modification of learning strategies is very challenging for learners as learning is very often connected with a number of different habits and automated activities.

Ertmer, Newby (2013) include the following among learning and teaching strategies that develop learners' critical thinking: structuring of the curriculum, instructional explanation, conceptual mapping, summaries, syntheses, mnemonics, information organization, analogies, demonstrations, organizing and classifying of information to encourage optimal information processing.

4 Strategies of Curriculum Structuring

When learning or teaching it is necessary to convey to learners not only individual concepts but also the relationships between them. Many times in an effort to understand the relationship between concepts learners are unable to identify the basic structure of the curriculum in the presented text - they either create an incomplete structure or include insignificant relationships in it. Therefore we consider as important that teachers lead their learners during the educational process to be able to independently assemble a structure of the curriculum and then create the entire conceptual-relationship network.

In our understanding we perceive structuring of the curriculum as a basic identification and detection of syntactic structures in mutual relations from the aspect of transfer to the mental space of learners.

Resnick (1996) characterizes three basic indicators that influence the structuring of the curriculum: the manner of teaching (teaching methods, lesson organization), age of learners (adequacy of mediated content to learners), range of curriculum (perfect mastery of main concepts of the curriculum and relationships between them).

The teacher's main principle should be to explain the curriculum to the learners as plastically as possible so that the created "real image" can be transformed into a language that learners understand. In our school system it is as if we have forgotten the technique by which we could significantly simplify learning for learners. We talk about optimal structuring of the curriculum that prevents the mechanical learning of the selected content but supports the processing of the curriculum in its own - understandable way. The problem with current educational practice is that learners often know how to name the facts, data, concepts, the main ideas of the curriculum but they are not able to understand the text, notice and interpret the relationships between the concepts of the so-called concept - relation network. Therefore we came to a conclusion that teaching should be implemented in order to lead learners toward understanding the meaning of the presented curriculum in a comprehensive context. The semantic structure and the broad-spectrum variability of the semantic perception of the curriculum fundamentally influence its subsequent interpretation.

As follows from the above statements the correct structuring of the curriculum is important for better and easier remembering by learners (as there is a better construction of meanings). Through structuring we can consciously create connections between pre-acquired and new knowledge, structuring can be perceived as an active process in which learners create and seek meaning. Among other things students' learning is through structuring more contextual (isolated facts and theories are not learned in abstract form, as they are transcoded into an easier-to-remember form).

4.1 Conceptual Mapping

By the analysis of relevant literary sources we characterize conceptual mapping as the creation of comprehensive schemes

of structural relationships. It is about the organization of the logical structure of certain cognition, the creation of causal, mutual or possibly final relational levels between the whole and its main parts within cognition (ideas, concepts, hypotheses, principles). We consider the concept map as a design of the mind to be the ultimate function of thinking. The map is stored in memory as a structure in which auditory and visual data about specific information are accumulated together with models of effective action.

Conceptual mapping as opposed to linear (in professional literature called 'traditional') structuring of information represents a system that supports the way the human brain works, which is supported by numerous studies of meta-analysis of cognitive benefits of mapping (Nesbit, Adesope, 2006).

Conceptual mapping is a natural technique (the rooted equipment of the human thinking model) for organizing information and visualizing a complex of data as well as their mutual interactions. Through the given technique we can look at the curriculum holistically but also analytically. It brings an innovative view to the subject matter of curriculum and its structure or systematization.

Understanding and interpreting the conceptual map is a demanding and active process that has a relational character as the learner identifies his/her own knowledge structure and key elements of the curriculum. By connecting information with previously created and functional networks of knowledge we gradually mature towards new forms of understanding. We consider conceptual mapping to be a useful technique that facilitates effective learning, the development of critical thinking and the organization of received information into logical relationships (between concepts, ideas, connections, associations).

5 Empirical Considerations

The research was focused on finding connections between the presentation of the curriculum by the teacher and the resulting learner's mental representation of the curriculum - shown through a concept map. Remembering a set of facts or knowledge from the curriculum is not enough. Emphasis is placed on whether the learners have understood the discussed curriculum, whether they can work with it and interconnect related knowledge (included in their internal knowledge structure).

The main goal of our research was to *analyze the conceptual level of structuring the curriculum and its relationship to the creation of mental representations among learners in upper secondary education.*

In the research area we analyzed how the selected type of curriculum structuring applied in mediating the content of the subject history influences the conceptualization of learners' knowledge reflected in their mental representations - represented by a concept map.

H: We assume that learners to whom the subject content was presented by nonlinear structuring achieve a statistically significantly higher level of graphical visualization of the map than learners to whom the subject content has been presented by linear structuring.

5.1 Selection of Research Sample

The professional public considers developmental psychology to be one of the most important aspects in the selection as well as in the organization of the curriculum, specifically the age assumptions and learners' ability to master the curriculum. When we were considering the target group the high school environment appeared to be optimal. It is in high school that learners gradually move to the stage of cognitive development, in which they are able to abstract, work with hypothetical judgments, think in general terms and generalizations. It is about

formal-abstract way of thinking which is the basis for the development of critical thinking. Based on the above statements we deliberately chose a grammar school in Nitra. In addition to the age aspect we also took into account a specific subject within the selection criteria, the intentionality of the selection was given mainly by the topics of the content of education and the relevant year. The total research sample consisted of 96 pupils, four first-year classes of a four-year grammar school. Due to the nature of the research and the formulated hypotheses it was necessary to divide the research sample into two large parts which represented the control and experimental groups.

Table 1: Number of Learners

Group	Number of Learners
Control Group A	26
Control Group B	23
Experimental Group A	23
Experimental Group B	24

5.2 Research Methodology

We used the method of *experiment* to verify the effectiveness of our chosen change in the way of teaching through conceptual mapping. The realized experiment took place in natural conditions at the grammar school in Nitra. In the research we focused on the experimental verification of how the selected type of structuring of the curriculum affects the mental representation of learners (expressed through concept maps). The teaching lasted 5 months - September to February (the period of time to go over the necessary thematic unit) and it included the subject of history in each of the above classes.

In the control groups we proceeded by explaining the new curriculum (thematic unit) through a linear structuring of the curriculum. The procedure was based on traditional teaching methods - spoken interpretation. We also worked with information and communication technologies during the lessons; we also searched for information together with learners and work with additional teaching texts.

In experimental groups we proceeded with nonlinear structuring of the curriculum when explaining the new topics from the history course (thematic unit). For this purpose we constructed a concept map for each lesson - and each new subject topic of the given thematic unit, through which the subject matter was passed on to the learners. All additional teaching materials chosen by us were processed by nonlinear structuring.

Through the *concept mapping test* we analyzed the mental representations of learners from a selected thematic unit - if the concept map is constructed by learners we talk about a graphic scheme of their knowledge. Within the frame of evaluation it was the so-called *Relational method of concept map evaluation*, specifically we analyzed the main parameter of operationalization: graphical visualization (the resulting effect and the quality of the created map). We mean the partial use of paper, the colour of the map, the clarity and a graphically represented overall view of the learner regarding the thematic unit, as well as the individual parts of the curriculum.

We assessed the quality of conceptual maps using the IRT theory. Specifically we used the *model of correlated latent features* (Rijmen&De Broeck, 2005). We further compared the obtained scores of conceptual maps with respect to the affiliation of learners to the groups (control and experimental group) with a nonparametric alternative of one-factor multivariate analysis of variance (Bathke, Harrar, 2008). To verify the assumption of local independence we used test statistics M_2 (Maydeu-Olivares & Joe, 2006) which has a chi-square distribution.

Table 1: Graphic Visualization of the Map - Evaluation Criteria

5	The concept map is shown clearly as a non-linear complex hierarchical structure which demonstrates a high degree of understanding of
---	--

	individual parts but also the entire thematic unit. The mental representation is marked in colour or possibly the essential parts are graphically highlighted.
4	The concept map is recorded as a nonlinear structure with several elements of the hierarchy. It shows a relatively high degree of understanding of the thematic unit. There are several coloured or graphically represented parts on the map. We consider the map to be clear.
3	The map is shown as a nonlinear structure in which errors are found. We cannot talk about integrity in looking at the thematic unit. The colouring of the map and the graphical representation of the individual elements is relatively small. The map is not clearly depicted.
2	The visual side of the concept map shows signs of misunderstanding of the thematic unit. In the organization of the map we find only a partial insight into the curriculum. Partial use of the paper is incorrectly organized, we consider the map confusing.
1	We do not consider the constructed structure of the map to be correct, it rather points to a misunderstanding of the thematic unit or its parts. The map is not clear, the colour is absent. We consider the resulting effect to be erroneous and incomplete.

As can be seen in the picture learners of the experimental group achieve better evaluation in the investigated parameter of operationalization.

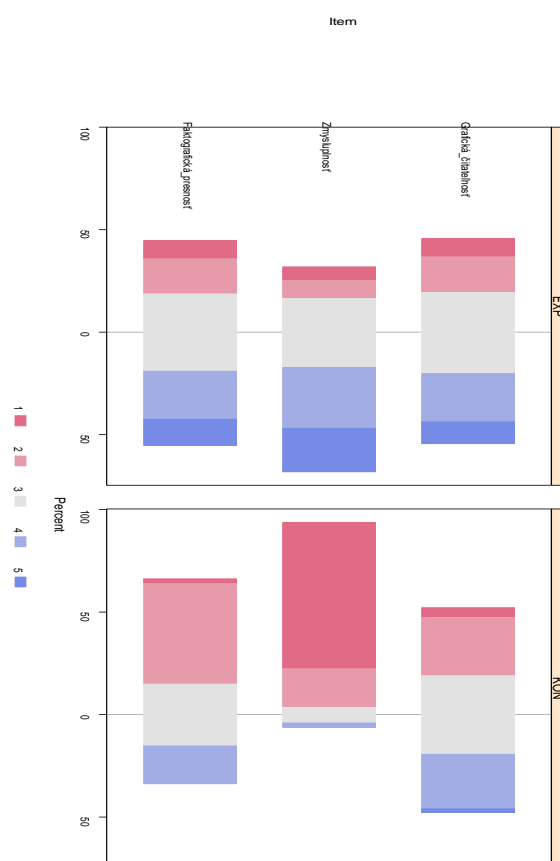


Figure 1: Success in Solving Items in the Control and Experimental Groups

In the majority of cases students learn the subject matter of history mechanically in order to memorize all the facts and

information but they do not learn meaningfully. We think that if learners' understanding of the content of the subject of history is to be improved it is necessary to assess and compare different teaching strategies. The range of our analysis lies in the comparison of the application of nonlinear and linear structuring of the curriculum to mental representations of learners recorded through conceptual mapping. The results of the experiment show that nonlinear structuring of the curriculum is a more appropriate strategy than linear structuring which presently is predominantly used during the teaching of history classes.

In the research survey we assumed that students who were presented with the study material by nonlinear structuring would achieve a significantly higher level statistically of graphical visualization of the map than the students who were presented with the study material by linear structuring. We state that the hypothesis has been confirmed. Within the hypothesis we focused on the final quality and effect of the concept map. We paid attention to the clarity of the recorded statements, the colour of the map, the partial use of the paper and the overall overview of the thematic unit by the student. From the results we conclude that the students of the experimental groups achieved better evaluations. An interesting finding lies in the awareness of the fact that students of the control and experimental groups were evaluated (in the analyzed item) at all levels on a scale of 1-5.

In the concept maps of the students of the control groups we recorded several cases of misunderstanding of the thematic unit, possibly a partial insight into the curriculum. Pointing out the above during the analysis of the concept maps of the control group students we found that they often placed the key concept on the edge of the paper so they were subsequently unable to develop the rest of the concepts in all directions. In many cases the information on the map was not partially correctly recorded therefore the concept maps of the pupils of the control groups cannot be considered clear. It can be seen in the Figure that the students of the experimental groups had the graphic visualization of the maps processed better. Their depictions were non-linearly complex, clear and showed a high degree of understanding of the given thematic unit. In addition we can speak about a holistic view of the thematic unit as all the essential parts of the curriculum have been graphically highlighted. It is interesting and it pointed to the fact that although we worked with students using mostly one type of concept map (although all types and methods of mapping were introduced in the instruction), the outputs of students in the experimental groups were diverse. We believe that the students themselves chose the method of mapping that suited them best and were able to record their mental representations in as much detail as possible.

6 Conclusion

Knowledge as such can only be considered as "dead capital" if one lacks the ability to use it adequately and effectively in everyday life. Unfortunately too much emphasis is placed on knowledge in our schools and insufficient attention is paid to how to make optimal use of it. Modern understanding of teaching is not about conveying finished knowledge to students. The current goal of the educational process is to educate a critical-thinking person with an open mind, naturally curious, flexible, looking for new information, looking for further perspectives and arguments for formulating final decisions. This is only achievable if the teacher is able to choose such teaching methods as directly stimulate the development of given skills.

We believe that it is necessary for conceptual mapping to be used in educational practice as a common learning strategy. The concept map represents an individual construction of knowledge with regard to the specific level of cognitive competence of individual students - it is about respecting the individual construction mechanisms of the brain, creating and modifying pre-concepts in specific subject matter.

Literature:

1. Abrami, P. C., Bernard, R. M., Borokhovski, E., Wade, A., Surkes, M. A., Tamim, R., Zhang, D. 2008. *Instructional interventions affecting critical thinking skills and dispositions: A stage 1 meta-analysis*. Review of Educational Research, vol. 78, n. 4, 1102–1134.
2. Bathke, A. C. – Harrar, S.W. 2008. "Nonparametric Methods in Multivariate Factorial Designs for Large Number of Factor Levels." In *Journal of Statistical Planning and Inference*, vol.138, no. 3, p. 588–610.
3. Ertmer, P. A. - Newby, T. J. 2013. Behaviorism, cognitivism, constructivism: comparing critical features from an instructional design perspective. In *Performance Improvement Quarterly*, [online]2013, vol. 26, no. 2, p. 43-71 [cit.2018- 03-02]. <http://onlinelibrary.wiley.com/doi/10.1002/piq.21143/full>
4. Halpern, D. F. 2014. *Trouth and Knowledge. An Introduction to Critical Thinking*. (5 ed.) New York, London: Taylor & Francis,
5. Heyman, G. D. 2008. *Children's critical thinking when learning from others*. Current Directions in Psychological Science, vol.17, n. 5, pp.344–347.
6. Kneedler, P. 1985. California Assessing Critical thinking. In A. Costa (Ed.), *Developing Minds: A Resource Book for Teaching Thinking*. Alexandria VA: Association for Supervision and Curriculum Development.
7. Maydeu-Olivares, A. - Joe, H. 2006. An Overview of Limited Information Goodness-of-Fit Testing an Multidimensional Contingency tables. In *New trends in Psychometrics*. 2006. p. 253–262.
8. Nesbit, J. C. - Adesope, O. O. 2006. Learning with concept and knowledge maps: A meta-analysis. In *Review of Educational Research*, 2006. vol.76, p.413 – 448.
9. Resnick, L. 1996. Situated Learning. In: De Corte, E., Weiner, F. E. (Eds.): *International Encyclopedia of Developmental and Instructional Psychology*. Oxford: Elsevier Science 1996, p. 341-347.
10. Rizopoulos, D. 2006. In: An R package for Latent Variable Modelling and Item Response Theory Analyses. In *Journal of Statistical Software*, vol. 17, no. 5, p. 1-25.

Primary Paper Section: A

Secondary Paper Section: AM

DETERMINING CARRYING AMOUNT OF INTANGIBLE ASSETSS USING MODIFIED INCOME-BASED AND ASSETS-BASED VALUATION METHOD DIFFERENCE

^aTOMÁŠ KRULICKÝ, ^bVERONIKA MACHOVÁ, ^cZUZANA ROWLAND

Institute of Technology and Business, School of Expertness and Valuation, Okružní 517/10, 37001 Ceske Budejovice, Czech Republic

email: ^akrulicky@mail.vstecb.cz, ^bmachova@mail.vstecb.cz, ^crowland@mail.vstecb.cz

Abstract: Company assets are classified into financial, tangible, and intangible. In particular, valuation of intangible assets is a demanding task for companies, although in certain cases, the obligation of assets valuation is imposed by law in the Czech Republic. Professional literature related to intangible assets valuation was analysed. The objective of the paper is to determine the carrying amount of intangible assetss through the application of modified method for its valuation with regard to the nature of the assets structure of the model association XYZ. The resulting value of intangible assets was determined based on the difference of assets-based and income-based valuation methods.

Keywords: intangible assetss, assets-based valuation method, income-based valuation method, DCF, carrying amount, association.

1 Introduction

In the field of expert activities, experts often encounter the issue of business valuation for various reasons. One of the common causes of the necessity of business valuation is the transformation of its legal form of business. In any case of the transformation of business legal form, the existing entity is required to carry out the valuation of its assets, which will enter into the newly established company with a different legal form, thus representing initial accounting positions of the individual assets items (Rowland et al., 2019; Mareček, Horák, and Hejda, 2019). In the Czech Republic, this obligation arises under the Accounting Act (Czech Republic, 1991).

This paper will be focused on the transformation of the legal form of business of a model association of two natural persons into a limited liability company (LLC), which has legal personality. The model association XYZ operates in the manufacturing industry and is focused on B2B (business to business) market, which can be characterized as business between two legal persons characterized by high volumes and lower supply heterogeneity compared to B2C (business to consumer) market where business relationships between trading companies and final customers through a wider offering portfolio. The valuation of the model association XYZ will be carried out as of 31 December 2017, when the activity of the model association XYZ will be terminated in its existing form and will start its operation in the market as a LLC.

In terms of the type of assets, the assets invested in the newly established company are classified as financial, tangible, and intangible.

The objective of the paper is to determine the carrying amount of intangible assets through the application of selected modified method for its valuation with regard to the nature of the assets structure of a model association XYZ.

2 Literature Research

In the case of establishing an association of two or more persons, on the basis of the Civil Code (Czech Republic, 2012), its members are obliged to determine the internal relations of the individual members of the association by a contractual agreement.

An association or any form of a business with or without a legal personality may feel the need for transformation for many reasons. One of the reasons may be business sustainability as a whole (Hašková et al., 2019). Loranzo (2013) dealt with the identification of companies' individual problems that may hinder

their development or are directly responsible when a company ceases to exist. On the basis of the identification of such problems, the author claims that in certain cases, companies have to change their internal and external structure in order to survive in the current market and to eliminate or at least reduce the problems they suffer from.

In the Czech Republic, the transformation of the association into a limited liability company imposes the obligation to determine the carrying amount of the input assets entering into the newly established limited liability company on the basis of the law (Czech Republic, 1991).

This obligation is not subject to a change of the existing business model the company uses for its operation, e.g. B2B or B2C market. According to Lilien (2016), these types of markets are not paid sufficient attention to in the form of scientific research. Both types of market have high potential for generating valuable academic contributions. It is very important for B2B companies to maintain their brand as it only may help potential customers know this complex and complicated market. Brand also helps customers in the decision-making process of purchasing goods and services (Davis, Golicic, and Marquardt, 2008). Sila (2013) also adds that both B2B and B2C markets have been influenced by digitalization and e-commerce for several years. In this case, these markets are designated B2B EC and B2C EC (electronic commerce).

Assets valuation is regulated by the Act on Valuation of Property and on the Amendment of some other Acts (Property Valuation Act) (Czech Republic, 1997). Pursuant to this Act, assets and services are valued at normal price, if not stipulated otherwise by this Act. For the purposes of this Act, normal price is the price that would be achieved by selling the same or similar property or providing the same or similar services in the ordinary course of business in the Czech Republic on the valuation date when considering all circumstances that could influence the price but excluding the effects of extraordinary circumstances on the market, personal situation of the seller or buyer, or pretium affectionis. This regulation also applies to the value of intangible assets. According to Svačina (2010), intangible assets include also copyrights, related work, software, and databases. Penman (2009) states that the company accounting is often criticized for the absence of items constituting its intangible assets in the balance sheet although intangible assets value can be determined based on the profit and loss account. Wyatt and Abernethy (2008) dealt with financial reporting of intangible investments. However, investments in the company intangible assets can also harm the reputation of the company, thus reducing its overall value. It is very important to understand the way the company intangible assets influences its value and find the best method for its valuation. According to Generally Accepted Accounting Principles (GAAP), it is required to enter the company intangible assets in its financial statements immediately after its creation (Ježková et al., 2020). Banker et al. (2019) points to the fact that intangible assets create a value for business in the future. Therefore, its immediate valuation is impossible and its value cannot be correctly estimated and thus enter in the company financial statements. According to Dischinger and Riedel (2011), company's intangible assets are an easy tool to transfer assets between subsidiaries due to lack of transparency of the internal valuation processes of such transfers. If intangible assets are transferred from the company, such a company is bound by a lower tax duty to the state. This is emphasized by the fact that the lower the corporate income tax rate, the higher the amount of its intangible assets is (Vochozka, Rowland, and Šuleř, 2019). According to Ittner (2008), in the field of business performance measuring, there are many discussions whether it is possible to measure the business economic performance using internal measuring of intangible assets. However, in many cases, the value of intangible assets is determined by the price movements of individual commodities the given company cannot influence

in any way (oil, etc.) (Hašková et al., 2020). Wang, Zhang, and Ouyang (2009) investigated whether advertising of a company can be included in its intangible assets. Therefore, they proposed a methodology for determining long-term advertising performance and suggested several methods of how individual companies can create their own equity through advertising. According to Marrocu, Paci, and Pontis (2012), competitive advantage of companies is dependent on intangible assets. Therefore, they point out the importance of policies aimed at the accumulation of intangible assets within a company. Axtle-Ortiz (2013) investigated the perception of corporate intangible assets on the basis of the geographical area in which a company operates. According to the author, the parameters such as geographical area, sector, and size of organization are statistically important factors influencing the characteristics of intangible assets.

The following part of the scientific literature analysis will deal with the individual methods of business intangible assets valuation and valuation of selected intangible assets of a business.

Pakosta, Činčalová, and Pátek (2017) dealt with the use of individual methods for determining business intangible assets value. A total of three methods of business intangible assets valuation were used. According to the authors, the best method of intangible assets valuation is the method of licence analogy. Ficco (2018) presents several models for the valuation of intangible assets. These models are based on the Ohlson model, which was published in 1995. These models can also be used for the stock valuation on the stock markets. Lu and Lin (2016) used data-mining for the identification of the factors influencing the creation of intangible assets and thus the share on the overall business value. Three methods were used: a decision tree, association rule method, and the method of genetic algorithms, where the decision tree method showed the highest explanatory value with the minimum error of first and second type. This was confirmed also by Tsai, Lu, and Yen (2012), who used a total of five methods, namely the principal component analysis method, stepwise regression, decision tree method, association rule method, and the method of genetic algorithms. In order to determine the most suitable method of intangible assets valuation, artificial multilayer neural networks (MLP) were used. Artificial neural networks were used to determine a comprehensive method for evaluation by Horák et al. (2020). According to Honková (2017), one of the methods for determining the value of business intangible assets showing significant statistical results is the method of discounted cash flows method (DCF). It is a difference between the DCF result and equity.

Since corporate intangible assets consisting of know-how have a major impact on the creation of a company business value, Hanafizadeh, Hosseinioun, and Khedmatgozar (2015) dealt with the valuation of corporate business models as a set containing all intangible asset of the company. Know-how is also referred to as "intellectual property", which a more popular designation. It consists of three parts: human capital, structural capital, and relational capital (Pastor et al., 2017). Sanchez-Segura et al. (2014) argue that the value of corporate intangible assets shall be determined based on its contribution to the achievement of business objectives, not on the basis of its volume.

3 Materials and Methods

For the purposes of this contribution, the model association XYZ, this is in the process of the transformation of its business form, provided all past accounting data representing its accounting status, along with the list of all tangible assets, which will be subsequently transferred into the newly established business entity (LLC), and which will represent its initial accounting status. The transformation of the legal form of the model association XYZ will not change its main business. Therefore, its inventories, low-value tangible assets, financial assets, receivables, payables will be values, and the value of the

intangible assets the association XYZ created over the period of its existence on the market will be determined.

First, there will be assessed the development of the Industrial Production Index in the Czech Republic on the basis of the data from the Czech Statistical Office (CSO). Next, the financial health of the model association XYZ will be assessed. Subsequently, all items representing the initial inputs in the newly established company will be valued using asset-based and income-based methods. Finally, the value of intangible components of business, which is one of the inputs into the newly established LLC, will be determined using the difference of the values of the model association XYZ determined by means of the valuation methods used.

Quarterly data on the Industrial Production Index will be obtained from the CSO. Based on the time series of the data obtained, a graph will be created (see Figure 2) that will show the gradual development of this index over time. On the basis of this development, it will be possible to determine more precisely the current trend of the development of the whole industry and then the overall financial health of the model association XYZ, whose intangible assets are the subject of the valuation.

After that, selected accounting indicators for the period of the last five years preceding the date of the valuation, that is, 2012–2017 will be analysed. Using this analysis and considering the development trend of the whole industry, the overall financial health of the given model association XYZ will be assessed. Within the financial analysis of the model association XYZ, the difference of revenue and expenditure items will be carried out. The input data for determining the overall financial health of the association XYZ are given in Table 1.

Table 1: Selected accounting indicators of the model association XYZ between 2012 – 2017 (v CZK)

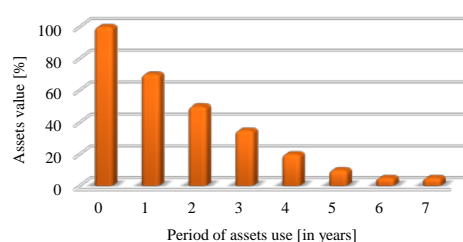
Accounting period	2012	2013	2014	2015	2016	2017
Revenues	3,782,922	3,827,332	4,651,051	5,800,337	7,288,916	3,782,922
Expenditure	3,336,552	3,475,784	4,329,146	5,506,796	6,081,950	3,336,552
Tangible assets	365,236	331,190	298,938	268,478	690,427	365,236
Cash in hand	0	0	0	0	0	0
Cash on current account	0	0	0	0	0	0
Inventories	645,283	631,098	694,339	663,785	799,882	645,283
Payables	464,267	589,582	576,919	766,297	541,166	464,267
Other assets	0	0	0	0	0	0
Liabilities including credits and loans	352,204	498,938	91,975	32,153	417,811	352,204
Reserves	0	0	0	0	0	0
Wages	878,058	629,813	634,811	701,431	928,500	878,058
Depreciation	0	34,044	32,252	30,460	141,323	0

Source: Authors.

After assessing the overall financial health of the model association XYZ, the value of its inventories, low-value tangible assets, financial assets, receivables and liabilities will be determined using the asset-based valuation method.

The inventories of the association XYZ will be valued on the basis of the purchasing cost specified in the list of inventories. For the valuation of low-value tangible assets, so-called amortisation scale is used, which expresses the decrease in the assets value in percentage depending on the length of its use (age). Amortisation scale of low-value tangible assets is shown in Figure 1.

Figure 1: Amortisation scale of low-value tangible assets (in %)



Source: Authors.

Using the amortisation scale (Figure 1), the valuation of low-value tangible asset, whose list is given in Table 2 along with the period of its use, its purchasing price and the price used for the valuation in CZK will be carried out.

Table 2: low-value tangible assets of the association XYZ

Item	Period of use [years]	Purchasing price [CZK]	Value for valuation [CZK]
Washing machine	6	11,444.46	572.22
Writing desk	6	4,516.30	225.81
Rack	6	5,559.97	277.99
Table	6	5,061.34	253.06
Electric saw	6	3,474.70	173.73
Built-in cupboard	6	8,860.65	443.03
Suite of furniture	6	18,181.73	909.08
Washing machine	6	8,877.31	443.86
Cutter	6	23,757.98	1,187.89
Rack systems	6	17,817.30	890.86
Manual cutter	6	31,578	1,578.90
Rack	6	11,357.25	567.86
Office furniture	6	10,905.04	545.25
PC Apple	6	26,993.87	1,349.69
Working table (2 pieces)	6	3,617.41	180.87
External HDD	6	4,241.28	212.06
flashdisk	6	782.31	39.11
Cordless screwdriver	6	4,173.85	208.69
Rack system	6	11,780	589
Cleaning machine (2 pieces)	6	6,370.58	318.52
Washing machine	6	14,433.35	721.66
Pallet carrier	6	14,630	731.50
Mobile stand	6	6,365	318.25
Working table	6	3,990	199.50
iPad 2	6	11,958.60	597.93
Mat cutter	6	4,083.10	204.15
GPS satnav	5	4,654.05	465.40
Chair	4	4,294.95	858.99
Textile cutting machine	4	28,177.95	5,635.59
Apple PC (2 pieces)	4	23,545.75	4,709.15
Camera (2 pieces)	4	8,644.05	1,728.81
Mobile phone (2 pieces)	2	10,198.25	5,099.12
Mat cutter	1	28,181.75	19,727.23
Notebook	1	7,450.85	5,215.59
Mobile phone	1	4,231.30	2,961.91
Apple PC	1	21,975.40	15,382.78
Printer	1	12,540	8,778

Source: Authors.

Table 2 shows that low-value tangible assets consist of 38 items, and its overall purchasing price was CZK 428,705.70 CZK. On the basis of its value determined using the amortisation scale, the overall value of CZK 84,303 will be included in the calculation of the intangible assets value.

On the basis of selected accounting indicators, the value of financial asset will not be determined for the model association XYZ, since according to these accounting indicators, the model association XYZ does not have any cash in hand or funds deposited in bank accounts.

Financial asset of the model association XYZ includes its receivables invoiced to customers. Therefore, any receivables of the model association XYZ created directly in relation with its activities will be further examined. Such receivables will then be divided in terms of their recoverability, i. e. receivables with a

maturity longer than one year (irrecoverable receivables) will be identified. If such receivables are identified, in overall valuation of this item, they will be deducted from other receivables with a maturity shorter than one year.

Furthermore, the liabilities of the association XYZ will be valued by the sum of all outstanding invoices as of the valuation date (31 December 2017). In order to determine the value of the association XYZ's intangible assets using the asset-based valuation method, it will be necessary to carry out the valuation of the vehicle fleet of the association, which consists of four motor vehicles. The valuation of the motor vehicles will be carried out using the software CabiCAT GT of the company Cebia s.r.o. Using this software, it is possible to determine the current market price of a vehicle as of the required valuation date.

The last item to be valued in order to determine the value of the model association XYZ's asset and to determine the value of its intangible asset is the production premises of the XYZ association. These production premises (property) will be valued using the comparative method on the basis of found similar properties for sale using advertising servers. The prices of similar properties found will be converted to the unit price on the basis of their floor area and subsequently, this unit price will be modified using five coefficients: coefficient of price source reduction (K_1), coefficient of the construction and technical condition of the property (K_2), coefficient of equipment (K_3), coefficient of location and size of land (K_4), and coefficient of floor area (K_5). By determining the median of these modified unit prices, it will be possible to identify the modified unit price of the property. This value will be multiplied by the floor area of the production premises used by the model association XYZ. The overall floor area of the property used for manufacturing and at the same time to meet the needs for dwelling of both members of the model association XYZ is 180 m², where 70% of this area is used as living space and 30% as production premises of the model association XYZ. Subsequently, the value of the land on which the property is situated, determined by the relevant normal prices in the locality, will be deducted from the overall price of the property. The basic price of a building plot in the locality where the given property is situated is CZK 1,253 CZK/m². The area of the land where the given property is situated is 1,300 m².

In the second part of this contribution, the model association XYZ will be valued using the selected income-based valuation method. The value of the association determined using the income-based method represents the sum of all tangible and intangible assets of the association. In order to determine the value of the association using the income-based method, the two-stage DCF model will be used. For this purpose, the financial plan of the association XYZ will be drawn for the period of 2018–2021.

The next step in the valuation of the model association XYZ using the selected income-based method will be the determination of the amount of alternative costs of equity r_e . For this purpose, the build-up model will be used. Formula 1 below represents the selected build-up model of the calculation.

$$r_e = r_f + r_{pod} + r_{finstab} + r_{la} \quad (1)$$

where: r_e cost of equity,
 r_f risk-free yield,
 r_{pod} risk premium for business risk,
 $r_{finstab}$ risk premium for financial stability,
 r_{la} risk premium for size of enterprise.

Yield value of the model association XYZ will be calculated as the sum of the values of the first and second stage of the DCF model. Formulas 2 and 3 show the individual steps in the calculation. Yield value in the 1st stage of the DCF method will be calculated as follows (see Formula 2):

$$H = \sum_{t=1}^T \frac{FCFE_t}{(1 + n_{VK(z)i})^t} \quad (2)$$

Where: H business value,
 $FCFE_t$ Free cash flow to equity in year t ,
 $N_{VK(z)i}$ cost of equity at specific debt in year i .

Subsequently, the second stage of the DCF method will be calculated using Formula 3.

$$PH = \frac{FCFE_{T+1}}{n_{VK(z)T+i} - g} * \frac{1}{(1 + n_{VK(z)i})^T} \quad (3)$$

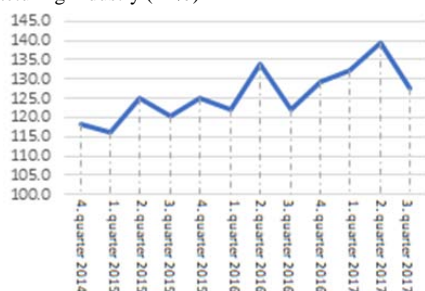
Where: T years in the first stage,
 g growth in the second stage.

The value of the association XYZ's intangible assets will be determined by calculating the difference between the asset-based and income-based valuation method.

4 Results

For the purposes of this contribution, it was necessary to assess the development of Industrial Production Index in the Czech Republic. Figure 2 shows its development for the manufacturing industry at constant prices (basic index, average in the year 2010 = 100) released by the CSO.

Figure 2: Development of Industrial Production Index for manufacturing industry (in %)



Source: CSU, 2020.

Figure 2 clearly shows that in mid-2017, the Industrial Production Index for the manufacturing industry achieved the highest values in the past three years, and compared to the base year 2010, there was an increase to 140%. However, in the period preceding the valuation date, the value of the index decreased to 127%.

Subsequently, according to the financial statements provided by the model association XYZ, its financial health was analysed by the difference of its income and expense items. The difference of the income and expense accounting items is shown in Table 3.

Table 3: Difference of income and expense accounting items of association XYZ (in CZK)

Accounting period	2012	2013	2014	2015	2016	2017
Incomes	3,782,922	3,827,332	4,651,051	5,800,337	7,288,916	3,782,922
Expenses	3,336,552	3,475,784	4,329,146	5,506,796	6,081,950	3,336,552
Difference	446,370	351,548	321,905	293,541	1,206,966	446,370

Source: Authors.

Table 3 clearly shows that the difference between the income and expense accounting items was almost constant in the years 2012–2015 and 2017. In 2016, there has been a significant fluctuation caused by the increase in investments in the equipment of new production premises where the model association XYZ operated.

Based on the comparing the results of the development of the Industrial Production Index and selected accounting indicators of the model association XYZ, it can be stated that the model association XYZ is a financially sound company without any significant hidden threats. The transformation of its legal form into a limited liability company is thus possible, and the future of the model association XYZ should not be affected by this transformation.

Next, the value of the model association XYZ's inventory was determined. On the basis of the list of inventory provided by the model association XYZ, its value was determined by the sum of its purchasing prices to CZK 992,471.65.

Another step consisted of reviewing the receivables of the model association XYZ. It was found out that the model association XYZ has receivables totalling CZK 358,273.78 as of the valuation date (31 December 2017). At the same time, one irrecoverable receivable was identified at the amount of CZK 13,468.43. After deducting this receivable, the total amount of the association XYZ's receivables was determined CZK 344,805.35 (358,273.78 CZK – 13,468.43 CZK = 344,805.35 CZK).

Another item valued using the asset-based valuation method is outstanding liabilities of the model association XYZ as of the valuation date (31 December 2017). Based on all invoices provided by the model association XYZ as a part of all data provided for the purposes of this contribution, the value of all liabilities as of the valuation date was determined at CZK 563,409.06.

Subsequently, the model association XYZ's vehicle fleet was valued in order to determine the value of its asset and thus the value of its intangible asset. The overall value of the vehicle fleet was determined at CZK 1,275,141 using the software CabiCAT GT as of the valuation date.

The last item to be valued using the asset-based valuation method is the property where the production premises in which the model association XYZ operates are situated. It is one property (a house) which is partly used as residential premises and partly as production premises of the model association XYZ. In order to determine the usual price of the given property, similar properties offered for sale via real estate advertising servers were found. Table 4 represents a list of similar properties for the purposes of comparison. The bid prices of such properties were converted into the unit price by their floor area. The last item to be valued by the property valuation method is

Table 4: List of properties found for comparison

Bid number	Bid price [CZK]	Build-up floor area in m ²	Unit price CZK/m ²
1	3,650,000	170	21,534
2	4,650,000	204	22,794
3	5,300,000	258	20,511
4	2,900,000	156	18,590

Source: Authors.

Subsequently, the unit prices of the properties found were modified using the aforementioned coefficients $K_1 - K_5$. Table 5 shows the unit price and the modified unit price of the similar properties found.

Table 5: Modified unit prices of the properties found for the purposes of comparison by the values of the coefficients $K_1 - K_5$

Bid number	K_1	K_2	K_3	K_4	K_5	Modified unit price CZK/m ²
1	0.95	1.00	0.95	1.05	0.98	19,998
2	0.95	1.00	1.00	0.92	1.05	20,918
3	1.00	1.00	0.90	1.07	1.08	21,332
4	1.00	1.05	0.95	1.12	0.95	19,730

Source: Authors.

On the basis of Table 5, there was determined the median of the modified unit prices for m². The median of modified unit prices is 20,458 CZK/m². Based on the floor area of the property partly

used as production premises of the model association XYZ, the value of the property was determined at CZK 3,682,440 (20,458 CZK/m² * 180 m² = 3,682,440 CZK). Subsequently, the value of land on which the given property is situated was deduced. The land value in the given locality was determined at CZK 1,628,900 CZK (1,253 CZK/m² * 1,300 m² = 1,628,900 CZK). After the deduction of the land value from the house value, the value of the property was determined at CZK 2,053,540 (3,682,440 CZK – 1,628,900 CZK = 2,053,540 CZK). Given that the activities of the association are operated only on the 30% of the overall area of the property valued, the resulting value of this property was determined at CZK 616,062 (30% out of 2,053,540 CZK = 616,062 CZK).

The overall asset value of the model association XYZ is given in Table 6.

Table 6: Overall asset value of model association XYZ

Item	Value
Inventories	992,471.65 CZK
Fixed tangible assets (vehicles + building)	1,891,203 CZK
Short-term tangible assets (low value)	84,303 CZK
Financial assets	344,805.35 CZK
Gross value	3,312,783 CZK
Liabilities(-)	563,409.06 CZK
Net value (after rounding)	2,749,374 CZK

Source: Authors.

The overall asset value of the association was CZK 2,749,374 (after rounding).

In order to value the model association XYZ using the selected income-based method, the financial plan of the association for the period of 2018–2021 was drawn. Table 7 shows the resulting free cash flows after tax from all aforementioned years included in the calculation in the 1st and 2nd stage of the used DCF method.

Table 7: Selected cash flows after tax according to the financial plan for the years 2018–2022

Year	Free cash flow after tax [CZK]
2018	177,630.81
2019	181,183.43
2020	184,807.01
2021	188,503.24

Source: Authors.

Subsequently, the value of the alternative costs of equity was determined using Formula 1. The values of the individual variables were obtained from the publicly available database of the Czech National Bank (CNB) and the Ministry of Industry and Trade of the Czech Republic (MIT CR). Table 8 shows the input values in the calculation of the alternative cost of equity using the selected build-up model.

Table 8: Items for calculating risk-free yield (r_e) according to CNB and MIT CR

	CZ NACE 55
Risk-free yield	1.77%
Risk premium for business risk	2.65%
Risk premium for financial stability	1.87%
Risk premium for size of enterprise	1.09%

Source: CNB (2020) and MIT CR (2017) (own interpretation).

After the substitution in Formula 1, the following equation was obtained:

$$r_e = 1.77\% + 2.65\% + 1.87\% + 1.09\%$$

$$r_e = 7.38\%$$

Alternative costs of equity were determined at 7.38% using the build-up model. Next, Formula 2 was used to determine the value of the model association XYZ using the income-based method DCF in the 1st stage. After substitution in Formula 2, the following equation was obtained:

$$H = \frac{177,630.81 \text{ CZK}}{(1 + 7.38\%)^1} + \frac{181,183.43 \text{ CZK}}{(1 + 7.38\%)^2} + \frac{184,807.01 \text{ CZK}}{(1 + 7.38\%)^3}$$

$$H = 165,422.62 \text{ CZK} + 168,731.08 \text{ CZK} + 172,105.62 \text{ CZK}$$

$$H = 506,259.31 \text{ CZK}$$

Using the income-based DCF method in the 1st stage, the value of the model association XYZ was determined at CZK 506,259.31 CZK. Subsequently, Formula 3 was used for determining the value of the model association XYZ in the 2nd stage of the calculation of the income-based DCF method. After substituting in Formula 2, the following equation was obtained:

$$PH = \frac{175,547.81 \text{ CZK}}{(7.38\% - 2\%)} * \frac{1}{(1 + 7.38\%)^3}$$

$$PH = 2,829,869.09 \text{ CZK}$$

Using the income-based DCF method, the value 2nd stage of the calculation was determined at CZK 2,829,869.09.

By summing the first and second stage of the calculation using the income-based DCF method, the resulting value of the model association XYZ was obtained.

$$506,259.31 \text{ CZK} + 2,829,869.09 \text{ CZK} \cong 3,336,128 \text{ CZK}$$

The value of the model association XYZ determined using two-stage income-based DCF method was CZK 3,336,128 after round.

Finally, the difference of the value determined using income-based and asset-based method for the valuation of the intangible asset of the model association XYZ was calculated.

$$\begin{aligned} & \text{income based value} - \text{asset value} \\ & = \text{intangible assets value} \end{aligned}$$

$$3,336,128 \text{ CZK} - 2,749,374 \text{ CZK} = 586,754 \text{ CZK}$$

Carrying amount of the model association XYZ's intangible assets that will, together with the tangible and financial asset, be transferred to the newly established LLC was determined at CZK 586,754 using the methodology described in the methodological part of this contribution.

5 Conclusions

The contribution determined the value of intangible assets by means of application of selected modified valuation method.

The proposed modifications of the methodology were applied on a specific model association XYZ, association of two natural persons that joined on the basis of a contract of association. The valuation was carried out first using the asset-based and then the income-based valuation method. The valued accounting items included inventories, low-value tangible assets, financial assets, receivables and liabilities, and, for the purposes of the financial calculation of the value of the model association XYZ's intangible assets, also its vehicle fleet and the property used for the operation of the association's activities (modified method). In the second part of the contribution, the value of the model association XYZ was determined using the income-based method (two-stage DCF method). Using DCF method, the subject of the valuation is valued as a whole, and thus its value determined using this method includes also the value of the model association's intangible asset.

By calculating the difference of model association value obtained using the aforementioned methodology (income-based and asset-based valuation method), the valuation of the model association XYZ was determined at CZK 586,754 (after rounding).

The objective of the paper was thus achieved. The results show that for correct determination of the carrying amount of corporate intangible assets, it is necessary to consider all its

tangible and financial assets, since all company assets are involved in the creation of its intangible asset's value.

There are many variants of the applied asset-based and income-based methods; therefore, further research might aim to specify the conditions that determine the most suitable combination of the individual variants in order to achieve the most precise value of business entity's intangible assets. However, the modification proposed by the authors significantly contributes to achieving more accurate results in terms of determining the carrying amount of intangible assets.

References

- Axtle-Ortiz, M. A.: Perceiving the value of intangible assets in context. *Journal of Business Research*. 2013, 66(3), 417-424.
- Banker, R. D., Huang, R., Natarajan, R., Zhao, S.: Market valuation of intangible assets: Evidence on SG&A expenditure. *Accounting Review*. 2019, 94(6), 61-90.
- Czech Republic: Zákon č. 89 ze dne 3. února 2012, občanský zákoník. In: Sbíрка zákonů České republiky. 2012, částka 33, pp. 1026-1365 [Act No. 89 of 3 February 2012, Civil Code. In Collection of Laws of the Czech Republic. 2012, issue 33, pp. 1026-1365]. ISSN 1211-1244.
- Czech Republic: Zákon č. 151 ze dne 17. června 1997, o oceňování majetku a změně některých zákonů (zákon o oceňování majetku). In Sbíрка zákonů České republiky. 1997, částka 54, pp. 2866-2895 [Act No. 151 of 17 June 1997 on Valuation of Property and Amendment of Certain Acts (Act on Valuation of Property). In Collection of Laws of the Czech Republic. 1997, issue 54, pp. 2866-2895]. ISBN 1211-1244.
- Czech Republic: Zákon č. 563 ze dne 12. prosince 1991, zákon o účetnictví. In: Sbíрка zákonů České republiky. 1991, částka 107, pp. 2802-2810 [Act No. 563 of 12 December 1991, Act on Accounting. In Collection of Laws of the Czech Republic. 1991, issue 107, pp. 2802-2810]. ISSN 1211-1244.
- Czech National Bank: Výnos desetiletých státních dluhopisů (dle maastrichtského kritéria) [Ten-year government bond yield (according to the Maastricht criterion)] [online] 2020. Available at: https://www.cnb.cz/cnb/STAT.ARADY_PKG.VYSTUP?p_period=1&p_sort=2&p_des=50&p_sestuid=375&p_uka=1&p_strid=AEBA&p_od=201704&p_do=201905&p_lang=CS&p_format=0&p_decsep=%2C
- Czech Statistical Office: Index průmyslové produkce k 9. 1. [Industrial production index: 9 January] [online] 2020. Available at: <https://www.czso.cz/csu/czso/index-prumyslove-produkce>
- Davis, D. F., Golicic, S. L., Marquardt, A. J.: Branding a B2B service: Does a brand differentiate a logistics service provider? *Industrial Marketing Management*. 2008, 37(2), 218-227.
- Dischinger, M., Riedel, N.: Corporate taxes and the location of intangible assets within multinational firms. *Journal of Public Economics*. 2011, 95(7-8), 691-707.
- Fico, C. R.: Adaptation of the Ohlson Model (1995) of the study of the valorative relevance of intangible assets and intellectual capital. *Actualidad Contable Faces*. 2018, 21(36), 59-95.
- Hanafizadeh, P., Hosseinioun, S. S., Khedmatgozar, H. R.: Financial valuation of a business model as intangible assets. *International Journal of E-Business Research*. 2015, 11(4), 17-31.
- Hašková, S., Machová, V., Hejda, J., Brabenec, T.: Earning value approach vs. asset-based approach valuation of a business. *Ad Alta: Journal of Interdisciplinary Research*. 2020, 10(1), 98-104.
- Hašková, S., Šuleř, P., Machová, V., Krulický, T.: Determining the price of the business share of a business in a group. *Ad Alta: Journal of Interdisciplinary Research*. 2019, 9(2), 60-70.
- Honkova, I.: Assessment of the DCF method in company valuation. *Hradec Economic Days 2017*. 2017, 7(1), 296-303. ISBN 978-80-7435-664-3.
- Horák, J., Krulický, T., Rowland, Z., Machová, V.: Creating a comprehensive method for the evaluation of a company. *Sustainability*. 2020, 12(21), 1-23.
- Ittner, C. D.: Does measuring intangibles for management purposes improve performance? A review of the evidence. *Accounting and Business Research*. 2008, 38(3), 261-272.
- Ježková, V., Rowland, Z., Machová, V., Hejda, J.: The intrinsic value of an enterprise determined by means of the FCFE tool. *Sustainability*. 2020, 12(21), 1-13.
- Lilien, G. L.: The B2B knowledge gap. *International Journal of Research in Marketing*. 2016, 33(3), 543-556.
- Loranzo, R.: Are companies planning their organisational changes for corporate sustainability? An analysis of three case studies on resistance to change and their strategies to overcome it. *Corporate Social Responsibility and Environmental Management*. 2013, 20(5), 275-295.
- Lu, Y. H., Lin, Y. CH.: Using hybrid classifiers to conduct intangible assets evaluation. *International Journal of Applied Metaheuristic Computing*. 2016, 7(1), 19-37.
- Mareček, J., Horák, J., Hejda, J.: Draft method for valuation of small long-term fixed assets. *Ad Alta: Journal of Interdisciplinary Research*. 2019, 9(2), 187-192.
- Marrocu, E., Paci, R., Pontis, M.: Intangible capital and firms' productivity. *Industrial and Corporate Change*. 2012, 21(2), 377-402.
- Ministry of Industry and Trade: Finanční analýza podnikatelské sféry za rok 2017, tabulky k finanční analýze [Financial analysis of the business sphere for 2017, tables for financial analysis] [online] 2017. Available at: <https://www.mpo.cz/assetss/cz/rozcestnik/analyticke-materialy-a-statistiky/analyticke-materialy/2018/6/Tabulky2017.xls>
- Rowland, Z., Machová, V., Horák, J., Hejda, J.: Determining the market value of the enterprise using the modified method of capitalized net incomes and Metfessel allocation of input data. *Ad Alta: Journal of Interdisciplinary Research*. 2019, 9(2), 305-310.
- Sanchez-Segura, M. I., Ruiz-Robles, A., Medina-Dominiguez, F., Seco, A. A.: Smart intangible knowledge assets valuation. *Proceedings of the 15th European Conference on knowledge management (EKCM 2014)*. 2014, 862-867. ISSN 2048-8963.
- Sila, I.: Factors affecting the adoption of B2B e-commerce technologies. *Electronic Commerce Research*. 2013, 13(2), 199-236.
- Svačina, P.: *Oceňování nehmotných aktiv [Valuation of intangible assets]*. Prague: Ekopress, s.r.o., 2010. ISBN 978-80-86929-62-0.
- Tsai, C. F., Lu, Y. H., Yen, D. C.: Determinants of intangible assets value: The data mining approach. *Knowledge-Based Systems*. 2012, 31, 67-77.
- Pakosta, J., Činčalová, S., Pátek, J.: Valuation of intangible assets. *Hradec Economic Days 2017*. 2017, 7(1), 662-673. ISBN 978-80-7435-664-3.
- Pastor, D., Glova, J., Liptak, F., Kovac, V.: Intangibles and method for their valuation in financial terms: Literature review. *Intangible Capital*. 2017, 13(2), 387-410.
- Penman, S. H.: Accounting for intangible assets: There is also an income statement. *Abacus-A Journal of Accounting Finance and Business Studies*. 2009, 45(3), 358-371.
- Vochozka, M., Rowland, Z., Šuleř, P.: The specifics of valuating a business with a limited lifespan. *Ad Alta: Journal of Interdisciplinary Research*. 2019, 9(2), 339-345.
- Wang, F., Zhang, P. P., Ouyang, M.: Does advertising create sustained firm value? The capitalization of brand intangible. *Journal of the Academy of Marketing Science*. 2009, 37(2), 130-143.
- Wyatt, A., Abernethy, M.: Accounting for intangible investments. *Australian Accounting Review*. 2008, 18(2), 95-107.

Primary Paper Section: A

Secondary Paper Section: AH

DEVELOPMENT OF ECONOMIC VALUE ADDED (EVA) OF LEASING COMPANIES ACTIVE IN THE CZECH REPUBLIC IN THE YEARS 2005-2019

^aJIŘÍ KUČERA, ^bPETR ŠULEŘ

^aUniversity of Zilina, The Faculty of Operation and Economics of Transport and Communications, Department of Economics, Univerzitná 8215/1, 01026 Zilina, Slovakia

^bInstitute of Technology and Business, School of Expertness and Valuation, Okružní 517/10, 37001 Ceske Budejovice, Czech Republic
email: ^akuceraj@mail.vstecb.cz, ^bpetr.suler@cez.cz

Abstract: In times of economic crisis, leasing companies can be an alternative way to obtain a loan. However, their value is constantly changing during economic cyclical events. However, this value of the company is important from the point of view of their owners as well as investors and creditors. Likewise, the number of currently active leasing companies on the market is affected by economic cyclical events. It was found that with the upcoming economic situation, it is very likely that the value of leasing companies in the Czech Republic will have a similar development trend in the coming years as during the last global economic crisis.

Keywords: leasing company, economic crisis, company value, EVA, market occupancy

1 Introduction

All companies are established with the goal of a future profit and rise in value. The value of these companies and the profit they are able to generate depends on many aspects. These are both the consequences resulting from decisions made by their owners and possibly management, but also the external influences of the market and, finally, the overall economy of the country or the world. Kasych and Vochozka also draw attention to this fact [1].

Leasing companies providing motor vehicle leasing can be considered very specific in comparison to other types of businesses. These are companies that are strongly influenced by developments in the banking sector, but also in the automotive industry. Another influential aspect could also be considered the fuel market. Leasing companies provide motor vehicles to consumers under specific pre-agreed conditions. Until the expiry of these conditions, however, they are still the owners of the motor vehicle in question and the lessee is liable for their obligations in most cases by guaranteeing the motor vehicle in question, which they operate through leasing companies, for commercial or private purposes.

Leasing companies therefore provide a specific type of non-bank financial services. It is therefore very important for owners and creditors, as in any other sector, to know the economic performance of these companies quickly and with the greatest possible accuracy. Strong and economically efficient companies are also able to respond quickly to sudden changes in the local, state and global economy. Specific economic evaluation indicators can be used to continuously measure the economic performance of leasing companies. One of the economic indicators that can be applied repeatedly to individual leasing companies or also to this sector as a whole is the Economic Value Added (EVA) indicator.

The EVA indicator provides owners and existing and potential investors with information on the economic performance of a particular leasing company to which this indicator is currently applied. From a broader view of the whole issue of economic performance, this indicator can also be applied to the entire group of leasing companies and thus obtain information that can then be compared within the sector, the state and worldwide.

In times of economic crises, which recur cyclically, the numbers of companies active in a given sector may also change. With the decline in the number of active companies, we are referring to a market cleanse, because only strong and stable companies are able to withstand these extreme economic shocks. Thus, for economically weaker companies, a decrease in the values of the EVA indicator can be expected in this period. In some cases, the

value of the EVA indicator may be negative. If the value of the EVA indicator is negative in the long run, it is economically best to shut down the company's operations and thus prevent further financial losses caused by the loss of the company's value.

The aim of this paper is to analyse the development of the EVA Entity and EVA Equity indicators of leasing companies operating in the Czech Republic in the years 2005-2019. To achieve the set goal of the paper, three research questions were formulated:

1. Did leasing companies operating in the Czech Republic generate positive economic value for their owners in the years 2005-2019?
2. Did leasing companies operating in the Czech Republic in the years 2005-2019 generate a positive economic value for existing and potential investors and creditors?
3. How did the global economic crisis, which began in 2008, affect the development of the economic value of leasing companies?

The second goal of the paper is to analyse the number of leasing companies active in the Czech Republic for the period 2005-2019 with a focus on fluctuations in their numbers on the market during the economic crisis.

2 Literature Review

In a time of ever-increasing competition and changing economic conditions, the individual economic sectors of each country must adapt to economic development. By measuring the effectiveness of leasing companies, it is possible to determine the performance of individual entities and the entire economic sector, and based on the results obtained, look for ways to improve it. An economic sector with economically efficient companies is generally better able to cope with negative economic fluctuations and thus also contributes to stability in related economic sectors that are dependent on this economic sector or overlap with this economic sector in several places.

In a time of ever-increasing competition and changing economic conditions, the individual economic sectors of each country must adapt to economic development. By measuring the effectiveness of leasing companies, it is possible to determine the performance of individual entities and the entire economic sector, and based on the results obtained, look for ways to improve it. An economic sector with economically efficient companies is generally better able to cope with negative economic fluctuations and thus also contributes to stability in related economic sectors that are dependent on this economic sector or overlap with this economic sector in several places.

Andrikopoulos and Markellos [2] have therefore developed a dynamic interaction model between fluctuations in the leasing sector and motor vehicle sales. Based on the analysis of data from 2002 to 2011 and the application of the created model, it was concluded that changes in motor vehicle prices have a large effect on the development of market leasing prices. They are also inclined to believe that leasing valuations could also be performed using this model. According to Dasgupt, Siddarth and Silva-Risso [3], from the consumer's point of view, a lease can be seen as a way of obtaining otherwise inaccessible expensive motor vehicles. However, they also point out that consumers of leasing services are often very short-sighted and therefore prefer small monthly payments and do not realize that the total price of a motor vehicle purchased in this way will be much higher than if they bought the motor vehicle with cash up front. At the end of the last century, Mannering, Winston and Starkey [4] conducted research on the share of motor vehicles purchased by households in the US between 1984 and 1988. During this time, the share of motor vehicles purchased by households in the form of a lease in the US increased from 3% to 30% of all motor vehicles operated

in the United States. From this it follows that already at the end of the last century, the leasing sector was gaining importance. Ionascu and Ionascu [5] see motor vehicles used through leasing as one of many possible tools for the sustainability of the state's economy. Companies whose fleet consists of motor vehicles operated on the basis of leasing contracts can also be considered in the eyes of the public as "green companies". This designation is even more important for companies that are listed and traded on the stock exchange.

With a large number of motor vehicles used through leasing, there is also an increased risk that a certain percentage of lessees will not be able to meet their obligations under the leasing contract, and therefore in some cases the leasing company will impose sanctions in the form of motor vehicle withdrawal. For the subsequent financial settlement, it is then necessary to determine the residual value of the motor vehicle in question. Different countries have different conditions for providing leasing for motor vehicles. Tot [6] therefore examined these different models of contractual terms in Germany, Austria and Croatia. All applied contractual models reflect the risk of the residual value of the motor vehicle after the expiry of the leasing contract. Under these leases, the residual value of the motor vehicle is calculated on the basis of the number of kilometres travelled for the duration of the contract. Usually, the individual limits and the corresponding value that a motor vehicle usually has are set. However, this method of determining the residual value of a motor vehicle is not applicable to motor vehicles with an excessive mileage. Cerquitelli et al. [7] developed a model for determining the residual value of lorries and commercial motor vehicles on the basis of data collected through Industry 4.0, which is very rich in these sets of data, especially for this type of motor vehicles. In some leasing contracts provided for trucks and commercial motor vehicles, it is already stipulated at the time of their signing that this motor vehicle will be repurchased by the leasing company upon expiry of the leasing contract.

With the rise of electromobility, leasing companies began to provide leasing loans for batteries for electric vehicles. However, the question is whether these services will make electric cars more accessible to the general public. When leasing a battery to an electric car, parameters such as the price of the battery, the price of electricity, the power of the battery, the weight of the electric car, the price of fuel and the discount rate are included in the calculation of the amount of periodic payments. According to the analysis, leasing companies providing leasing for batteries for personal electric cars are inefficient and generate only small profits. The performance of leasing companies would increase if they provided loans for batteries for heavier electric cars [8]. However, in response, Zhang and Rao [9] identify the manufacturer of electric car batteries operated under leasing contracts as companies with a high competitiveness compared to oil companies, which are the least competitive in this respect. Also, from the lessee's point of view, it is not recommended to negotiate a lease on a battery for a high-weight electric car.

Jiao, Yan and Pang [10] examined the specifics of leasing contracts for the rental of shipping containers. In this area of leasing contracts, the amount of leasing value depends on the prices of consumer products that are transported by specific containers. Usually, with a larger number of leased containers, the amount of the total lease is determined on the basis of the average price of their contents, their number and the period for which the transport container thus obtained will be used. However, from the point of view of leasing companies, these types of contracts are very specific and usually are not dealt with by leasing companies.

In economic sectors, which have a high heterogeneity of their consumers, Li and Xu [11] have discovered the possibility of always offering their consumers the best possible products and services through leasing loans. In the event that new economic technology is modernized or developed in a given economic sector, companies operating in this economic sector may remove their obsolete assets by repurchasing them from a leasing

company and acquire new modernized equipment by means of a new leasing contract.

During an economic crisis, liquidity in all markets will generally decrease. In some markets, this decline will be more pronounced and in some less so. In the area of non-bank consumer loans, however, liquidity is declining very noticeably. The collapse in the securities market causes that leasing companies do not have enough capital to meet the demand for non-bank loans of all applicants. The decline in liquidity in the automotive industry is also closely linked to this. By contrast, banking institutions usually broaden their loan offers in times of economic crisis [12]. In times of economic crisis, there are more and more cases where other companies enter into leasing agreements with leasing companies to acquire current and highly liquid assets. These companies thus supplement or completely replace bank loans for their operations during this period [13].

It is also very interesting to account for leasing liabilities in companies that use leasing loans. Svoboda dealt with this topic in the Czech Republic. According to him, a leasing loan may be incorrectly recorded in the company's accounts on the basis of a subjective perception of this source of liabilities [14].

He also analysed small and medium-sized enterprises and their views on the accounting for this type of liability. According to small and medium-sized enterprises operating in the Czech Republic and using leasing loans, the asset and the liability should be reported in one aggregate amount and the decrease in the liability and amortization of the asset should be assessed separately. The best solution for changes in estimates is to use the historical incremental interest rate [15].

The EVA indicator began to become known to the economic community at the moment when individual market participants began to focus on the future value of their business activities. The EVA indicator can be used to estimate a specific type of economic profit, which states that in order to achieve real profits, it is necessary not only for the company to earn sufficient profit to cover the company's operating costs, but also to cover capital costs [16]. The EVA indicator has also found its application in the government sector of some countries. It has also replaced the return on equity (ROE), especially in the private sector [17]. Gupta and Sikarwar [18] found by applying regression models that the EVA indicator has great potential to supplement information on the financial health of the business unit even after the application of traditional economic indicators. This increase in information is also a very valuable source of information for investors and shareholders. The equation of the EVA valuation model took its form under the assumption of a constant required return and a constant return on equity. According to Behr [19], however, the required rate of return never remains constant. However, it was confirmed that the EVA valuation model can be implemented even when the required yield changes. Gralucci, Iazzolino, Laise and Migliano [20] examined the link between the Value Added Intellectual Coefficient (VAIC) and EVA. The results of the correlation analysis suggest that EVA and VAIC have no significant relationships. According to other tests performed, it was found that EVA is a valuable indicator for company managers. It was recommended to use more multicriteria methods to correctly determine a company's performance.

The EVA indicator itself has two basic forms (versions), while the EVA indicator in the EVA entity variant serves as an informational piece of data for business owners [21]. For the conditions of the Czech Republic, Neumaier and Neumaierová [22] compiled the EVA indicator in the variant of EVA equity, which serves as an informational piece of data on a company's ability to create value for creditors and existing and potential investors.

Machová and Vrbka [23] also used, for example, the EVA indicator as the main evaluation parameter of company value to determine the value generators of companies operating in one of the sectors that are key to the economy and production of most

countries around the world. Vochozka and Machová [24] also used the EVA indicator to determine the value of individual transport companies and subsequently also to identify their value generators with a possible prediction of future developments.

In the Czech Republic, quarterly surveys of selected indicators are carried out, the evaluation of which can be used to determine the value of a particular company and thus compare its standing in comparison with the entire economic sector in which it operates. One of these indicators, which is commonly used, is the EVA indicator [25].

Based on the knowledge gathered so far about the EVA indicator, it is clear that the use of this indicator is the right step to achieve the set goals of the paper.

3 Materials and Methods

The input data for the analysis will be taken from Bisnode's Magnusweb database. These will be the financial statements of leasing companies operating in the Czech Republic. According to the classification of economic activities CZ NACE, this is section "N" (administrative and support service activities). Data from subgroup 771100 (rental and leasing of cars and other light motor vehicles, except motorcycles) will be used. The data will be from the period 2005-2019. This time frame was chosen taking into account the presence of a major global economic crisis and the subsequent developments after its end. Due to this, a fluctuation in the number of active leasing companies can be expected. The data file will therefore contain in individual years the data of leasing companies which have been in liquidation for any reason and which have ceased to exist in this year or at the end thereof. The database also contains different levels of detail of available information from the financial statements of specific leasing companies, and therefore the highest levels of detail of financial statements for each leasing company contained in the database will always be used for individual calculations.

First, the data will be broken down by year. To refine the calculation, companies whose return on equity (ROE) will be outside the range of <-100%; 100%> will be removed. Companies with indebtedness outside the range of <0 %; 200%> will also be removed. Furthermore, the data of companies that have meaningless negative values in their economic indicators will be deleted. This is data on the amount of bank loans and advances, total assets, interest expense, inventories and liabilities. The data will also be adjusted for information that is not relevant to the calculation of the EVA Equity and EVA Entity indicators and the data needed to calculate the individual steps. Therefore, only relevant data will remain. Specifically, the remaining data will be the year of the financial statements, the economic result for the accounting period, equity, income tax for ordinary and extraordinary activities, interest expense and borrowed capital. Furthermore, companies for which EVA Equity and EVA Entity indicators would not be calculated due to missing data in these input datasets will be removed from the source data.

Furthermore, it will be necessary to supplement the data obtained from the Magnusweb database with other publicly available data. This will be risk-free income, which will be taken from the information portal of the Czech National Bank (CNB). Data on the yield rate of ten-year government bonds will be worked with specifically. The yield values of ten-year government bonds for the years 2005–2019 are shown in Table 1.

Table 1: Yield on ten-year government bonds from 2005–2019 according to the Maastricht criterion in %

Year	Risk-free yield [%]
2005	3.61
2006	3.77
2007	4.68
2008	4.3
2009	3.98
2010	3.89

2011	3.7
2012	1.92
2013	2.2
2014	0.67
2015	0.49
2016	0.53
2017	1.5
2018	2.01
2019	1.51

Source: Czech National Bank [26] (Author's interpretation).

Furthermore, the data will be supplemented by the values of the risk premium for the examined years. This data will come from the website [27]. The values of the risk premium from 2005–2019 for the Czech Republic in % are given in Table 2.

Table 2: Risk premiums for 2012–2015 in %

Year	Risk premium [%]
2005	1.2
2006	0.9
2007	1.05
2008	1.05
2009	2.1
2010	1.35
2011	1.28
2012	1.28
2013	1.28
2014	1.05
2015	1.05
2016	1.11
2017	1
2018	0.81
2019	0.98

Source: <http://pages.stern.nyu.edu/~adamodar/> [27] (Author's interpretation).

Last but not least, for the final completion of the data file, data on the size of the β unlevered indicator will also be taken from the same source. Specifically, these will be sets of data from the financial services sector (excluding banking and insurance) for the years 2012-2019. The values of the indicator β unlevered are given in Table 3.

Table 3: β unlevered values for the years 2012–2019 in %

Year	β unlevered [%]
2012	0.11
2013	0.14
2014	0.26
2015	0.12
2016	0.13
2017	0.11
2018	0.18
2019	0.16

Source: <http://pages.stern.nyu.edu/~adamodar/> [27] (Author's interpretation).

The values of the parameter β unlevered for the years 2005-2011 will subsequently be derived on the basis of the values of the indicator β unlevered determined [27] for the USA due to the absence of this data. The determination of β unlevered values will be carried out for each of the years in the period of 2005-2011 according to the following formula (formula no. 1):

$$\beta \text{ unlevered } EU_{\text{year } x} = \frac{\beta \text{ unlevered } EU_{\text{year } x-1} * \beta \text{ unlevered } USA_{\text{year } x}}{\beta \text{ unlevered } USA_{\text{year } x-1}} \quad (1)$$

Where:

$\beta \text{ unlevered } EU_{\text{year } x}$ is the value of β unlevered for the EU in the specific year,
 $\beta \text{ unlevered } EU_{\text{year } x-1}$ is the value of β unlevered for the EU in the previous year,

$\beta_{unlevered\ USA_{year\ X}}$ is the value of $\beta_{unlevered}$ for the USA in the specific year, $\beta_{unlevered\ USA_{year\ X-1}}$ is the value of $\beta_{unlevered}$ for the USA in the previous year.

The calculation according to formula 1 will therefore take place backwards from 2011 to 2005.

After determining the values of the parameter $\beta_{unlevered}$ for the years 2005-2011, calculations of the EVA Equity and EVA Entity indicators for the years 2005-2019 will be performed. The calculation of the EVA Equity indicator will be performed using formula No. 2 [22].

$$EVA_{Equity} = (ROE - r_e) * E \quad (2)$$

Where: ROE is Return on Equity,
 r_e is the cost of equity,
 E is Equity.

Subsequently, the EVA Entity indicator will be calculated using formula No. 3 [28].

$$EVA_{Entity} = EBIT * (1 - t) - WACC * C \quad (3)$$

Where: $EBIT$ is Earnings Before Interest and Tax,
 t is the corporate income tax rate,
 $WACC$ is the Weighted Average Cost of Capital,
 C is capital that is tied up in assets used for the operating activities of the company.

As a representative leasing company operating on the Czech market, the average leasing company operating on the Czech market will be determined using the arithmetic average of the values of the EVA Equity and EVA Entity indicators in each of the years of the period 2005-2019.

The results will be presented in graphical form in a line graph to show the ongoing development of the calculated values. The obtained results will then be analysed and described in terms of the development of these indicators, especially before, during and after the economic crisis.

Finally, leasing companies will be analysed in terms of their numbers in which they were active in the market in the Czech Republic. Again, these numbers will be analysed in terms of the development of these indicators, especially before, during and after the economic crisis.

4 Results

After adjusting the input data and deleting irrelevant data, a different number of leasing companies active in the Czech Republic entered the calculation each year. Table 4 shows the specific numbers of active leasing companies entering the calculation of the EVA Equity and EVA Entity indicators.

Table 4: Numbers of actively operating leasing companies entering the calculation of EVA Equity and EVA Entity indicators in 2005-2015

Year	Number of leasing companies
2005	74
2006	98
2007	121
2008	135
2009	150
2010	160
2011	161
2012	172
2013	188
2014	215
2015	186
2016	138
2017	128

2018	122
2019	66

Source: Author.

Table 4 shows that the number of active leasing companies entering the calculation increased every year. In the last year, however, fewer companies were suitable for the calculation, which was due to the incompleteness of the data needed to calculate both indicators.

Subsequently, it was necessary to calculate the values of the parameter $\beta_{unlevered}$ for the years 2005-2011 according to the formula given in the methodological part of this paper. The calculated values of the parameter $\beta_{unlevered}$ for the years 2005-2011 are given in Table 5.

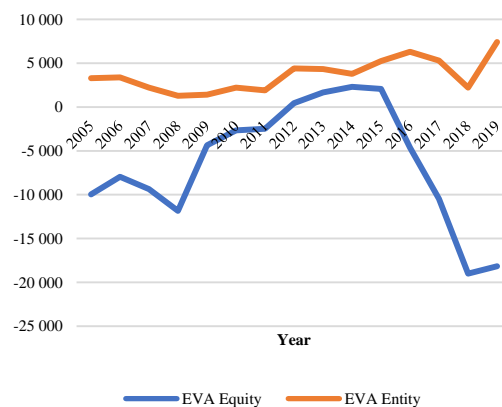
Table 5: Calculated values of the parameter $\beta_{unlevered}$ for the years 2005-2011

Year	$\beta_{unlevered}$ [%]
2005	0.135581
2006	0.086977
2007	0.11
2008	0.112558
2009	0.061395
2010	0.099767
2011	0.11

Source: Author.

Finally, the parameters of EVA Equity and EVA Entity of leasing companies active in the Czech Republic were calculated and the average leasing company operating on the Czech market in the years 2005-2019 was determined by the subsequent calculation of the arithmetic average of both values. A graphical representation of the achieved results is shown in Graph No. 1.

Graph 1: EVA Equity and EVA Entity of an average leasing company active in the Czech Republic in 2005-2019



Source: Author.

According to Graph No. 1, it is evident that the values of the EVA Equity and EVA Entity parameters of the average leasing company active on the Czech market in 2005-2019 changed significantly, especially during the economic crisis that hit the Czech market in 2008-2014, rather than immediately before and after the crisis. Since 2005, the value of the EVA Equity parameter has remained below zero, with the largest decrease in 2008, when it reached the value of -11,843.7. At the same time, the lowest value of the EVA Entity parameter (1,290.892) was also recorded in the same year, although this parameter's value was positive throughout the observed period. Subsequently, there is a noticeable sharp increase in the EVA Equity parameter in 2009 to -4,366.29. Since 2012, the value of the EVA Equity parameter has been positive until 2015. From 2015, however, the average leasing company recorded a large decline in the value of EVA Equity to -19,001 until 2018, and then began to increase gradually again. EVA Entity in 2018 also recorded a more

significant decrease compared to 2017, but it was still in positive values. In 2019, it increased again.

Finally, an analysis of the number of leasing companies active in the Czech Republic in the years 2005-2019 was performed. Based on all obtained source data before adjustment for the calculation of EVA Equity and EVA Entity parameters, data on the following numbers of leasing companies active in the Czech Republic were obtained. Table 6 shows the achieved results.

Table 6: Number of leasing companies active in the Czech Republic in the years 2005-2019

Year	Total number of leasing companies
2005	91
2006	111
2007	132
2008	157
2009	164
2010	176
2011	184
2012	194
2013	217
2014	245
2015	219
2016	247
2017	245
2018	222
2019	119

Source: Author.

Based on the analysis of the number of leasing companies active in the Czech Republic in the years 2005-2019, it is evident that their number has been constantly increasing. However, during the economic crisis, the surpluses of the number of leasing companies on the Czech market decreased slightly compared to previous years. On the contrary, the largest increase in leasing companies in the Czech Republic was recorded in 2014, when 28 new leasing companies were added. In 2015, however, a decrease in the number of these companies was recorded again, despite the fact that the economic crisis at that time had completely subsided. Subsequently, however, between 2018 and 2019, a large decrease in leasing companies operating on the Czech market was recorded, up to half of the number of companies operating on the Czech market in 2018.

5 Discussion

Based on the achieved results, it is now necessary to answer all the research questions asked.

The first research question asked was whether leasing companies operating in the Czech Republic generated positive economic value for their owners in the years 2005-2019. Leasing companies operating on the market of the Czech Republic in the years 2005-2019 did generate value for their owners. However, during the economic crisis, their performance fell by about half compared to the performance they showed before and after the crisis. Overall, however, the value generated by leasing companies increased significantly after the crisis, as shown in Graph No. 1. An interesting development of the value generated by leasing companies operating in the Czech market was also recorded between 2018 and 2019, when the fastest increase for the entire period occurred.

The second research question asked was whether leasing companies operating in the Czech Republic in the years 2005-2019 generated a positive economic value for existing and potential investors and creditors. However, the economic sector in which leasing companies operate has become interesting for investors and creditors only from the year 2012. Until then, even before the onset of the economic crisis, leasing companies operating on the Czech market had a negative economic value. However, since 2016, leasing companies operating on the Czech

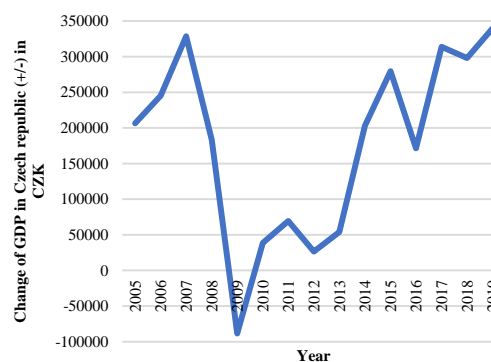
market have again shown significantly negative values of the EVA Equity indicator and thus become unattractive for investors again. According to another analysis, this result is reflected in a decrease in the number of leasing companies, due to a decrease in the volume of financial resources obtained by leasing companies from investors and creditors. This is a direct example of a market cleanse.

The third research question asked was how the global economic crisis, which began in 2008, affected the development of the economic value of leasing companies. According to the achieved results, it can be confirmed that the economic crisis, which began in 2008, had a great impact on the value creation of leasing companies active in the Czech Republic. However, after the end of this economic crisis, leasing companies experienced a big turnaround and from 2012 they began to reach positive values again for investors and creditors. The value created for owners of leasing companies has been even higher since 2014 than before the beginning of the economic crisis, reaching its highest values in 2019. Likewise, leasing companies began to create economic value for investors and creditors. The largest increase in the value of invested capital by investors and creditors was recorded in 2014. Subsequently, this growth was slightly slowed down, but was still positive. However, since 2016 there has been a large decline.

However, it is interesting that in terms of the number of leasing companies that operated on the Czech market during the economic crisis, the number of operating leasing companies was constantly increasing. However, two years after the end of the economic crisis, there was a decline in the number of leasing companies.

Also, in terms of the GDP of the Czech Republic, it is clear that the economic crisis has also affected other economic sectors. Graph No. 2 shows the development of the GDP of the Czech Republic in the years 2005-2019.

Graph 2: Year-on-year changes in the GDP of the Czech Republic in 2005-2019



Source: CSO [29] (Author's interpretation).

According to Graph No. 2, it is evident that in 2008, when the EVA Equity indicator decreased during the economic crisis, it was also the year when the largest year-on-year decline in the Czech Republic's GDP occurred (a decrease of CZK 88,540).

6 Conclusions

The paper set forth two goals. The first of the set goals was to perform an analysis of the development of the EVA Entity and EVA Equity indicators of leasing companies operating in the Czech Republic in the years 2005-2019. The second goal was to analyse the number of leasing companies active in the Czech Republic for the period 2005-2019, focusing on fluctuations in their number in the market during the economic crisis.

Using the performed analyses of historical data, it was concluded that the development of the EVA Equity and EVA Entity

indicators was greatly affected by the economic crisis. However, this influence was felt most by investors and creditors who decided to invest their funds in this economic sector before the onset of this economic crisis. The economic crisis also affected the development of the number of active leasing companies in the Czech Republic.

Both goals of the paper were therefore met after answering all the research questions asked. Another contribution of this paper is considered to be the methodological procedure for determining the value of the parameter β unlevered for Europe on the basis of data set for the USA for the years before 2011. Based on the current economic situation in the Czech Republic and the world, it can be assumed that in the coming years, the development of the values of the EVA Equity and EVA Entity indicators will be similar to the development of these indicators from 2008-2015.

The results of the research are partly limited by varying degrees of the details of the financial statements of leasing companies, which were included in the calculation of both EVA indicators. However, this is due to the reluctance of individual companies to provide financial statements for research purposes in greater detail. Also, the result of the calculation of the EVA Entity indicator may be affected to some extent due to the methodology itself for determining the size of the parameter β unlevered for Europe on the basis of data determined for the USA. On the basis of further research, a comparison of the impact of economic crises on this and other economic sectors of specific countries will be made in the future.

References

- Kasych, A., Vochozka, M.: The choice of methodological approaches to the estimation of enterprise value in terms of management system goals. *Calitatea*. 2019, 20(169), 3-9.
- Andrikopoulos, A., Markellos, R. N.: Dynamic interaction between markets for leasing and selling automobiles. *Journal of Banking & Finance*. 2015, 50, 260-270.
- Dasgupta, S., Siddarth, S., Silva-Risso, J.: To lease or to buy? A structural model of a consumer's vehicle and contract choice decisions. *Journal of Marketing Research*. 2007, 44(3), 490-502.
- Mannering, F., Winston, C., Starkey, W.: An exploratory analysis of automobile leasing by US households. *Journal of Urban Economics*. 2002, 52(1), 154-176.
- Ionascu, I., Ionascu, M.: Business models for circular economy and sustainable development: The case of lease transactions. *Amfiteatru Economic*. 2018, 20(48), 356-372.
- Tot, I.: Residual value risk in automotive operating lease contracts. *Zbornik Pravnog Fakulteta Sveucilista u Rijeci*. 2017, 38(1), 303-337.
- Cerquitelli, T., Regalia, A., Manfredi, E., Conicella, F., Bethaz, P., Liore, E.: Data-driven estimation of heavy-truck residual value at the buy-back. *IEEE Access*. 2020, 8, 102409-102418.
- Li, Z., Quyang, M. G.: A win-win marginal rent analysis for operator and consumer under battery leasing mode in China electric vehicle market. *Energy Policy*. 2011, 39(6), 3222-3237.
- Zhang, X. P., Rao, R.: A Benefit analysis of electric vehicle battery swapping and leasing modes in China. *Emerging Markets Finance and Trade*. 2016, 52(6), 1414-1426.
- Jiao, W., Yan, H., Pang, K. W.: Nonlinear pricing for stochastic container leasing system. *Transportation Research Part B-methodological*. 2016, 89, 1-18.
- Li, K. J., Xu, S. H.: The comparison between trade-in and leasing of a product with technology innovations. *Omega-International Journal of Management Science*. 2015, 54, 134-146.
- Benmelech, E., Meisenzahl, R. R.: The real effects of liquidity during the financial crisis: Evidence from automobiles. *Quarterly Journal of Economics*. 2017, 132(1), 317-365.
- Morals, A. I.: Why companies choose to lease instead of buy? Insights from academic literature. *Academic-Revista Latinoamericana Administracion*. 2013, 26(3), 432-446.
- Svoboda, P.: New approaches to the operative leasing accounting. *Zemědělská Ekonomika [Agricultural Economics]*. 2010, 56(7), 341-348.
- Svoboda, P.: Application of new approaches in recognizing leases on the part of the lessee in the selected companies in the Czech Republic. *Zemědělská Ekonomika [Agricultural Economics]*. 2011, 57(7), 340-349.
- Chakrabarti, A.: Economic Value Added (EVA): Performance metric to sustain competitiveness. *Global Business Review*. 2016, 1(2), 279-299.
- Du, F., Erkens, D. H., Young, S. M., Tang, G.: How adopting new performance measures affects subjective performance evaluations: Evidence from EVA adoption by Chinese state-owned enterprises. *The Accounting Review*. 2018, 93(1), 161-185.
- Gupta, V. K., Sikarwar, E.: Value creation of EVA and traditional accounting measures: Indian evidence. *International Journal of Productivity and Performance Management*. 2016, 65(4), 436-459.
- Behera, S.: Does the EVA valuation model explain the market value of equity better under changing required return than constant required return? *Financial Innovation*. 2020, 6(1), 1-23.
- Carlucci, D., Gianpaolo, I., Laise, D., Migliano, G.: Measuring value creation: VAIC and EVA. *Measuring Business Excellence*. 2014, 18(1), 8-21.
- Stern, J.: Acquisition, pricing, and incentive compensation. *Corporate Accounting*. 1985, 3(2), 26-31.
- Neumaierová, I., Neumaier, I.: Finanční analýza průmyslu a stavebnictví za rok 2007 [Financial analysis of industry and construction in 2007]. *Analýza MPO [Analysis of the Ministry of Industry and Trade]*. 2008, 1, 1-187.
- Machová, V., Vrbka, J.: Value generators for businesses in agriculture. *The 12th International Days of Statistics and Economics Conference Proceedings*. 2018, 1123-1132.
- Vochozka, M., Machová, V.: Determination of value drivers for transport companies in the Czech Republic. *Nase More*. 2018, 65(4), 197-201.
- Stehel, V., Vochozka, M.: *The analysis of the economical value added in transport*. *Nase More*. 2016, 63(3), 185-188.
- ČNB. Výnos desetiletého státního dluhopisu [Ten-year government bond yield]. [online] 2020. Available at: https://www.cnb.cz/cnb/STAT.ARADY_PKG.VYSTUP?p_period=1&p_sort=2&p_des=50&p_sestuid=375&p_uka=1&p_strid=AEBA&p_od=200004&p_do=201908&p_lang=CS&p_format=0&p_decsep=%2C
- Damodaran, A.: Damodaran online [online] 2020.. Available at: <http://pages.stern.nyu.edu/~adamodar/>
- Stern, J. Acquisition, pricing, and incentive compensation. *Corporate Accounting*. 1985, 3(2), 26-31.
- CSO. Vývoj HDP České republiky [GDP development of the Czech Republic]. Czech Statistical Office [online] 2020. Available at: <http://apl.czso.cz/pll/rocnka/rocnka.indexnu>

Primary Paper Section: A

Secondary Paper Section: AH

IS LARP THE ANSWER TO THE GAMIFICATION OF EVENTS AND EDUCATION? A CASE STUDY OF THE ONGOING IMPLEMENTATION OF QUESTS AND COINS TO THE CORE OF THE FESTIVAL

^aALEXANDRA KUKUMBERGOVÁ, ^bMICHAL KABÁT

*University of Ss. Cyril and Methodius in Trnava,
Nám. J. Herdu 2, 917 01 Trnava, Slovakia*

*email: ^aalexandrakukumbergova@gmail.com,
^bmichal.kabat@gmail.com*

The study is a partial outcome of the scientific project supported by Cultural and Educational Grant Agency of the Ministry of Education, Science, Research and Sport of the Slovak Republic (KEGA) No. 023UCM-4/2020, titled 'The development of digital game studies and design'.

Abstract: The paper aims to shift the discussion regarding gamification further from its use in terms of gaining profit or customers with the PBL gamification triad (points, badges and leaderboards) approach to the more "gamey" place. It describes ongoing attempts to improve the gamified system on a community event hosted by the university. We identified two core aspects of this system that are supposed to balance each other out: quests as playful methods of gaining currency (coins) and motivation to collect them (prize), with a goal to design a gamified system that is awarding in more thoughtful way. Our main goal is to apply a similar system into the university environment and use it as a way to achieve better engagement of the students in education in general, but also in non curricular activities that take place in the campus.

Keywords: coins, game studies, gamification, LARP, motivation

1 The festival background

In spite of delay due to socialist era, the popularity of cons in our country is persistent and currently growing. These conventions usually take place in the main city and though they are mostly profiled for the more or less same target group of young people interested in fantasy and sci-fi, they differ slightly. Some are more focused on anime and manga, mythology and fantasy, or gaming culture.

UniCon is the example of the latest. Its mainly focused on gaming experience; the idea to create another festival, although first of this kind in this particular city, comes from a will to re-create concept of LAN parties (gatherings of people playing the same game at once, connected by Local Area Network, hence the LAN abbreviation). Gaming experience is therefore supposed to be the core of the festival itself.

Given festival takes place in a smaller city that is characteristic (among other things) for its three universities and it is relatively unique in some ways that are important to mention.

First of all, the name of the event originates in its background; UniCon is a festival produced entirely by one university, specially by one faculty. It is organized mostly by a small group of faculty members, and its entire staff consists of students only. This year, it was run almost entirely by only one PhD student with help of one teacher/founder and few students representing individual sections (such as esports, cosplay section, retro gaming).

Being a student festival, UniCon carries some aspects worth of observation. Since the main reason why this event even exist is to provide some sort of practice for the students, UniCon serves as a training tool, combined with its another main purpose; to create space that concentrates gamers in a more traditional meaning of that word; not only players of digital games, but cosplayers, fans, hobbyist and enthusiasts, everyone that takes some interest in gaming culture. It also aims to show this subculture to the "outsiders", parents, other students and university staff. Such an event may even serve as an effective means of promoting the faculty and university (Černá et al, 2015).

That being said, the festival is tightly connected to faculty itself not only personally, but also by the idea of containing this

gaming-friendly space not only for the duration of the event, that lasts only one weekend in a year (not including preparations that take a much longer). As we have outlined above, the main purpose of this paper is to present a case study conducted during the 2020 UniCon. The data was recorded by the UniCon mobile application, which was used by participants throughout the festival to collect "coins" (i.e. to engage in various activities in order to obtain them) and thus win various prizes. This rather experimental method is based on participant observation conducted during the festival. The given qualitative (ethnographic) research method allows us to observe various communication phenomena, as well as people (in our case the festival participants) and their interactions (Trampota, Vojtěchovská, 2010). According to Sedláková (2014), participant observation offers us a rare opportunity to uncover people's values, social practices and true behaviour patterns. The participant observation is complemented by a brief analysis of data recorded by the festival's mobile application. We believe that some of these results and observations related to them may help us to better understand how education-related gamification works and which benefits it might offer us if applied creatively.

2 Festival currency as a form of coin collecting – first half of the model

We incline that this festival doesn't come from a drive to raise profitability of the festival, however its background is partially financial. So initiative may differ, but we believe that in the sake of the wished outcome (in the form of playful experience), what matters is the input. We do not want "the simplest, fastest route to getting customer sign-off and billing for services" (Bogost, 2015).

2.1 Theoretical background

In early years of gamification (after its widespread adoption around 2010) "marketing and consultancy sectors have been promoting gamification as a potential source of revenue" (Fuchs et al, 2014) and marketing sector has actually been using gamification even before coining the term – for example in form of advergames or guerilla marketing (Mago, 2015) which are ways that still be used in the making of the event.

Since then, its understanding has significantly shifted and we have a privilege to prefer these changes, as in this gaming convention we are able to prioritize playful experience before economic endorsement as a main goal of a gamified system.

That is partially the reason why this game of ours does not lead to "danger to fall into a trap that leads to a conflicting situation between selling and creating valuable experiences." (Hamari, Huotari, 2012) This is mostly an intentional decision that we made over the years; even when "hunt for coins" (our game is yet to receive proper name) is a significant part of the festival, it is not a crucial part of the promotion or producing revenues. Guests get to choose whether they are the participants of the game within the festival, regular guests, or coin collectors – "agents who can choose whether they are playing or using a gamified application" (Foxman, 2020).

Gamification as we use it is probably best described by Ruud Koorevaar's statement: "Gamification entails the use of elements of games to alter and add to our daily landscape of activities by engaging us in non-game contexts" (2012), with the difference that our landscape of activities is not happening daily and we try to make the context as "gamey" as possible.

2.2 Development and current state

Implementing gaming elements onto this event is an ongoing process, so happenings in the past years are quite important for understanding of its current form.

As said before, UniCon is a small event organised by people who do their work voluntarily. It even takes place in a school building and the number of visitors, although its growing, is limited by the space and staff capacity of the current place used. It doesn't have an ambition to become one of the prominently large events, but that also means that financially, it is limited partially to school funding and to occasional sponsor gifts.

First year, when the event was mostly about esport tournaments (which is still a huge part of the festival), one (and only) sponsor of the event was willing to provide donation under the condition of using it to buy a few luxurious prizes. So a fancy gaming computer was bought as a prize, among other things, but there was not enough of them to reward all the winners in all the categories; so a new system was designed, in which these prizes were winnable in the final lottery. Lottery tickets were accordingly distributed among visitors and contestants in tournaments; winners got more of them, guests only one. These lottery tickets meant only a chance to win; the more effort you put in, the bigger chance you got.

This system was obviously very flawed; winning the prestigious prizes depended more or less on randomness. It could have happened that even the biggest prize would have been won by a random visitor, who spent half an hour at the event. Although that did not (fortunately) happen, it was clear that this model needed to be changed.

And it was. Next year, this model was temporarily abandoned (prize pools consisted of cash only) but on the third year of the festival, we adopted a new model; similarly, people (visitors as well as tournament players) were supposed to collect currency, but this time, currency was not a chance to win (represented by lottery tickets), but so-called unicoin, made-up currency in form of small gold-ish beads with small U on them. Instead of lottery, prizes were sold at an auction. Meanwhile, esport tournaments developed to more prestigious events with its own sponsors and disattached from this game of coins. Hunt for unicoin became separate.

Winnable prizes serve as a motivation, but also as a tool to "reconcile the tension points between the norms of the real world and those of the virtual world", (Kim, Werbach, 2016) although this tension materializes more in other gamifications fields (for example, when virtual coins are partly used as a substitute for actual pay for employee's work – that being an ethical dilemma in gamification forced upon workers).

2.3 Proved model

Auction in this model is a very appropriate tool to serve as a distributor of these prizes. It eliminates the risk of disappointing people who were given unwanted reward for their effort (since even with pricey objects such as gaming equipment, there is a possibility that the winner already possesses it; and selling prize at the bazaars is a truly undesired outcome). Auction in this form is also a great way to indulge individuality of peoples wishes; it lets them decide the attractiveness and value of presented items and even though they are on a display during the festival, there is still room for suspense left, since items are sorted randomly (that is, of course, not the case in serious auctions).

For most of the items, there is no clear link to their actual value (in euros for example). How much does a Witcher puzzle cost? And how much would you pay for it?

Of course, besides the fact that these items are not something that people buy regularly, which means that they lack the ability to estimate their price, there is also an individual approach to "buying" them as we mentioned before. That increases the importance of another question; it is not only about putting a price tag on stuff, but it's also about how much you are willing to pay. It brings out a fictive value / real value ratio, and the relation of the two also changes with various facts. For example, one of the aspect that affects the amount of (fictional) money people want to spend on particular item is the time passed; when

they are given a choice of either leave with coins that cannot be used anywhere else, or to spend them on one of the last prize presented, they of course choose to spend them (and eventually to spend all of them).

That is actually the reason why having an experienced/good broker at your auction is the key for your guests' will to spend money; timing and order of the sold items is an important aspect and it has some rules (no two same items in a row and so on).

The auction is (so far) an ideal solution, but we are also registering some undesirable aspects that it brings. For example, at high prices, it can be unpopular for sponsors who obviously do not want their prizes to be auctioned for a few coins. The same problem arises when there are two items of similar value from competing brands in the auction. For example, if we were to bid PS and Xbox, it would not be desirable for one to be auctioned significantly more expensive than the other. As we have explained, this also depends on several conditions and may not be informative, but it is understandable that sponsors are reluctant to see such a result.

2.4 Coins unspent

During the making of this festival, there was even an idea of this virtual money, these unicoin, to have a form of chocolate coins – candy money. In that case coins not spent could have been taken and eaten and even people that did not participate in the final auction would actually get some pleasure out of them.

That brings us to another part of what it means to use virtual money in coin collecting game. When the game is voluntary and it ends with giving out gifts through auction at the end of the festival, what happens to coins given to the people who are not staying that long? Or with coins within a larger group of friends? Coins of course circulated on their own.

It is the same debate about individual value; coins are much more valuable for the people who are collecting them determinedly. Transfer of these coins from one person to another should not be prohibited, since it is a regular part of the game. Every year, this kind of behaviour occurs; a group of friends combine their coins onto one person, therefore have a better chance to bid on bigger items, some players are convincing leaving guests (therefore visitors that are not staying to the end) to yield their unspent coins in their favor and so on.

Guests staying to the end, and therefore spending more time at the festival, is one of the wished outcomes of this additional content, but that is, naturally, not going to happen to everyone. This currency flow is permitted – even if forbidden, there would be really no way to control it when using physical coins as in previous years. This year, these physical coins, beads, were replaced with digital currency in the app created specially for UniCon, so making coins not transferable between players was possible, but we choose not to, so it created some sort of free market, where players may use their creativity to gain extra coins.

3 LARPing your way through the festival – second half of the model

LARP, live action role playing, is one of the ways to slightly shift the way of looking at gamification. Gaming conventions – such as UniCon – are obviously an easier subject to test this approach (and as explained below, appropriate trial when trying gamification in higher education). As we explained, a partial reason for this additional element in the festival is the effort to motivate guests and to better distribute prizes from sponsors and to provide playful experience on more than one level.

In this case, one of the students designed and wrote a short cyberpunk themed backstory about training for uprising that quests/players needed to undergo while collecting coins for the quests (or training on various stages; they needed to score in a shooting game, "prove physical strength" in Just Dance or other

games). These quests were given to them by various NPCs, special staff members in costumes, that were positioned on various places around the campus.

The marketing-oriented questionnaire that we have at our disposal (conducted by the faculty's student as part of her future bachelor's thesis, that is yet to be published) shows that this game is really only added value at the festival, and that it is not one of the motivations why visitors come to it. It was not heavily advertised and besides gifts given by sponsors (and school), it was not a costly part of the festival as a result of the decision not to hire a company for it (as we were considering), but to leave this part to a student who was interested in it. He convinced his friends (mainly) from the community of cosplayers and other students to play the role of NPCs for a ticket to the festival. The application, which recorded the entry of quests and the movement of coins at the same time as the "payments" at the final auction, was also developed by one of the students.

Thus this game did not have to meet any financial expectations. In addition to what has been said – its role to make the course of the festival more special for those who decide to do so and to serve as a training tool – we also wanted to use the quests to better involve the festival partners and inconspicuously bring the visitors' attention to them. That is something that we would like to test in a future in a restructured way; ideally, such involvement should be reminiscent of in game advertising, in which players interact with brands – in our case, visitors to partner organizations.

3.1 Interpretation of numbers

What seems to be more problematic is that we have yet to find a practical way to verify qualities of implementation of game elements in this particular way. When dealing with gamification in product marketing, brand loyalty or in similar fields, success or failure is possible to describe in revenues, sales, employee productivity, or other measurable index.

When treating gamification as a tool to just better the experience of the person, we have few possibilities; we can ask them in a focus group, question form, making annual reports of how many people "finished" the game until the very end, but none of these methods seem to be appropriate.

However, we will not abandon every academic approach to this issue; instead, we plan to focus more on the few things that we are able to measure. As said before, our mission on this festival is to bring the audience to a world that we like and find relevant and to test various ways how to accomplish that. We can observe behaviour of the festival visitors and use them as a form of research group and now we are developing schemes on how to use available and observable facts as indicators of some sort.

2020 was the first year we used mobile app as a platform for taking track of the in-game events. This year was more appropriate for this "innovation" than another, since the festival was cyberpunk-themed, but we plan to use it next year. It is valuable as an option to keep track of how long guests are staying and even when the number of people participating in these quests are relatively small in comparison to the number of all attendants.

This year we can interpret the data obtained from the app, which helps us determine the attractiveness of individual quests. In some cases, this can be easily estimated by monitoring, and such an estimate can later be verified in the data from the application. For example, the quest "Masking", in lore explained as receiving the mask needed to fight evil corporation, was actually letting two girls to paint your face cyberpunk-style, and we could already notice at the festival that it was quite popular, seeing how many guests walked around the place with a cables and hardware painted on their face.

Anyway, these data we gathered showed us that this game was played by one tenth of the total number of people at the festival throughout the weekend (around sixty participants of this game

to six hundred people). It may seem like a rather disappointing number, but we need to take into consideration that in that pool of that 600 people, there is a lot of people that were not the target group in the first place (staff and festival crew that was prohibited to play in order this game to be fair, gamers at a esports tournaments that did not have time for it, people from guest list such as university personnel and sponsors and so on). After subduction of these sections, the final ratio (of people who were participating in this LARP and those who were not) increases to about 1:4. That is an appropriate result and we do not consider it a failure. Fact is, that just about half of them "finished" the game and participated in the final auction.

However, we plan to better and polish happenings at UniCon and try to attract more people into this game; we do have some educated guesses on how to do so, as explained in the next sub-chapter.

Although the festival is organised by university, it is attractive for younger audiences as well (as expected) but the data tells us that this LARP was played by both kids and adults and that seems like a proper representation of what the festival consists of.

3.2 Flawed parts and improvement plans

This game for sure differs from "real" LARPs which use to connect groups of people that are dedicated to play, but that is an acceptable part of putting up this model at a game convention.

In this hunt for coins, sometimes it became more obvious that main motivations are the coins itself/or the process of collecting than the quests alone. It somewhat creates inconsistency in the whole idea of this game as a form of LARP, but it is understandable as well, since a huge part of the quests was to "make" people try out various attractions and "discover" locations of the festival. If we aim to build an atmosphere that provides a playful experience, the game itself needs to balance out more trivial motivation that prizes are, but we do understand the limits of game design in this particular circumstances.

We do have some ideas for changes. For example, the matter of people losing motivation in the game and not staying until the end could be partially resolved by creating fractions.

Already this year, we entertained the idea of creating teams in which players would join. In this testing phase, we came up with several ideas to make such a system more reliable and attractive. For example, the creation of two or three fractions, i.e. teams, should create a better structured environment for creating in-festival connections.

For example, it should motivate people who do not want to participate in the festival throughout its duration, but may also want to participate in the game anyway. We would test whether being part of something more complex than just the player himself would be a relevant factor in the players' behaviour. We would allow better flow of currency in between players in one fraction, give them some in-game benefits and so on.

In a bigger picture, we are hoping to create some sense of community, so called *communitas*. We can take inspiration in existing successful projects, that "demonstrate the growing importance of having more fun with strangers and of using games to build our own capacity for community participation." (McGonigal, 2011)

We also consider this, because we believe that it is one of the ways to pull guests "deeper" into this play. Since this is a small university event, there are no strict lines between staff and guests (which is the reason why the total count of people may be inaccurate for calculating success rate of the game), and we aim to continue to erase these boundaries in order to bring these players into the game in this way as well. Therefore, we want to give fractions, in addition to advantages, also certain positions of function.

Even when UniCon lasts for two days, there are some playful things that we would like to test. One of them is putting in work another element of gamification triad; leaderboards. Leaderboards are not very applicable in the current system "every man for himself" but could be tested along with the fractions. If we could manage to create a competitive environment, where teams would actually try to compete, these leaderboards could help it; maybe even in the form of hanging the flag of the team currently on top.

This year we tried it in a mild form. Out of a few people from the staff, i.e. students helping with the festival, we created a guild of security guards. They got weapons (NERF guns), guarded the prices for the auction, helped out in individual sections, had free drinks at the festival bar, and if they found someone without a bracelet (i.e. someone who bought only a time-limited ticket and his time expired) who wanted to go to the festival. but to remain, they should have given him the opportunity to join them. Then the person who bought the cheapest ticket would have the opportunity not just to stay at the festival, but be a part of it.

These guards were a small version of what this game was to convey at the festival: the group of people who play, help with small tasks that need to be done and have certain advantages for that. In fact, this is something that we would like to accomplish in education as well.

4 Using this experience in gamified education

We want to apply this experience in higher education. In the academic year 2021/2022 we want to test it on just one school subject.

The main idea is not to use game elements directly for improvement of learning, but rather for a system of motivation to engage in various activities, create a competitive environment, present several opportunities that the school already provides, create new ones and also connect individuals with joint mindsets.

What we have described as expectations and means in the faction system at UniCon is basically what we are trying to create at school; only with some minor changes. Just as at the festival, we want students to spend more time at school and do it voluntarily, or almost voluntarily which basically means to nudge them into behaviour that we find beneficial for their education and/or faculty goals – not just one particular game used to meet the wanted goal; "not a single activity but a set of relevant activities and systematic processes" (Kim et al, 2018).

That does not necessarily mean school activities exclusively. It could include attending seminars outside of school, thematic screenings that we plan to organise at cinema in the school basement, expositions, talks or take part in something more creative or research-orientated. That means we want to give them enough to choose from, but at the same time push them into things they have yet to discover.

This is based on our experiments tried on our convention, but also on theoretic and practical research that was already done by scholars.

Just like at the festival, where the "guards" helped us with minor tasks, so at school we have assignments that are not crucial for the existence of the faculty, but are more of an additional character. As a games-oriented study, we take interests in many parts of the gaming culture and many of them are possible subjects for research, study, digitalisation or even collecting. Our goal is to help students navigate these possibilities and help them find out what they are interested in.

We have prepared methods on how to "make" them do additional tasks that are not mandatory but have value for our students. For example, we can recommend them a youtube channel from which they could benefit from (maybe videos on

game theory or insight work on game design and ethics such as ExtraCredit) but we can do it in a different way; maybe one of the tasks could be to make video subtitles or to proofread existing ones.

Practically, it will have the form of a game, but with two currencies. The first will be expressed in the form of experience levels; some of the ones that will be offered will require a certain amount to be performed. Our subjects have ECTS grading scale, so in order for a student to pass at all, they must obtain a "pass" to the next level, which means there will be a certain minimum number of quests / tasks that the student must complete. The higher they get, the better his mark. These levels, or passes, are an expression of the student's activity or effort and determine the final mark on the subject.

The second currency will be, as at the festival, coins, which will serve as a reward. For them, students will be able to "buy" prizes with a real live equivalent value that is rewarding but also not counterproductive; for example, tickets to a game event, participation in certified courses, or even some equipment.

We see this reward as a form of motivational scholarship; students in our subject field are not usually receivers of that, so this is the form which would be for them maybe more alluring or approachable.

Literature:

1. Bogost, I.: *Why Gamification Is Bullshit*. The Gameful World. Cambridge: The MIT Press, 2015. 688 p. ISBN 9780260028004
2. Černá, J. et al.: *Marketing vzdělávacích institucí*. Trnava: University of Ss. Cyril and Methodius, 2015. 150 p. ISBN 978-80-8105-752-6.
3. Hamari, J., Huotari, K.: *Defining Gamification - A Service Marketing Perspective*. MindTrek '12: Proceeding of the 16th International Academic MindTrek Conference, [online], <https://dl.acm.org/doi/10.1145/2393132.2393137>.
4. Fizek, S. et al: *Rethinking Gamification*. Lüneberg: meson press, 2014. 344 p. ISBN 978-3-95796-001-6
5. Foxman, M.: *Punctuated Play: Revealing the Roots of Gamification*. Acta Ludologica. Vol. 3, No. 2. Trnava: University of Ss. Cyril and Methodius, 2020. ISSN 2585-8599
6. Koorevaar, R.: *Ludified Culture: Gamification*. Utrecht: Utrecht University, 2012.
7. Kim, T., & Werbach, K.: *More than Just a Game: Ethical Issues in Gamification*, Ethics and Information Technology, Vol. 18, No. 2, pp 157-173. Dordrecht: Springer, 2016. DOI 10.1007/s10676-016-9401-5
8. Mago, Z.: *Tetris and Gamification in Marketing Communication*. New Perspectives in Game Studies: Proceedings of the Central and Eastern European Game Studies Conference Brno 2014. Brno: Masaryk University, 2015, pp. 91-107. ISBN 978-80-210-8044-7
9. McGonigal, J.: *Reality Is Broken: Why Games Make Us Better and How They Can Change the World*. New York: The Penguin Press, 2011. 373 p. ISBN 978-1-59420-285-8.
10. Sedláková, R.: *Výzkum médií: Nejuživanější metody a techniky*. Prague: Grada Publishing, 2014. 548 p. ISBN 978-80-247-3568-9.
11. Trampota, T., Vojtěchovská, M.: *Metody výzkumu médií*. Prague: Portál, 2010. 296 p. ISBN 978-80-7367-683-4.

Primary Paper Section: A

Secondary Paper Section: AJ

INNOVATIVE INFORMATION AND COMMUNICATION TECHNOLOGIES FOR ERGOTHERAPISTS APPLIED DURING ENGLISH LEARNING IN UKRAINE

^aALLA KULICHENKO, ^bYURIY POLYEZHAYEV

^aZaporizhzhia State Medical University, 26 Maiakovskoho Av., Zaporizhzhia, Ukraine 69035.

^bNational University "Zaporizhzhia Polytechnic", 64 Zhukovskoho Str., Zaporizhzhia, Ukraine 69063.

email: ^aalla.kulichenko@gmail.com, ^byuriy.brikrio@gmail.com

Abstract: According to Ukrainian higher educational policy, there is an urgent need to combine general competencies. Thus, the article aims at highlighting the use of innovative information and communication technologies (ICTs) for ergotherapists when learning English in Ukrainian higher educational establishments as types of such competencies. To achieve the objective of research the authors have applied theoretical and empirical methods. Besides, the authors are convinced that content and language integrated learning (CLIL) is appropriate to apply with innovative information and communication technologies when teaching a foreign language. Moreover, the research describes how to use Lumowell, a YouTube channel, Quizlet, and Zoom, free online educational platforms.

Keywords: content and language integrated learning, English, ergotherapists, innovative information and communication technologies, self-study, Ukrainian higher educational establishments.

1 Introduction

Modern education is undergoing an upgrade to meet the constant challenges of society and scientific and technological progress. There are new forms, types, methods, and means of organizing the educational process aimed at providing the quality training of a new generation of specialists and experts. Such specialists and experts are to master a set of competencies declared in the higher education standard for each speciality and approved at the national level. Such a system is usually based on the so-called "triad", which is the integral competence, general and special (professional) competencies. Note that the command of a foreign language, its use in future professional activities, and the ability to operate information and communication technologies is one of the key general competencies in each higher education standard. Nowadays, in the time of digitalization, when all the necessary information is in a smartphone and a PC, students are no longer interested in the traditional presentation of educational material in the form of regular lectures and practical classes. Therefore, the ability to turn smartphones and PCs into assistants as a part of student-oriented models of arranging the educational process continues to become more relevant (1) in developing a set of competencies.

K. Ratheeswari states that "information and communication technologies are making dynamic changes in society. They are influencing all aspects of life. The influences are felt more and more at schools. Because ICTs provide both students and teachers with more opportunities in adapting learning and teaching to individual needs, society is, forcing schools aptly to respond to this technical innovation". (2)

In the age of a major deterioration of health of the population in Ukraine, there is a growing need for the revival of natural approaches to addressing health problems, while the growing demand for physical and rehabilitation services determine the demand for high-level professionals capable of developing and applying up-to-date integrated rehabilitation technologies to restore, enhance and preserve the health of various sociodemographic groups of the population. (3)

In this context, Ukraine has been witnessing a significant interest in speciality No. 227 "Physical therapy, ergotherapy" of the first (Bachelor) and the second (Master) levels of higher education, which can be obtained either in medical or classical universities that train specialists in numerous areas. According to Yu. Lyannoy, "getting higher education in physical therapy plays a fundamental role in ensuring professional identity and is an important tool for promoting freedom of movement and the right to the professional activity of physical therapy specialists in Ukraine and foreign countries". (4)

We thus consider it necessary to study the importance of combining general competencies, i.e. integration of innovative information and communication technologies into the educational process and learning English by ergotherapists in higher educational establishments of Ukraine. Unfortunately, Ukrainian pedagogical space has covered this issue in a very fragmented manner.

So, the objective of the research is to highlight the use of innovative information and communication technologies ergotherapists when learning English in Ukrainian higher educational establishments.

2 Methods

To meet the goal of research we have applied such methods as (i) *theoretical* ones: analysis, synthesis, generalization, concretization – to study and systematize scientific and referential literature on the problem of innovative information and communication technologies in general and in particular for future ergotherapists, their application during English learning in Ukrainian higher educational establishments and (ii) *empirical* one: diagnostic (surveys and interviews) – to get relevant feedback concerning a series of English classes with ICTs.

3 Results and discussion

Since we study ICTs applied in the educational process when delivering English language classes to ergotherapists in Ukrainian higher educational establishments, it is necessary to first analyse the terminology of this study, namely: "information and communication technologies" and "innovative information and communication technologies".

The term "information and communication technologies" emerged in the 1980s and was used by researchers to refer to the dual function of processing information and facilitating communications. (5) Though, the term above was associated with education in the late 1990s in the UK with the publishing of the work titled "*Information and Communications Technology in UK Schools. An independent inquiry*". The authors of this paper insisted that the role of ICT was to serve education: in particular by helping students to learn more effectively and by helping teachers to do their professional job. (6)

R. Hernandez points out that "teachers, faced with the transformative vision of a society that needs to integrate ICTs into the classroom, have seen their role change into that of agents with the ability to generate the necessary skills for a society "yearning" for technological knowledge and the frequent use thereof in various educational matters". (7) Thus, with the introduction of ICTs in the educational process, the faculty turns from authoritarian leaders into consultant-mentors (partners) who should adapt themselves to changes, new interests, abilities, and to create appropriate conditions for developing valuable qualities in students.

British experts in foreign language teaching methods J. Scrivener and J. Harmer emphasize that the active dissemination of ICTs highlights the importance to reconsider the role of an educator while teaching a foreign language for both general and special purposes. (8,9)

Besides, J. Harmer notes that the teacher changes gradually the traditional role of a knowledge transmitter into other equally important roles such as *facilitator, controller, prompter and editor, resource and tutor, organizer, task setter, monitor, and evidence gatherer, feedback provider*, etc. Active use of those roles promotes communication between students within the communicative approach to foreign language teaching, helps them to update their heuristic potential, and reduces teacher talking time. (9)

With the implementation of information and communication tools as a part of the learning material in the system of blended learning, the mentioned roles become increasingly important. Indeed, the use of authentic content requires an increase in time spent in preparation for classes and relevant content design for both classwork and homework. It means that the language teacher should not only design tasks but also calculate the time to complete tasks, set up a material monitoring system to control four skills of language learning (listening, speaking, reading, and writing). All these will promote the development of communication competencies in the field of ergotherapy. Therefore, these features of activity in the information and communication paradigm require the skills of the organizer and manager within the educational process.

A. Engel et al. consider that “never before in the history of developed societies has it been possible for children and adolescents to participate in so many and such a variety of activity contexts that offer opportunities and resources for learning. However, the possibility of participation is not the same for all young people. On the one hand, the activity contexts that are available to them and in which they may take part differ not only in number but also, and especially, in terms of the richness and variety of learning opportunities and resources. Furthermore, not all young people have achieved, or have had the chance to acquire and develop, the competencies required to take advantage of these opportunities and resources, especially as regards the use of ICT tools and devices”. (10)

According to the Merriam-Webster dictionary the term “innovative” means characterized by, tending to, or introducing innovations that in turn indicate (i) new ideas, methods, or devices; (ii) something new. (11)

Thus, following Yu. Tryus, we understand innovative information and communication technologies of education as new, original technologies (methods, tools, ways) to develop, transmit and preserve educational materials and other information resources for educational purposes, as well as technologies for organizing and supporting the educational process (traditional, electronic, distance, mobile) with the use of telecommunications and computer networks, with the technologies in question purposefully, systematically and consistently introduced into educational practice. (12)

Using e-learning as a case in point, we will study the process of mastering English by ergotherapists in Ukrainian higher education establishments. A.-P. Pavela et al. mention that “e-learning is the use of electronic media, educational technology ICT in education. E-learning includes numerous types of media that deliver text, audio, images, animation, and streaming video, and includes technology applications and processes such as audio or videotape, satellite TV, CD-ROM, and computer-based learning, as well as local intranet/extranet and web-based learning”. (13)

Furthermore, the researchers state that “there are several benefits of e-learning, such as saves time and costs or the possibility of learning 24/7, anywhere. For many students, e-learning is the most convenient way to pursue a degree in higher education. A lot of these students are attracted to a flexible, self-paced method of education to attain their degree. Moreover, in asynchronous e-learning classes, students are free to log on and complete their assignments at the times they wish, whether it be early in the morning or late at night. However, many teachers have a harder time keeping their students engaged in an e-learning class. One reason for this is the lack of face-to-face contact between students and teachers, being difficult for teachers in this way to read their students’ non-verbal cues, boredom, or frustration”. (13)

Besides, O. Ryzhov adds that one should also take into account the availability of basic computer skills and Internet access with the ability to use it, e-mail tools for contacting faculty members, and other participants of the educational process, as well as individual psychological characteristics of students. (14)

Regarding the ICT competence of future medical professionals, N. Ivankova considers it as “the ability to navigate the information space, to use ICTs based on educational needs and requirements of modern high-tech society”. (15) Furthermore, 1st and 2nd academic year students, who are currently studying, will have to work in new conditions once graduated, which will require them to have modern information and communication skills with a high level of proficiency. (15)

Active involvement of ICTs never changes the most communicative-oriented paradigm of foreign language teaching in higher education and its focus on training a specialist in the relevant field of knowledge. That is why the implementation of content and language integrated learning (CLIL) is growing when learning a foreign language.

Finnish researcher D. Marsh considers that this approach focuses not only on language learning but also on the formation of intercultural knowledge, internationalization of education and improvement of the educational paradigm due to the needs of the global labour market. (16)

Thus, today L. Gajo’s findings dedicated to the problem are highly relevant. Swiss researcher regards it as an umbrella term to denote a bilingual situation in the educational environment. (17)

Medical education, in particular in the field of ergotherapy, takes place within language polyphony, where English is a modern lingua franca, used for communication between domestic and foreign students both in daily and academic forms. The implementation of CLIL methodology in the process of teaching foreign languages can not only be a tool to improve students’ language and speech skills but also provides opportunities and expands a teacher’s functionality to immerse students in professional communication, using a foreign language. Besides, it takes into account their cognitive skills that go beyond a stable framework of traditional acquisition of foreign language material. (18)

A. Frumkina et al. state that the application of CLIL helps during the formation of various student competencies, namely psychological and pedagogical competence (which can be also regarded as professional one), foreign language competence (i.e. speech), and linguistic and methodological competence (within its case there are professional and linguistic ones). (19) That is why the CLIL approach, its elements, is a current practice within teaching foreign languages in higher education.

When designing tasks and teaching materials in the context of the CLIL approach, one should systematize it according to its belonging to different communicative-conditioned situations – techniques that develop basic interpersonal communication skills (BICS) and cognitive academic language proficiency (CALP). (20)

According to K. Bentley, during CLIL classes the language material should be divided into the following groups due to communicative goals, objectives, and register:

- everyday language material (lexical and grammatical structures used during each foreign language lesson);
- general and scientific language material (terminological and lexical-grammatical layer, which is used in scientific communication in various fields of knowledge, but is not applied in everyday communication);
- subject-specific language material (lexical and grammatical structures that are specific to a particular professional field or field of knowledge). (20)

To develop a series of classes with ICTs during the quarantine activities related to the COVID-19 pandemic, we have tried to find materials focused on the lexical and terminological field, which meets the professional needs of the future ergotherapists, will be able to interest them and will be available for self-study.

When choosing the language and speech material to design content for online and independent work, we paid attention to the age and cognitive needs of the student community. Besides, we tried to choose the material that would meet students' needs and would not cause them psychological overload, because the vast majority of material during the quarantine students were doing independently. That is why the language material has been selected on a popular platform YouTube. It is immanent nature of video content that facilitates immersion in a foreign language space due to the presence of not only linguistic but also iconic text, which helps to deepen in the material, interests and simplifies perception based on both video and background knowledge.

It is worth noting that students perceive YouTube as a rather interesting, popular, and easy online platform to learn material that is better than a classic textbook or manual for learning a foreign language for professional purposes. Moreover, the system of pre- and after- watching task helps to master lexical set phrases in a game form, to promote the development of receptive skills and to polish professional skills.

Tasks for the development of productive skills were designed in the form of workouts conducted by students via the Zoom platform (<https://zoom.us/>). In addition to the development of professional speech skills in English, students participated in workouts with pleasure, because they performed them together, which was useful to maintain physical shape and psychological state during the quarantine.

A. Negoescu and S. Boștină-Bratu argue that “the video can be a valuable resource within the foreign language class, but only the teacher can harness this resource to design a highly stimulating video-based lesson”. (21)

That's why we have chosen the *Lumowell* channel (<https://www.youtube.com/channel/UC8OzKcoZSKGJIFgHJJpsURA>), a video course on the YouTube platform with more than 730,000 subscribers that deals with fitness workouts (Fig.1). A feature of the channel is the use of cartoon images, which help students to focus on lexical and professional material and not on the appearance of a real personal trainer. We have also taken into account the sound quality and timing of videos, thematic range, as well as the availability and adequacy of recommendations that one can use during internships in hospitals and rehabilitation centres.



Figure 1: Screenshot. The Lumowell channel, YouTube

The design of tasks with ICTs was based on the classic communicative approach for the presentation of the material, as follows *presentation – practice – production (P – P – P)*.

Presentation. The first stage was designed for independent introduction to new professional lexical units via video content from YouTube and a free online educational platform Quizlet (<https://quizlet.com>). We will highlight this process on the example of a video “7 minute workout to lose weight fast, burn fat and tone your body”, from the Lumowell channel.

Thus, firstly, students got the link for the video (<https://www.youtube.com/watch?v=r8cexmYOknI>), see Fig. 2, watched it very carefully for 8 minutes 25 seconds.



Figure 2: Screenshot. A video “7 minute workout to lose weight fast, burn fat and tone your body”, The Lumowell channel, YouTube

Secondly, they were completing all the tasks on Quizlet, using links that were given to them by the teachers. There were two parts of the tasks. The first one was dedicated to the names of exercises and their definitions (Fig. 3a and 3b) and the second one – to the names of exercises and their Ukrainian translations (Fig. 4a and 4b).



Figure 3a: Screenshot. Flashcards. Side 1. An example of a name of an exercise



Figure 3b: Screenshot. Flashcards. Side 2. An example of a definition with pictures

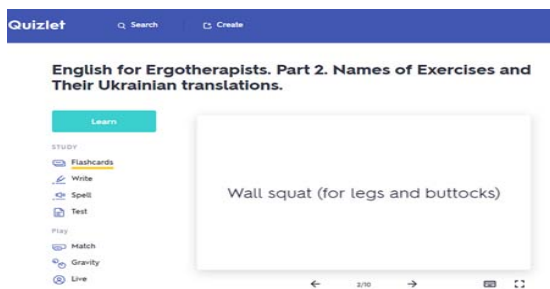


Figure 4a: Screenshot. Flashcards. Side 1. An example of a name of an exercise

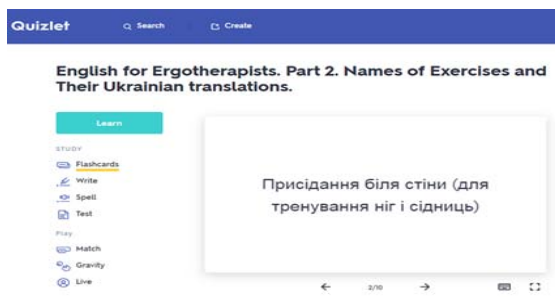


Figure 4b: Screenshot. Flashcards. Side 2. An example of Ukrainian translation

According to the video, there were twelve names of exercises. However, we chose only ten terms and mentioned that students had to guess what two names were missed there and inform their teachers. This task was aimed at testing students' receptive skills and attention. So, students were to study ten flashcards in Part 1. and Part 2., i.e. to memorize terms as well as their explanations and translations.

Practice. During the second stage, students tested receptive skills and practised new lexical units. For this activity, we continued to use Quizlet.

As for Quizlet, the next task was "Write". Students saw either definitions with pictures or Ukrainian equivalents and were to type correct answers in English (Fig. 5).

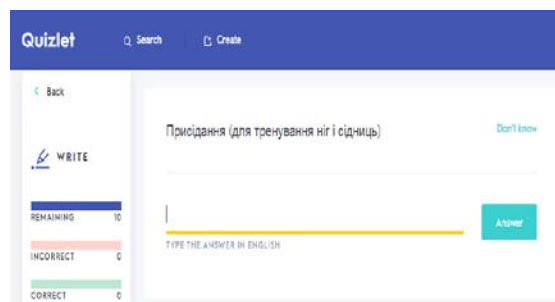


Figure 5: Screenshot. Task "Write"

The task "Spell" focused on word spelling. Students had to click on the button to start audio autoplay. The voice pronounced the term in English, and they were to type what they heard (Fig. 6). If the answer was incorrect, the voice repeated the term.

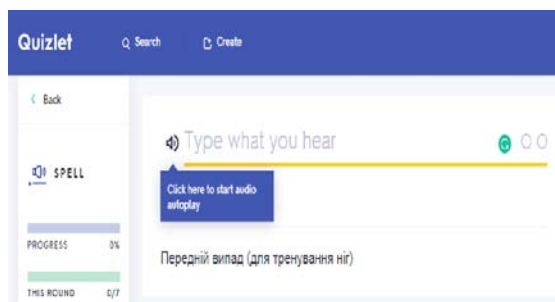


Figure 6: Screenshot. Task "Spell"

Before taking a test there was a dark green button "Learn" that was situated on the front page of the module (Fig. 7). It was so-called "pre-test" with 10 multiple-choice tests. We would like to mention that the voice automatically pronounced either the term or its definition in English and students were to choose the correct either Ukrainian or English answer.

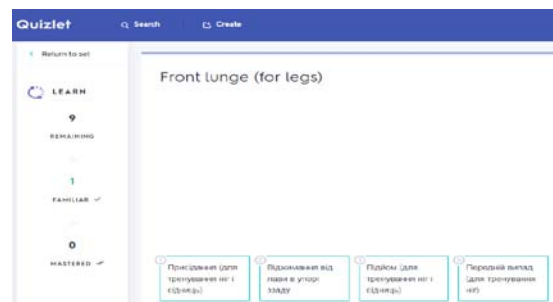


Figure 7: Screenshot. An example of a multiple-choice test within a dark green button "Learn"

Task "Test" consisted of four parts: 3 written questions, 3 matching questions, 2 multiple choice questions, and 2 true/false questions. Note that students had an opportunity to take the test either online (Fig.8a) with checking results or print it and complete it handwritten (Fig. 8b) sending its picture to the teacher.



Figure 8a: Screenshot. Part of an online task "Test"



Figure 8b: Screenshot. A printed task "Test"

After test-taking, students got results – from 0 to 100%, took pictures of personal scores, and sent them to the teachers.

For motivated and erudite students there were extra tasks – two games:

- "Match" (Fig. 9a). One had to match English terms with their definitions or Ukrainian translations paying attention to time. One who was the fastest participant became a winner;
- "Gravity" (Fig. 9b). One needed to choose appropriate options (languages, levels, etc.), and start a game. After the start one had to see asteroids with terms or definitions and type their Ukrainian equivalents.

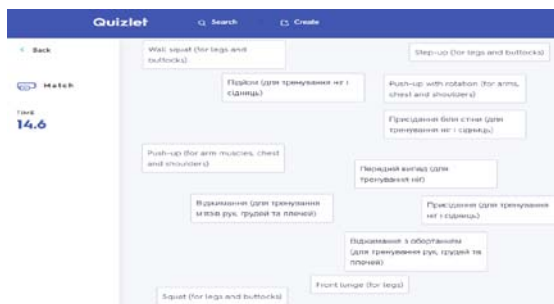


Figure 9a: Screenshot. Game “Match”

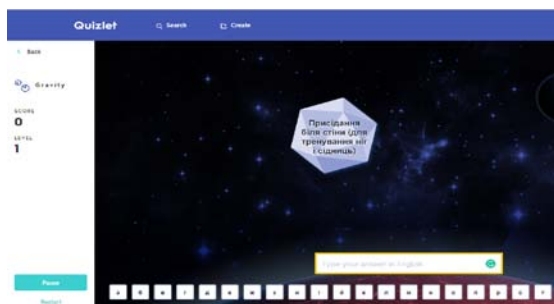


Figure 9b: Screenshot. Game “Gravity”

There was a chance to play live games, but the teachers decided not to overload their students with such activities.

Production. The final stage involved the development of students' productive skills.

Under quarantine, the process of learning foreign languages sometimes loses its communicative nature, but the proposed ICTs can be useful for the development of skills of dialogic and monologue speech as well as skills of professional communication. The basic platform Zoom allows teachers to maintain the communicative nature of learning through the ability to communicate with the whole group and to create rooms for dialogic speech under the supervision of the teacher.

To achieve these objectives we have developed a system of tasks such as role-playing “*therapist – client*” when students practised exactly those exercises and muscle groups, ligaments and body parts that were presented in the video; moreover, a general discussion was always before role-playing in pairs; *case tasks*, when they were creating workouts prescribed by doctors, then recorded them and demonstrated them on the screen for the general discussion.

The Zoom platform makes it possible to design real communicative situations and to promote discipline and respect for classmates. The ability to record and view classes allows students to develop self-correction and peer-correction skills. The use of ICTs not only develops the communication and professional skills of future ergotherapists but also contributes to the improvement of soft skills, which are crucial to a successful professional life in the new socio-cultural environment.

We would like to point out that students used either their PCs or smartphones to complete the mentioned tasks.

At the end of the 2019/20 academic year, we carried out a survey and an interview among the 1st year students (specialty No. 227 “Physical therapy, ergotherapy”) with the purpose to get relevant feedback concerning a series of English classes with ICTs.

According to the survey after the course, students were satisfied with the motor actions they performed at home because they were able to deepen their knowledge of physical therapy and fitness. Thus, modern ICTs, elements of Total Physical

Response were quite harmoniously combined with communicative teaching methods during online English learning.

The following are the constructive comments by future ergotherapists who have watched video content on the *Lumowell* channel related to their specialty and then performed specially designed tasks:

Danylo L., 1st academic year: “*I am a former sportsman and a practising trainer, who is used to studying on my own as there were lots of onsite trainings before competitions. This distant course is a great chance to experience the overseas approaches and insights into the training process. I like the Quizlet tasks and YouTube videos as I can watch them again and practice my language skills as well as master my therapist’s skills. When the quarantine is over, I will use these exercises with my clients at the gym. It is not just language learning it is learning the profession with video support. I like the games “therapist – client” in Zoom rooms where we could write the training programs for simple physical disorders*”.

Olena P., 1st academic year: “*I like tasks within the course titled “Foreign Language”. It is always interesting to me to watch videos about my future profession on YouTube and to perform exercises to practice and remember professional English vocabulary. Authentic videos, clear English speech by presenters and speakers, interesting and challenging exercises developed by the academic staff based on video content motivate me to be competitive in the future on the international labour market due to a high level of English, and not only to focus and go deeper into the world of ergotherapy*”.

Dmytro T., 1st academic year: “*Learning English (professional vocabulary in particular) is vital for us. To be a successful ergotherapist, one must constantly study the best global practices, attend training seminars, and communicate with foreign colleagues, with the English language being the intermediary in this process. Therefore, watching videos and taking a Quizlet test as a form of an extra homework assignment is quite justified*”.

Kateryna M., 1st academic year: “*At first, I was disappointed with the online studying in general as it was inconvenient for me. I am a computer unfriendly person from a small village with a poor Internet connection. However, English classes helped me overcome my fears, the ability to study the material at home with the right speed for me, and the ability to watch videos repeatedly as well as many exercises made me a stronger student. The vlogs we created as well as role-playing we could record with my classmates as home tasks gave me positive emotions and confidence to speak using professional language*”.

4 Conclusions

So, the integration of ICTs into the educational process and learning English by ergotherapists in higher educational establishments of Ukraine is both an interesting and unique challenge. Since today, in the digital age, it gets harder and harder to interest students using conventional teaching tools. That’s why there is an utter necessity to turn computers, laptops, and smartphones into teachers’ assistants. Within the COVID-19 pandemic, the educational process became online. Academic staff of Ukrainian higher educational establishments started using different software not to lose time and engage their students with e-learning.

Thus, we have also motivated future ergotherapists to apply ICTs while English classes. It has been a labour-intensive, but exciting process based on the CLIL approach. Accordingly, we have used the *Lumowell* channel on the YouTube platform. Free online educational platforms as Quizlet and Zoom have helped us to design a variety of tasks and test the understanding of the video content watched.

Literature:

1. Kulichenko AK. Innovatsiynist v osvithomu protsesi zakladiv vyshchoyi medychnoyi osvity [Innovations in the educational process in higher medical educational establishments]. In: Boyarska L, editor. Proceedings of Materials of 1st All-Ukrainian Research and Practice Conference Socio-Ethical and Deontological Problems of Modern Medicine (Non-Medical Problems in Medicine); 2020 Feb 20-21; Zaporizhzhia. Zaporizhzhia: ZSMU; 2020. p. 66-8. Ukrainian.
2. Raheeswari K. Information communication technology in education. JAAR [Internet], 2018 [cited 2020 Mar 20]; 3 (Suppl. 1):45-7. Available from: <https://phoenixpub.org/journals/index.php/jaar/article/view/169/pdf> DOI: <http://dx.doi.org/10.21839/jaar.2018.v3S1.169>.
3. Mordvinova I, Olkhovik A. Pidhotovka studentiv spetsialnosti "Fizychna terapiya" ta "Erhoterapiya" u krayinakh Yevropy [Preparation of students in specialty "Physical therapy" and "Ergotherapy" in countries of Europe]. Pedagogical sciences: theory, history, innovative technologies. 2018; 1 (75): 152-61. Ukrainian.
4. Lyannoy YuO. Profesiyna pidhotovka maybutnikh mahistriv z fizychnoyi reabilitatsiyi u vyshchikh navchalnykh zakladakh: teoretyko-metodychnyy aspekt [Professional training of future masters in physical rehabilitation in higher educational establishments: theoretical and methodological aspect]: [monograph]. Sumy: Sumy State Pedagogical University named after A. S. Makarenko Press; 2016. 566 p. Ukrainian.
5. Zhang J. Technology, research and professional learning: constructing intellectual exchange in the rise of network society. Singapore: Springer; 2018. 150 p. DOI: 10.1007/978-981-13-0818-5.
6. Stevenson D. Information and communications technology in UK schools. An independent inquiry. London: Independent ICT in Schools Commission; 1997. 41 p.
7. Hernandez RM. Impact of ICT on education: challenges and perspectives. Propósitos y Representaciones Ene [Internet]. 2017 [cited 2020 Mar 25]; 5(1): 325-47. Available from: <https://files.eric.ed.gov/fulltext/EJ1139346.pdf> DOI: <http://dx.doi.org/10.20511/pyr2017.v5n1.149>.
8. Scrivener J. Learning teaching: the essential guide to English language teaching. 3rd ed. with DVD-ROM pack. London: Macmillan Education; 2011. 416 p.
9. Harmer J. Essential teacher knowledge: core concepts in English language teaching. Harlow: Pearson Education; 2012. 287 p.
10. Engel A, Coll C, Membrive A, Oller J. Information and communication technologies and students' out-of-school learning experiences. Digital Education Review [Internet]. Jun 2018 [cited 2020 Mar 26]; 33: 130-149. Available from: <https://revistes.ub.edu/index.php/der/article/view/21689/pdf> DOI: <https://doi.org/10.1344/der.2018.33.130-149>.
11. Merriam-Webster. Innovative [Internet]. Merriam-Webster, Incorporated; 2020 [cited 2020 Mar 28]. Available from: <https://www.merriam-webster.com/dictionary/innovative>.
12. Tryus YuV. Innovatsiyni informatsiyni tekhnolohiyi u navchanni matematychnykh dystsyplin [Innovative information technologies in teaching mathematical disciplines]. Bulletin of Lviv Polytechnic National University. 2012; 731: 76-81. Ukrainian.
13. Pavela A-P, Fruth A, Neacsu M-N. ICT and e-learning – catalysts for innovation and quality in higher education. Procedia Economics and Finance [Internet]. 2015 [cited 2020 Mar 30]; 23: 704-11. Available from: <https://www.sciencedirect.com/science/article/pii/S2212567115004098> DOI: [https://doi.org/10.1016/S2212-5671\(15\)00409-8](https://doi.org/10.1016/S2212-5671(15)00409-8).
14. Ryzov OA, Kotlova YuV, Ivanova KO, Levchyk TO. Do pytannya pro psykholohichni ta sotsialni aspekty dystantsiynoho navchannya likariv-pediatriv na pislyadyplomnomu etapi [To the problem of psychological and social aspects of distance learning pediatrician on postgraduate stage]. Medical informatics and engineering. 2016; 2: 33-6. DOI: <https://doi.org/10.11603/mie.1996-1960.2016.2.6479>. Ukrainian.
15. Ivankova NA. Formuvannya zmistu informatsiynokomunikatsiynoyi kompetentnosti maybutnikh likariv yak elementa yikhnoyi profesiynoyi pidhotovky [Development of the

- content of information-communicative competence of future doctors as a part of professional training]. Scientific Bulletin of National Pedagogical Dragomanov University. Series 5: Pedagogical Sciences: Current Situation and Trends: Collection of Scientific Researches. 2019; 66: 83-90. Ukrainian.
16. Marsh D. CLIL/EMILE – the European dimension: actions, trends and foresight potential [Internet]. Finland: University of Jyväskylä; 2002 [cited 2020 Jun 30]. 204 p. Available from: <https://jyx.jyu.fi/dspace/handle/123456789/47616>.
17. Gajo L. Linguistic knowledge and subject knowledge: how does bilingualism contribute to subject development? International Journal of Bilingual Education and Bilingualism. 2007; 6: 4-14.
18. Polyezhayev YuH. Vykorystannya metodyky CLIL u vykladanni inozemnykh mov u vyshchii shkoli [Using the CLIL methodology in teaching foreign languages in higher education]. In: Pohrebna V. Society and personality in modern communication discourse: materials of the All-Ukrainian scientific and practical conference; 2018 Apr 9-10; Zaporizhzhia. Dnipro: LIRA; 2018. p. 454-6. Ukrainian.
19. Frumkina A, Diachenko M, Polyezhayev Yu, Savina N, Hadi F. Readiness of future teachers for integrated teaching of educational subjects in foreign language. Práxis Educacional, [S.l.] [Internet]. Jan 2020 [cited 2020 Jun 28]; 16(38): 502-14. Available from: <http://periodicos2.uesb.br/index.php/praxis/article/view/6023/45> DOI: <https://doi.org/10.22481/praxisedu.v16i38.6023>.
20. Bentley K. The Teaching knowledge test: course content and language integrated learning module. Cambridge: Cambridge University Press; 2016. 124 p.
21. Negoescu A, Boștină-Bratu S. Teaching and Learning Foreign Languages with ICT. Scientific Bulletin [Internet]. 2016 [cited 2020 Mar 30]; 1(41): 21-7. Available from: [https://content.sciendo.com/configurable/contentpage/journals/S002fbsaft\\$002f2f21\\$002f1\\$002farticle-p21.xml](https://content.sciendo.com/configurable/contentpage/journals/S002fbsaft$002f2f21$002f1$002farticle-p21.xml) DOI: <https://doi.org/10.1515/bsaft-2016-0032>.

Primary Paper Section: A**Secondary Paper Section: AM**

EXPERIENCES AND EXPECTATIONS OF STUDENTS AND TEACHERS IN THE FIELD OF USING E-LEARNING IN MUSIC EDUCATION

^aLIBOR FRIDMAN, ^bŠTEFAN PETRÍK, ^cPAVEL MARTINKA
^dMICHAL BRODNIANSKY

*Matej Bel University, Faculty of Education, Ružová 13, 974 11
Banská Bystrica, Slovakia*

*email: ^alibor.fridman@umb.sk, ^bstefan.petrik@umb.sk
^cpavel.martinka@umb.sk, ^dmichal.brodniansky@umb.sk*

The paper was developed with support under the KEGA project no. 020UMB - 4/2018
Creation of electronic teaching aids for music education in the secondary education.

Abstract: The paper reports a part of the results of a broader research, in which the evaluation of e-learning by music teachers was examined. As a part of the paper, we are presenting the research findings on the views of music teachers (n = 238), but also future music teachers - students (n = 117) on e-learning, perception of the use of electronic media and their effectiveness in the implementation of music education. The results of the empirical research confirm the openness of both music education teachers and students to these innovations in Music education, which are implemented through the use of e-learning and e-textbooks.

Keywords: e-learning, music education, electronic textbook, music art

1 Introduction

The present is characterized by the entry of electronic media and electronization into every area of our life. The electronic media are "modern means of communication and expression built on electronic technology - television, radio, internet, sometimes including video, DVD and the latest mobile phone." (Mistrík, 2013) We use electronic elements in material form and in the form of user software and various forms of utility and entertainment applications. In everyday reality, we can observe the use of these resources throughout all generations, as well as the age group of all students. The frequent use of electronic means, regardless of their necessity or importance for the formation of personality, points to the high potential of using these technologies in the educational reality. The didactics of music art thus faces the challenge of implementing these new means into the educational process as its common part. The innovations in this direction are one of the tasks of innovative tendencies of didactics.

1.1 The concept of the e-learning in the USA

The origin of e-learning can be found in the USA, which was at the forefront of this new trend in the use of electronic means, and gave rise to several types of e-learning (according to Zlámalová, 2008, p. 128-129):

1. computer-assisted education (CBT computer-based training)
2. providing information, training materials and educational content through the various forms of the electronic media (internet, intranet, extranet, CD-ROM, satellite broadcasting, audio- or videotape, interactive TV)
3. technology-supported education (technology-based training)
4. e-learning understood as a subgroup of distance education - the principle is the interaction between the student and the source of information, which is physically stored in a distant location
5. e-learning which is understood as the education with the assistance of the web technologies (web-based training)
6. e-learning as a tool using network technologies to create, distribute, administrate and constant update of the educational materials

Thanks to the rapid development of the informatization, the USA has a leading world position in this field. This evaluation, which takes the example of the United States and Canada, summarizes policies, development plans, and major projects for the informatization of the education that have recently been introduced and are being implemented by governments. After a chronological comparison of all the policies and projects, we

find four important features of the informatization of the education in the USA and Canada:

1. constant promotion of the development and transformation of the informatization infrastructures
2. focus on the increasing ability of teachers to computer-based teaching
3. paying attention to the research of the standards of education informatization
4. implementation of the strategies of education informatization leading to equality

1.2 The concept of the e-learning in the Europe

The use of ICT in education is also explained in details by a group of international organizations such as the OECD, UNESCO, the EU and its EURYDICE department, an information network on education in Europe, set up by the European Commission and Member States in 1980. (Brozmanová, 2015). Eurydice has published a publication *Information and Communication Technology in European Education Systems*, stating that the concept of ICT in education includes computers, a computer network, multimedia and other technical means. At the same time, we understand ICT as a tool or a source of education, not as a subject of study. (Eurydice 2001) The European Commission defines e-learning (digital education) in two levels:

1. development of the digital competences by pupils / students and teachers
2. educational use of the digital technologies to support and improve teaching, learning and evaluation.

The European Commission's Digital Education Action Plan for 2018 formulates e-learning as "a way to make better use of innovation and digital technologies in education and training systems and to support the development of digital competences needed to live and work in a time of rapid digital change" (Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions on the Digital Education Action Plan, COM/2018/22 final).

The United Kingdom is among the countries of the European Union that support the development of the computer-based learning at schools, where a five-year government program has begun in 1997. *National Grid for Learning*. The following results are expected there:

- all teachers will master and use ICT,
- all educational institutions will be connected to the National Network for Education,
- most urban centers will be connected to the National Education Network,
- 75% of all teachers and 50% of all pupils and students will have their e-mail
- mailbox,
- all school graduates will be competent and able to use ICT,
- communication between schools and school authorities will be exclusively electronic.

Finland connected all schools and public libraries to the Internet by the end of 2000, the French government adopted a three-year plan to introduce ICT in schools in 1997. (Blek, Semrádová, 2004)

1.3 E-learning in the context of the Slovak cultural environment

In Slovakia, the creation of the Infovek project has been the first step toward the successful use of ICT in the teaching process, and the most of the work also refers to it. The project was established in 1999 as a result of the activities of a non-profit organization

called the Infovek Project Association for the purpose of modernizing and supporting the teaching process using ICT. Katarína Mandíková, Tibor Papp, Martin Hauptvogel and Peter Sýkora are its founding members. The first Infovek 1999 conference took place on 14 January 1999 and then was sponsored by the Chairman of the NRSR. The conference was attended by top government officials, experts from universities and executives of companies in the field of ICT. The vision of the project was presented for the first time at the conference and there was a rich discussion between all the participants. (Brezina, 2009) Outside Europe, the United States are the one of the countries with a flexible response in the field of computer technology development, where there are the most organizations dealing with computer-assisted learning. Leading American expert in computer-assisted teaching, Sam Reese, states that 78% of American students aged 10 to 17 already had a computer at home in 2001 and 73% of them had direct access to the Internet. In comparison to Slovakia in 2006, only 26% of pupils were connected to the Internet at home, the difference is significant. The number and scope of the publications published on computer-assisted music education also dominates the United States, and yet the authors often wonder to what extent it is necessary to use a computer in the teaching process. (Brezina, 2009).

In addition to foreign authors, ICT in the education has also been defined by Slovak authors Kučerová and Pálušová, who describe information technologies as "computing and communication tools that support study and other activities in the field of education." (Kučerová, Pálušová 2006, p. 250). In 2006, there are ideas that support the use of ICT during the educational process and define ICT as supporting components that help to increase the quality and effectiveness of the education. The authors see the importance of using the technologies mentioned above and try to categorize them as modern teaching aids which teachers will work in the future with.

Thus, ICTs are technologies that are in some ways related to the collection, recording and exchange of information. They use these activities:

- personal computers with multimedia support,
- means of digitization,
- internet and its services,
- e-mail,
- the media (television, video, radio)
- integrated educational programs and others (Kučerová, Pálušová 2006)

In recent years, in the professional literature, we frequently encounter the concept of digital technology, which includes an information component (information acquisition) and a construction component (knowledge construction). (Šašala, 2017) Kalaš understands digital technologies in the context of education as a synonym for information and communication technologies, ie as "a wide range of means, tools, environments and procedures (coming from the field of computers) that we use to support learning and learning, communication and collaboration, expression, creation, etc., ie for the comprehensive support of all developmental domains of children, students and learners of all ages", so it highlights the "design side of new technologies for the development of the design aspect of the cognitive process." (Kalaš 2013, p. 14)

Jiří Zounek defines digital technologies as "a product of human culture and technology co-creating the current society and life of all people, and thus life in schools. Technology is not neutral, because it has already caused many changes in education and enabled activities that would not be possible without technology." (Neumajer, Rohlíková, Zounek 2015, s.15)

When implementing ICT in education, it is therefore necessary to perceive these two levels as inseparable and interdependent. Technologies will be part of society forever, and therefore we consider it appropriate to use them as aids in the educational process. The school, as an educational institution, has always been the most effective facility designed to educate as many

people as possible. With its working methods, it must adapt to the newly created conditions, in the form of ICT, otherwise there is a risk that new information and communication technologies will surpass it. (Koreňová 2000) Eger (2004) characterizes e-learning as computer-based education, web-based education, internet-based education, and real-time communication using computer and internet-based communication. According to J. Zounek, e-learning is "an educational process in which ICTs working with data in electronic form are used. The way in which ICT is used depends primarily on the goals and content of the education, the nature of the educational environment and the possibilities of all actors in the educational process." (Zounek, 2006, s. 400) *Resource-based learning* puts technology (such as multimedia, the Internet) at the forefront as a source of information and completely replaces the teacher in this position.

ICT is also important in so-called blended learning, which is a combination of full-time and distance learning. Examples of blended learning can be seminars combined with video conferencing, courses with a permanent e-mail connection, etc. (Brozmanová 2015) Also videoconferences have become very popular, especially in the tertiary education. They allow you transferring the lectures to any distance. Such interactive communication ensures the transmission of audio and video (video) in real time. ICTs make it possible to shift the teacher-student communication channel from the traditional transmission and reception to a modern collaboration and so discover new information. As a result, a student can work independently, at an individual pace, choose their own procedures (develop logical thinking), the sources of information (develop critical thinking, determine availability, conduct the first research), voluntarily cooperate with classmates (cooperation, comparison), present their results (presentation skills, feedback.). From the point of view of didactics, a teacher can act as a coordinator of their students, a counselor, or a tutor. The individual work of a student with the use of ICT allows teacher to devote more time to individuals or groups, to have a more effective approach to individual feedback, diagnosis or evaluation.

2 Music Education in the context of the use of ICT - Music education in the context of e-learning

Since its formation as a separate subject, music education has undergone several changes, reflecting mainly technological development. The initial form of music education was also reflected in its name - singing, where the students or teachers were the only source of music. At this stage, music education had a distinctly active character. This was later weakened due to the development of communication technologies. A significant achievement was the introduction of listening to the music in education in 1960.

Music education faces a challenge in the field of its innovation and modernization, which arises from the further development of technologies and their possibilities. Although these are gradually being implemented in the educational process, their potential has not still been fully exploited. Presentations (powerpoint, prezi and others) have already been a common part of teaching today, but in comparison with the current modern means they only replace the "paper" form of the textbook to the use of some aesthetic effects and do not have a significant impact on improving the quality of education. "*Institutionalized education should not be stylized either in the position of opponents who believe that social networks are just a fad, nor in the position of enthusiasts who are eager to take advantage of the new trend, but rather try to understand this new medium in favor of new opportunities to work with web, to place it in the context ...*" (Vrábľová, L. 2013, p. 76. In Fridman et al. 2013) needs of music education. The reflection of these changes is also constituted in the cross-sectional topics of the ISCED State Educational Program: media education, personal and social development, project creation and presentation skills. The issue of implementing ICT in music education has so far been addressed by several personalities (Belo Felix, Eva Langstejnová, Jaroslav Herden, Marián Janek, Hana Váňová, Libor Fridman, Lubomíra Vrábľová, Oľga Brozmanová, on a

global scale e.g. Uwe Buermann, M. Salavuo, K. Jenningsa and others). The research brings mostly positive results in contradiction with some negatives or indifferent results (Vrábl'ová, In Fridman, 2013), which put us ahead of the next task of finding the causes of failure in the innovated models and the possibility of eliminating possible shortcomings.

The curriculum as a carrier of information that the student works with is standardly differentiated into three qualitatively and quantitatively different forms: basic, key and expanding. Compared to classic textbooks, the e-learning platform allows us to organize this material logically without the student or teacher being distracted by the other content. The organization of the curriculum must respect the educational goals and their taxonomic levels. Classical, paper, textbooks contain such a structured subject matter, but it is limited by a two-dimensional graphic presentation, which must include all items on the same surface of the medium. The E-learning allows us to structure the curriculum according to the requirements of individual taxonomic levels without the processes and tasks (and especially the materials needed for this) related to the fulfillment of higher taxonomic levels to draw our attention to the problem just solved.

However, what we must emphasize in the creation of electronic textbooks is the active nature of the process of music education, which is its essence. Music education cannot be limited to the passive reception of information from a graphically attractive visual media platform. So far, we have commented mainly on the arrangement of content recorded graphically (written text, sheet music) or auditory (audiovisual) in the case of musical samples or entire compositions.

While adhering to the principle of activity, the creation of electronic learning material raises a fundamental question of the overall concept of the final product. Based on the didactic concept of L. Fridman (2013), we present three types of information on the music educational process:

1. musical information (primarily, dominant in the music-educational process, their essence is music in its sound form)
2. music-related information (information with a direct link to music - a specific work / phenomenon. In particular, it is didactically processed musicological information defined in the contents of music theory, history, aesthetics, etc.)
3. non-musical information (information of a motivational nature with a historical and general-Educational context) (according to Fridman, L. 2013, s. 7)

For the needs of music education, it is necessary to select content so that it is primarily focused on music (musical information) as a phenomenon and not on information about music, or just related to music. „*Music as a subject of cognition and education contains elements that can be analyzed and defined objectively on the basis of artistic-scientific and aesthetic-professional criteria.*“ (Fridman, 2013, p. 7) In connection with this, it is necessary to select the content to be functional in fulfilling educational goals.

3 Research methodology

The frequent use of the electronic means in the field of education sets a great challenge to the didactics of music art in the implementation of new means into the educational process. Adequate use of the innovations and their relevant implementation in the teaching of music education, e.g. in the form of electronic textbooks is highly dependent on current as well as future teachers of music education. Based on the facts

mentioned above, our goal was to examine the differences of the opinion between the music education teachers and music education students (hereinafter referred to as students) on the use of e-learning and electronic textbooks in music education. Based on the set goal, we focused on the following research questions within the implemented research:

Q1: Is there a difference in the perceptions of the e-learning in music education between music education teachers and students?

Q2: Is there a difference of the opinion between teachers and students regarding to the use of e-textbooks in teaching music education?

Q3: Is there a difference in the perception of the effectiveness of e-textbooks between music education teachers and students?

3.1 Characteristics of research methodology

We were collecting the empirical data from pedagogical staff in December 2019 to September 2020 throughout our own questionnaire containing the items focused on perceptions of the effectiveness of e-textbooks, opinions on the use of e-textbooks in music education and perceptions of e-learning in music education. When designing the scales, we used Fridman (2013), who has categorized e-learning tools within music education. When respondents perceived the effectiveness of the electronic textbooks, we used a scale of: 4 - completely effective, 3 - effective, 2 - inefficient, 1 - completely ineffective. For the opinions concerning the use of electronic textbooks in teaching music education, we used a range of: 4 - strongly agree, 3 - agree, 2 - disagree, 1 - strongly disagree. To determine the perception of e-learning in music education, we used a scale of: 4 - strongly agree, 3 - agree, 2 - disagree, 1 - strongly disagree.

3.2 Characteristics of the research sample

The research sample consisted of a total of N = 355 respondents, of which n = 238 teachers of music education and 117 students - future teachers who complete courses in the field of music education. When selecting respondents, we used an available selection, the questionnaire was distributed online. The average age of the research sample of music teachers was (AM = 34.64), while the average age of students (AM = 20.36). In the research group of teachers, the largest group consisted of teachers working in primary schools (AM). Respondents in terms of the length of pedagogical practice were mostly in the range of years: 21-23 years (65.1%), 24-26 years (50.4%) 17-20 years of experience (39.9%). The research sample of students consisted of 61% of bachelor's degree students and 39% of master's degree students, 79% of female respondents and 21% of male gender.

4 Results of the empirical findings

In the research, we focused on a finding the difference between music education teachers and students: in the perception of the effectiveness of electronic textbooks (ET), in the opinions on the use of e-textbooks in teaching music education, in the perception of e-learning in music education. We are presenting the results of empirical research in T1 to T3.

We are presenting the results of empirical research in Tables T1 to T3. They have used the methods of descriptive and inferential statistics to process the obtained empirical data. The normality of the division of the research set and sub-sets was verified using the Kolmogorov-Smirnov and Shapir-Wilk test ($p < 0.05$). Since the examined variables have not shown the normality of the distribution for the file and subfiles, we used the nonparametric significance test of the Mann-Whitney U test.

Table 1: The Opinion on e-learning in teaching of music education

Teachers vs. students		Teachers	Students	MannWhitney U test	P- value
The Opinion on e-learning in teaching of music education					
E-learning is a more effective way of teaching theoretical subjects than a classic lesson	N	238	117	11544.500	.004
	AM	3.56	2.79		
	Me	4.00	3.00		
	SD	0.707	0.726		
	Min	1	1		
	Max	4	4		
E-learning is a more effective way of teaching practical musical (singing, playing, dancing, ...) activities than a classical lesson	N	238	117	12085.000	.029
	AM	3.46	2.26		
	Me	3.00	2.00		
	SD	0.790	0.760		
	Min	1	1		
	Max	4	4		
E-learning gives me more options than printed publications	N	238	117	13691.000	.766
	AM	2.87	2.91		
	Me	3.00	3.00		
	SD	0.659	0.629		
	Min	1	1		
	Max	4	4		
E-learning wastes my time	N	238	117	13850.500	.928
	AM	2.18	2.19		
	Me	2.00	2.00		
	SD	0.711	0.642		
	Min	1	1		
	Max	4	4		
E-learning makes it easier for me to orientate myself in the issue	N	238	117	13656.500	.708
	AM	2.85	2.85		
	Me	3.00	3.00		
	SD	0.583	0.596		
	Min	1	1		
	Max	4	4		
E-learning makes my learning process easier	N	238	117	13880.500	.956
	AM	2.83	2.84		
	Me	3.00	3.00		
	SD	0.656	0.707		
	Min	1	1		
	Max	4	4		
E-learning increases my demands for the preparation	N	238	117	12768.000	.164
	AM	2.08	2.31		
	Me	2.00	2.00		
	SD	0.625	0.688		
	Min	1	1		
	Max	4	4		
E-learning distracts me from the meaning of the subject	N	238	117	11428.500	.001
	AM	1.56	2.74		
	Me	1.00	3.00		
	SD	0.943	1.409		
	Min	1	1		
	Max	5	6		
E-learning will help me better prepare for teaching	N	238	117	12131.000	.022
	AM	3.84	2.68		
	Me	4.00	3.00		
	SD	0.634	0.739		
	Min	1	1		
	Max	4	4		

Legend: AM – arithmetic mean, Me – median, SD – standard deviation, Min – minimal value, Max – maximal value
 Scale used: 4 - strongly agree, 3 - strongly agree, 2 - disagree, 1 - strongly disagree

In the first research area, we focused on finding differences of opinion on e-learning in teaching music between music teachers and students of music art teaching. From T1 it can be observed that a statistically significant difference ($p = 0.004$) was confirmed in the field of perception of e-learning as a more effective way of teaching theoretical subjects than a classical lesson. The students achieved a lower average score and median (AM = 2.79; Me = 3.00) than the music teachers (AM = 3.56; Me = 4.00). There is also a statistically significant difference between the respondents ($p = 0.029$) in the area of perception of

the e-learning as a more effective way of teaching practical musical activities (singing, playing, dancing, ...) than a classical lesson. The music education teachers achieved higher average scores (AM = 3.46) and medians (Me = 3.00) than the students (AM = 2.26; Me = 2.00). The music education teachers do not perceive the e-learning as distracting from the meaning of the subject (AM = 1.56; Me = 1.00). The students had different opinion, as it is evidenced by the average score achieved (AM = 2.74) and median (Me = 3.00). The mentioned differences in the perception of e-learning as a distracting element from the

meaning of the subject among the respondents are statistically significant ($p = 0.001$). In the area of perception of e-learning as an aid in the better preparation for teaching, there are statistically significant differences between the respondents ($p = 0.022$). The teachers perceive e-learning as an aid in preparing for teaching to a greater extent ($AM = 3.84$; $Me = 4.00$) than students ($AM = 2.68$; $Me = 3.00$).

Table 2: Area of using electronic textbooks in teaching of music education

Teachers vs. students		Teachers	Students	MannWhitney U test	P – value
Area of use of the electronic textbooks (ET) in teaching of music education					
music theory	N	238	117	11384.000	.001
	AM	3.12	2.91		
	Me	3.00	3.00		
	SD	0.667	0.731		
	Min	1	1		
	Max	4	4		
means of expression of music	N	238	117	11538.000	.002
	AM	3.13	2.91		
	Me	3.00	3.00		
	SD	0.676	0.677		
	Min	1	1		
	Max	4	4		
history of music	N	238	117	12255.500	.036
	AM	3.30	3.17		
	Me	3.00	3.00		
	SD	0.644	0.620		
	Min	1	1		
	Max	4	4		
modern popular music	N	238	117	11792.500	.008
	AM	3.37	3.19		
	Me	3.00	3.00		
	SD	0.655	0.681		
	Min	1	1		
	Max	4	4		
singing	N	238	117	9513.500	.000
	AM	2.71	2.24		
	Me	3.00	2.00		
	SD	0.844	0.773		
	Min	1	1		
	Max	4	4		
instrumental play	N	238	117	9378.000	.000
	AM	2.66	2.18		
	Me	3.00	2.00		
	SD	0.830	0.795		
	Min	1	1		
	Max	4	4		
musical interpretation	N	238	117	10623.000	.000
	AM	2.83	2.35		
	Me	3.00	2.00		
	SD	0.740	0.771		
	Min	1	1		
	Max	4	4		
other interpretation of music	N	238	117	10970.500	.000
	AM	2.88	1.83		
	Me	3.00	2.00		
	SD	0.692	0.647		
	Min	1	1		
	Max	4	4		
By the fixation of music-theoretical competencies	N	238	117	11390.000	.001
	AM	3.46	2.97		
	Me	4.00	3.00		
	SD	0.658	0.586		
	Min	1	1		
	Max	4	4		

Legend: AM – arithmetic mean, Me – median, SD – standard deviation, Min – minimal value, Max – maximal value
Scale used: 4 - strongly agree, 3 - strongly agree, 2 - strongly disagree, 1 - strongly disagree

In the next research area, we focused on comparing the points of view of the music education teachers and students on the use of the electronic textbooks in music education. From the empirical data presented in T2, it is observable that there is a statistically significant difference between the respondents in all areas examined, namely in the field of teaching: music theory ($p = 0.001$; AM = 3.12; 2.91; Me = 3.00), expressive means of music ($p = 0.002$; AM = 3.13; 2.91; Me = 3), history of music ($p = 0.036$; AM = 3.30; 3.17; Me = 3), singing ($p = 0.000$; AM = 2.71; 2.24; Me = 3.00; 2.00), instrumental play ($p = 0.000$; AM = 2.66; 2.18; Me = 3.00; 2.00), musical interpretation ($p = 0.000$;

AM = 2.83; 2.35; Me = 3.00; 2.00), another interpretation of music ($p = 0.000$; AM = 2.88; 1.83; Me = 3.00 ; 2.00) and also in the fixation of music-theoretical competencies ($p = 0.001$; AM = 3.46; 2.97; Me = 4.00; 3.00). In the context of the above-mentioned average scores and medians, we can state that the most significant differences between the music education teachers and students in the perception of the use of the ET in music education exist in the areas of teaching singing, instrumental playing, music interpretation, other interpretation and the fixation of music-theoretical competencies.

Table 3: Perceived effectiveness of electronic textbooks in music education

Teachers vs students		Teachers	Students	MannWhitney U test	P – value
The effectiveness of the electronic textbook in music education					
ET containing exclusively digitized text	N	238	117	10576.500	.000
	AM	3.78	2.46		
	Me	4.00	3.00		
	SD	0.715	0.574		
	Min	1	1		
	Max	4	4		
ET containing text with images and digital graphics directly in the text.	N	238	117	11678.000	.001
	AM	2.89	3.49		
	Me	3.00	4.00		
	SD	0.582	0.538		
	Min	1	2		
	Max	4	4		
ET containing text using digital display means different from a text editor.	N	238	117	13624.500	.673
	AM	2.87	2.92		
	Me	3.00	3.00		
	SD	0.584	0.544		
	Min	1	2		
	Max	4	4		
ET containing text and embedded stable multimedia resources (music, images, videos, animation, graphics)	N	238	117	13601.500	.687
	AM	3.30	3.36		
	Me	3.00	3.00		
	SD	0.657	0.549		
	Min	1	2		
	Max	4	4		
ET containing text and hypertext links to various information and media links	N	238	117	13656.000	.737
	AM	1.69	3.79		
	Me	1.00	4.00		
	SD	1.061	1.063		
	Min	1	1		
	Max	5	6		
ET without text dominance using illustrative and presentational means of content processing.	N	238	117	13592.000	.663
	AM	3.02	3.00		
	Me	3.00	3.00		
	SD	0.630	0.630		
	Min	1	1		
	Max	4	4		
ET as a complete interactive model of cognition and learning (a completely different principle than the printed form).	N	238	117	12216.500	.034
	AM	3.12	3.97		
	Me	3.00	4.00		
	SD	0.665	0.706		
	Min	1	1		
	Max	4	4		
ET in the form of a didactic test	N	238	117	13162.500	.323
	AM	2.88	2.83		
	Me	3.00	3.00		
	SD	0.692	0.647		
	Min	1	1		
	Max	4	4		

Legend: AM – arithmetic mean, Me – median, SD – standard deviation, Min – minimal value, Max – maximal value

Scale used: 4 - fully efficient, 3 - effective, 2 - inefficient, 1 - completely inefficient

In the last research area, we focused on finding differences between the music education teachers and the university students in the field of opinion on the effectiveness of e-learning music textbooks. From the empirical data presented in T3, it is

observable that there is a statistically significant difference ($p = 0.000$) between the university students and the music education teachers in the area of perception of ET effectiveness, which contain exclusively text in digitized form. Teachers perceive an

ET containing exclusively digitized text to a greater extent than students. The difference in the perception of ET effectiveness among the respondents is indicated by the achieved average score (AM = 3.78; 2.46), as well as the median (Me = 4.00; 3.00). A statistically significant difference ($p = 0.001$) was also confirmed in the area of perception of the ET containing text with images and digital graphic elements directly in the text. The students achieved higher average arithmetic mean and median scores (AM = 3.49; Me = 4.00) than the music education teachers (AM = 2.89; Me = 3.00). The electronic textbook as a complete interactive model of cognition and learning (a completely different principle as the printed form) is perceived by both students and teachers of music education as effective. However, there is a statistically significant difference in their degree of perception of the effectiveness of the mentioned type of electronic textbook ($p = 0.034$). The students in this area expressed a higher level of perceived effectiveness (AM = 3.97; Me = 4.00) than the teachers of music education (AM = 3.12; Me = 3.00).

5 Discussion

ICT has been the subject of global research in the field of educational effectiveness and innovation since its inception in the educational process (Crook, 1998; Roussos, 1997; Seddon and Biasutti, 2009). From the beginning, scientists and teachers pointed out the possibilities and potential of e-learning in the field of increasing opportunities in music education (Digolo, AB & Adang, EA & Katuli, J. 2011, Illés, Pšenáková, Heizlerné-Bakonyi 2008, Faghil Azadehfar, Kateby 2013, Lecon, Hermann 2020, Freebern 2020). The anthology of the research of the projects on the use of e-learning in music by Eiksund & Angelo & Knigge (2020) is the result of these efforts. These projects are broadly focused: teaching instrumental music, composition, music, sound, conducting an ensemble, technology - network presence, electronic music (Eiksund & Angelo & Knigge 2020). The authors bring an exciting view of music education and disrupt the existing stereotypical view of music and music production. In terms of these researches, we considered it important to identify differences in views on e-learning, the use of e-textbooks in music education and opinions on the effectiveness of e-textbooks between the music teachers and students.

In the first research area, we focused on finding differences of opinion on the e-learning in the teaching of music education between music education teachers and students. The e-learning is perceived by music education teachers as a more effective way of teaching theoretical subjects compared to classical lessons. Teachers seem to be aware of the need to innovate music education. The positive impact of the use of ICT for achieving the educational goals of music education is confirmed by the research of Baker (2011, 2012), Brozmanová (2013), Vrábřlová (2013), Ruokonen and Rusimäki (2016), Freebern (2020). Other research findings showed that students do not perceive the e-learning more effective in teaching practical musical (singing, playing, dancing, ...) activities than a classical lesson. In our opinion, this is due to the fact that students cannot imagine teaching practical activities (singing, playing, dancing, ...) through e-learning, but teachers are also aware of the need for innovation in this area. In this context, we consider it important to mention the research of teachers' opinions on e-learning in comparison with full-time teaching in aesthetically-oriented subjects, carried out by W. Baker (2012). The analysis of these data found out that teachers considered e-learning in art education to be very different from personal teaching, and also found different perceptions of equal opportunities for students in this mode, e.g. the online unit has been successful in preparing students to teach art at schools and in their active involvement (Baker, 2012). This confirms the unfounded concern of the research sample of our students. The mentioned contribution by W. Baker (2012) further highlighted important topics in the perception of e-learning of teachers in art education. These provide the researcher with an additional perspective to obtain data and further contribute to the understanding of more extensive empirical data on students' experiences in the same

field. These findings are consistent with knowledge about preschool teachers, the importance of student involvement for students' success in the educational process (Baker & Pittaway, 2012) and the usefulness of videos in e-learning in art education (Baker, 2011 and). The perception of the differences between online and full-time teaching in art education, and in particular the problems associated with the potential for personal contact requires further direction in the field of design concepts for education and course creation, as well as research. The participation of students in the success that is the result of their personal potential and precepts embodied in student art and music is a critical task. This success is also a means of bridging the differences between individuals in the classroom, which provides interesting starting points for the goals and innovative design of the training course and research.

From empirical data, we also found out that teachers, unlike students, do not perceive e-learning as a distracting element of music education and perceive it more as an aid in better preparation for teaching. The use of e-learning can not only help them with preparation but also support the focus on teaching and it is also confirmed by research into the use of e-learning for students of e-learning disabilities Williams and Hanson-Baldauf (2010), who found out that people with *mild learning difficulties can be adept with web technology and music*. In dyslexia, rhythmic exercises are mainly used to understand the musical content (Heikkilä & Knight, 2012) and multimedia content in IMLO learning and in exercises (R. S. Fadilahwati Abdul Rahman, Fattawi Mokhtar, Nor Aziah Alias, 2012). Doyle and Arnedillo-Sánchez (2011) explored the possibilities of the influence of technology and the use of multimedia content on the formation of personalized social stories of children with autism. The findings of research has revealed an individualization of social stories (Drigas, Paraskevi 2016). Musical activities in the environment of virtual reality contribute to the social and emotional development as well as to the overall positive impact on individuals with autism (Lima, Castro, 2012). Based on this, taking into account our research findings, we consider the respondents' concerns to be unfounded and attribute them rather to the fact that they have not yet had relevant experience for the use of e-learning in music education.

In the second research area, we focused on finding a difference in opinions on the use of electronic textbooks in teaching music education. We managed to find out the most significant differences between music education teachers and students in the areas of teaching singing, instrumental playing, musical interpretation, other interpretations of music and the fixation of music-theoretical competencies. In all the mentioned areas, teachers, unlike students, has perceived the usability of electronic textbooks in teaching music education. We think this may be due to teachers' years of experience in teaching music education and so being open to the innovation through the use of ICT. As part of innovation, the use of electronic textbooks in teaching in the areas of music theory as well as the means of expression of music, music history, modern popular music, singing, instrumental play, musical interpretation, other music interpretation, but also in fixing music-theoretical competencies. These are the teachers of music education who have the task of showing how to implement effectively an electronic textbook in such areas of music education that students cannot imagine on the basis of research findings. These areas are singing, instrumental playing, musical interpretation, other interpretation of music and fixation of music-theoretical competencies. The research of Inkeri Ruokonen and Heikki Ruusmäki (2016), who investigated the use of e-learning in the field of group music composition, also confirm that we find justification for the implementation of electronic books in the mentioned areas of music education. Their case study on a sample of 16 students explored the possibilities of creation a new mixed technology e-learning environment in the field of composition under the guidance of the present teacher. The biggest benefit of blended learning is the offer of several opportunities for independent and constructive education. The result of the research was that the greatest contribution was recorded by students with previous music education. The use of information and ICT has increased

students' attitudes towards independent learning about their musical skills. „*Traditional face-to-face based contact and contentis always precious in music education, but blended learning with individual choices and enrichment can make it more dynamic and effective for a learner.* (Ruokonen, Ruismäki, 2016). The effectiveness of this mixed teaching is manifested especially in creative activities and planned group processes. This is confirmed by the research of Seddon and Biasutti, who explored the possibilities of using e-learning in the field of instrumental piano playing and creating their own 12-bar blues (Seddon & Biasutti, 2009). When learning the instrumental game, the effectiveness of Music Informational Retrieval was verified, within which 3 types of applications were developed and evaluated: Automatic Music Transcription of Arabian Woodwinds, MIR to serve Arabian Composition, and „query-by-playing“ for Musical Libraries (Al-Ghawanmeh, M. T. & Haddad, R. N. & Al-Ghawanmeth, F. M. 2009). During the practice of playing the piano, the most effective evaluation came out blended real-time and time-shifted forms of communication (Shoemaker & Stam 2010).

In the last research area, we managed to find out that teachers perceive electronic textbooks, which contain exclusively a text in its digitized form, as less effective than students. We assume that teachers, due to the higher level of experience that they have managed to gain during the years of teaching music education, perceive electronic textbooks which contain only the text in its digitized form, therefore to a greater extent as effective because they do not have an adequate level of experience with e-learning textbooks. Because of several years they only worked with the print textbooks. For this reason, we assume that an electronic music textbook containing exclusively text in its digitized form will represent the smallest and perhaps most acceptable change for teachers to be compared to print versions of music education textbooks. This assumption is also confirmed by Hebert (2007, In Kamla-Raj, 2015) who states that music education is one of the disciplines that has not yet adapted to online learning. Much of the research, therefore, deals with the effectiveness of e-learning compared to face-to-face teaching (Hartley, 2007, Anvarovna Zaripova, 2018). On the contrary, students perceive electronic textbooks containing exclusively text as less effective, which in our opinion indicates that they expect a higher degree of innovation and change from the process of using electronic textbooks in music education. This is confirmed by other research results. In electronic textbooks containing text with images and digital elements directly in the text, we were able to find that students expressed a higher level of perception of effectiveness than teachers. In our opinion, this may be due to the fact that current students spend a significant amount of their free time on mobile phones, on which they use applications and social networks using pictorial elements in texts as a method of making the virtual environment more attractive. This experience may be required by students also in the educational process, when teaching music education through the electronic textbooks containing text with images and digital graphics, this condition is the attractiveness of the text, respectively. curriculum fulfilled. However, the readiness of students to work with similar electronic textbooks remains a question. In this context, Kamla-Raj (2015) addressed the preconceptions of future teachers in the field of ICT use and their readiness. He found out that the level of students' self-effectiveness in working on a PC is low, but he found higher values in working with mobile technologies. In the field of ICT literacy of students, Brozmanová (2013) also found out an insufficient level of ICT competencies. However, the motivations for these activities are very high, which increases the assumption of progress both within ICT competencies and the assumption of effective use of electronic textbooks in the teaching of music education. Students also perceive a higher degree of efficiency in electronic textbooks, which are conceived as a complete interactive model of cognition and learning (a completely different principle than the printed form). We hypothesize that this may be due to the fact that current students are used to implementing digital technologies into their daily lives. It is possible that they also perceive the implementation of digital technologies in music education positively, but in order to be perceived as effective, based on research findings it is

necessary that electronic textbooks of music education will use digital images and will be interactive and completely different from classically designed print textbooks.

Based on the research of teachers - ICT users in music education, Brozmanová (2013) divided into a group of enthusiasts, pragmatists and skeptics, which partially correspond to the typology of EM Rogers: Innovators - enthusiasts, adopters - visionaries, Pragmatists, Conservatives, Skeptics (In: Brdlička, 2006). In connection with the mentioned division and the results of our findings, we can state that it is always up to music education teacher and how they decide to follow the path of innovator - enthusiast, adopter - visionary, or within the innovation of music education also using e-learning and electronic textbooks will remain a skeptic.

6 Conclusion

The empirical findings can serve as a starting point for a further research in e-learning in the field of music education. Based on the research results, we can state that the implementation of ICT and especially electronic textbooks has its sense, justification and, mainly its future, according to the researched sample of music education teachers and students, future music education teachers. Our research findings can be used as a starting point in further efforts to develop e-learning in the field of music education, even in the context of the current epidemiological situation associated with COVID-19.

In general, it can be stated that the research findings call for music education teachers, whether in primary, secondary or higher education, but also for future music education teachers, who will use the innovations in music education more frequently, which will provide ICT mainly in the form of implementation the e-learning and also with the help of the use of the electronic textbooks.

7 Limits

As part of the collection of empirical data, we were unable to reach a representative sample of teachers and students from all regions of the Slovak Republic. It would be ideal to increase the number of the research sample, both in the case of music teachers and in the case of students. Nevertheless, it should be noted that only teachers who teach music in their educational activities are represented in the research sample of teachers.

Literature:

1. Alexander, S. E-learning. developements and experiences. Education&Training, 2001, 43 (4/5), 240-248
2. Al-Ghawanmeh, M. T. &Haddad, R. N. &Al-Ghawanmeth, F. M. Appliance of Music Information Retrieval System For Arabian Woodwinds In E-learning And Music Education. In Proceedings of the International Computer Music Conference (ICMC 2009), Montreal, Canada, Volume 2009. pp. 17-20 2009. Available at: <https://quod.lib.umich.edu/cache//b/b/p/bb/p2372.2009.004/bbp2372.2009.004.pdf#page=1;zoom=75>
3. Avnarovna Zaripova, D. Changes in pedagogical activity as a result of the informatization of education. American Journal of research, 2018, 3-4 (3-4), 55-58
4. Baker, W. E-learning in the music and visual arts education of pre-service teachers: Academic perspectives. Proceedings of the 2012 Australian Association for Research in Education Conference, 2-6 December 2012, University of Sydney, Australia.
5. Baker, W. J. & Pittaway, S. The application of a student engagement framework to the teaching of music education in an e-learning conext in one Australian university. 2012 In. G. Tchibozo (ed.). Proceedings of the 4th Paris International Conference of Education, Economy and Society, Strasbourg (France): Analytics, pp 27-38
6. Baker, W. J. Using video to cross the boundary between Arts education and online learning in a preservice teacher education degree: Students perspectives. In J. Wright (ed.) Researching across boundaries. Proceedings of the Australian

- Association for Research in Education National Conference, Hobart, TAS, 27th November - 1 December, 2011 (pp 1-13). Deakin, ACT: Australian Association for Research in Education.
7. Beniák, J. CAX Systémy, Počítačom podporované vzdelávanie. Bratislava : Slovenská technická univerzita. 2014. ISBN 978-80-227-4284-9
8. Břílek, M. - Semrádová, I. ICT a nové přístupy k tvorbě vzdělávacích programů v České republice. In Acta Humanica. č. 1, 2004. ISSN 1336-5126
9. Brdlička, B. Další studie potvrdila přínos technologií. [online]. 2006 [cit. 2019-08-09]. Available at: <http://www.spomocnik.cz/index.php?idocument=609>
10. BREZINA, P. 2009. Počítačom podporovaná výučba hudobnej výchovy In: Acta Musicologica. roč. 6, č. 1 (2009), s. 1-9. ISSN 1214-5955. [online]. [cit. 20120-08-10]. Available at: <http://acta.musicologica.cz/09-01/0901s03.pdf>
11. Brodniansky, M. Harmonické cítěnie detí predškolského veku vo vybraných regiónoch Slovenska (dissertation thesis). Banská Bystrica : Pedagogická fakulta Univerzita Mateja Bela, 2015
12. Brozmanová, O. In Fridman a kol. (2013) Hudobná edukácia v kontexte informačných a komunikačných technológií. Banská Bystrica : Pedagogická fakulta Univerzity Mateja Bela v Banskej Bystrici, 2013. ISBN 978-80-557-0500-2
13. BROZMANOVÁ, O. 2015. Informačno-komunikačné technológie a ich využitie v hudobnej edukácii. Banská Bystrica: Belanium, 2015. 168 s. ISBN 978-80-557-0906-2
14. Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions on the Digital Education Action Plan, COM/2018/22 final
15. Crook, C. Children as computer users: The case of collaborative learning. In Computers and Education, 1998, 30, 237-247.
16. Dígolo, A.B. & Adang, E. A. & Katuli, J. E-learning as a Strategy for Enhancing Access to Music Education. International Journal of Business and Social Science, 2011, Vol. 2 No. 11, 135-139.
17. Doyle, T., & Arnedillo-Sánchez, I. Using multimedia to reveal the hidden code of everyday behaviour to children with autistic spectrum disorders (ASDs). Computers and Education 56(2) 357-369 [online] 2011 [cit. 2020-02-004]. Available at: <http://dx.doi.org/10.1016/j.compedu.2010.08.016>
18. Drigas, S. A. and T. Paraskevi. ICTs and Music in Special Learning Disabilities International Journal of Recent Contributions from Engineering, Science & IT (IJES) Vol 4, No 3 (2016) [online]. [cit. 2019-08-09]. Available at: <https://online-journals.org/index.php/i-jes/article/view/6066/4126>
19. Eger, L. Česká pedagogika a e-learning. In Pedagogická orientace. [online] 2004 ISSN 1805-9511, 2004, č.4, s. 2-15. [cit. 2018-03-16] Available at: <https://journals.muni.cz/pedor/article/view/8012/7247>
20. Eiksund, Øyvind & Angelo, Elin & Knigge, Jens. Music Technology in Education - Channeling and Challenging Perspectives. 2020. 10.23865/noasp.108.
21. Eurydice: Information and Communication Technology in European Education Systems [online]. 2001. [cit. 2019-07-09]. Available at: http://www.sel-gipes.com/uploads/1/2/3/3/12332890/2001_eurydice_-_icteurope.edu.pdf
22. Faghil, B. Azadehfah, M.R. Katebi, S.D. User Interface Design for E-learning Software. The International Journal of Soft Computing and Software Engineering (JSCE), Vol. 3, No. 3, Special Issue: The Proceeding of International Conference on Soft Computing and Software Engineering 2013
23. Freebern, N. 2020. Freebern music, Towards greater personalization in music education. [online]. 2020. [cit. 2019-01-02] <https://www.freebernmusic.com/blended-learning-in-music>
24. Fridman, L. et al. Hudobná edukácia v kontexte informačných a komunikačných technológií. Banská Bystrica : Pedagogická fakulta UMB. 2013 ISBN 978-80-557-0500-2
25. Hartley, J. Teaching, learning and new Technologies: A review for teachers. British Journal of Educational Technology, 2007. 38(1), 42-62
26. Hebert, D. G. Five challenges and solutions in online music teacher education. Research and Issues in Music Teacher Education, 2007. 5(1): 1-10.
27. Heikkila, E. & Knight, A. (2012) Inclusive Music Teaching Strategies for Elementary-Age Children with Development Dyslexia. In Music Educators Journal, 99(1) pp. 54-59 [online]. 2012. [cit. 2019-07-09]
28. Horváthová, D. Tvorba multimediálnych výučbových materiálov pre DV a e-learning. Banská Bystrica : Univerzita Mateja Bela, 2011. ISBN 978-80-557-0182-0
29. Illés, Z., Psenakova, I., Heizlerne Bakonyi, V. New perspectives of m-learning. Acta Electrotechnica & Informatica 8 (pp36-39), 2008
30. Kalaš, I. a kol.: Premeny školy v digitálnom veku. Bratislava: Slovenské pedagogické nakladateľstvo, 2013. 256 s. ISBN 978-80-10-02409-4
31. Kamla-raj. The Investigation of Readiness for e-Learning of Pre-service Music Teachers in Turkey. The Anthropologist: International Journal of Contemporary and Applied Studies of Man, 21 (1,2), 263-270, 2015. ISSN 0972-0073
32. Koreňová, L.: Informačné a komunikačné technológie vo vyučovaní matematiky. Bratislava: Metodické centrum mesta Bratislavy, 2000. 69 s. ISBN 800-7164-271-1
33. Koutsoupidou, T. Online Distance Learning and Music Training: Benefits, drawbacks and challenges. Διεθνές Συνέδριο για την Ανουκτική & Εξ Αποστάσεως Εκπαίδευση. 7. 10.12681/icodl.536. 59 [online]. 2016. [cit. 2018-03-08] Available at: https://www.researchgate.net/publication/304574795_Online_Distance_Learning_and_Music_Training_Benefits_drawbacks_and_challenges
34. Kučerová, A. – Pálušová. Informačné a komunikačné technológie ako moderný technický didaktický prostriedok. In UNINFOS 2006, Univerzitné informačné systémy, Zborník príspevkov z medzinárodnej konferencie. Nitra: Univerzita Konštantína Filozofa, 2006. s. 250-254, ISBN 80-8050-976-X
35. Lecon, C. Hermann, M. Learning for E-learning. Computer Science & Information Technology, Volume 10, Number 11, 2020. 29-43 59 [online]. 2020. [cit. 2020-07-09] Available at: <https://airconline.com/csit/papers/vol10/csit101103.pdf>
36. Lima, D., & Castro, T. Music Spectrum: A Music Immersion Virtual Environment for children with Autism. Procedia Computer Science, Vol. 14, pp. 111-118 (2012) [online]. 2012. [cit. 2018-07-09] Available at: <http://dx.doi.org/10.1016/j.procs.2012.10.013>
37. Mistrík, E. Estetický slovník. Bratislava : Album. ISBN 978-80-971533. [online]. 2013. [cit. 2018-07-09] Available at: <http://www.estetickyslovník.sk/category/texty-hesiel/ec-er/>
38. Ožvoldová, M. – Gerháťová, Ž. Projektové vyučovanie s využitím integrovaného e-learningu. Trnava : VEDA. 2011 ISBN 978-8-8082-386-3
39. R. S. Fadilahwati Abdul Rahman, Fattawi Mokhtar, Nor Aziah Alias, Multimedia Elements as Instructions for Dyslectic Children. International Journal Of Education And Information Technologies, Vol. 6, No. 2) [online]. 2012. [cit. 2018-08-08] Available at: <https://naun.org/main/NAUN/educationinformation/16-097.pdf>
40. Roussos, M. (1997) Issues in the design and evaluation of virtual reality learning environment. (MSc Thesis, University of Illinois at Chicago). Retrieved 14 February 2007.) [online]. 1997. [cit. 2019-07-09] available at: <https://www.evl.uiowa.edu/mariar/THESIS/>
41. Ruokonen, I. & Ruismäki, H. E-learning in Music: A Case Study of Learning Group Composing in a Blended Learning Environment. Procedia – Social and Behavioral Sciences 217 (2016) 109-115
42. Šašala, R. Základy hudobných digitálnych technológií. [online] Prešov: Prešovská univerzita v Prešove, 2017. 103s. ISBN 978-80-555-1817-6 [cit. 2018-03-14] Available at: <http://www.pulib.sk/web/kniznica/elpub/dokument/Sasala1>
43. Seddon, F. & Biasutti, M. Evaluating a music e-learning source: The participants' perspective. Computers & Education 53 (2009) 541-549
44. Shoemaker, K & Stamvan, G. e-Piano, a Case of Music Education via e-Learning in Rural Zambia. in Web Science 10 (2010), Raleigh, NC, USA. Peer-reviewed Conference Paper.
45. Sláviková, Z. Učiteľ hudby na prahu 21. storočia. Prešov : vlastným nákladom, 2000. ISBN 80-968348-3-5

46. Sudický, P. – Zounek, J. E-learning, učení se s onlinetechnologiemi. Praha : Wouters Kluwer ČR, 2012. ISBN 978-8-7357-903-6
47. Williams, P., &Hanson-Baldauf, D. Testing a web information portal for people with learning disabilities. Journal of Research in Special Educational Needs. 10(1), 42-45 [online]. 2010. [cit. 2018-07-09] Available at: <http://dx.doi.org/10.1111/1/j.1471-3802.2009.01142.x>
48. Zlámalová, H. 2008. Dištanční vzdělávání a e-learning. Praha : Univerzita J. A. Komenského, 2008. ISBN 978-80-86723-56-3
49. Zounek, J. (2006). E-learning a vzdělávání. Několik pohledů na problematiku e-learningu. In Pedagogika. ISSN 0031-3815, 2006, roč. 56, č. 4, s. 335-347.

Primary Paper Section: A

Secondary Paper Section: AM

SLEEP DEPRIVATION AS KEY FACTOR OF INFLUENCING COGNITIVE ABILITIES IN CONTEXT OF SECURITY ENVIRONMENT

^a DAVID ULLRICH, ^a EVA AMBROZOVÁ, ^a PAVEL SLÁDEK, ^a EVA KOZÁKOVÁ, ^b FRANTIŠEK MILICHOVSKÝ

^a *Brno University of Defence, Faculty of Military Leadership, Kounicova 65, 662 10 Brno, Czech Republic*

^b *Brno University of Technology, Faculty of Business and Management, Department of management, Kolejní 2906/4, 612 00 Brno, Czech Republic*

email: david.ullrich@unob.cz; eva.ambrozova@unob.cz; milichovsky@fbm.vutbr.cz

Abstract: In this study we examined in how far sleep deprivation leads to autism-like symptoms with regard to social cognition. The negative effects of sleep deprivation on physical and mental functioning are well documented and it is therefore surprising that relatively little research has been done into the effects of sleep deprivation on social behaviour and the ability to judge social interactions and emotional expressions appropriately. Our experiment, conducted amongst 25 male students at the Czech military academy in Brno, Czech Republic, showed no significant differences in performance on a standard autism test between pre- and post- sleep deprivation conditions. The purpose of the paper is describe impacts of sleep deprivation on men with high physical stress, what negatively influence relevant cognitions and emotions. Sleep deprivation strongly influence cognitive abilities, leading to military leadership development.

Keywords: sleep-deprivation, theory of mind, leadership, development of leader, social cognition, emotional expressions, security field.

1 Introduction

Security environment requires to have lot of high quality leaders, who can combine both requirements of subordinates and superiors. That combination need to apply model “be, know, do”, which is developed from U.S. army rule (McNab, 2003). According to Jarošová, Pauknerová, Lorencová (2016) it is necessary to use relevant personal parameters to build leadership in organization. The group of personal parameters includes various elements, influencing level of leader. As one of the most influencing parameter is considered sleep deprivation.

It is widely recognized that sleep deprivation impairs a range of cognitive functions, including memory (Deliens et al., 2018; Menz et al., 2013; Kaida, Niki, Born, 2015; Chatburn et al., 2017), visual perception taking (Deliens et al., 2018), reaction time to visual cues (Dinges, Powell, 1985; Lim, Dinges, 2008), and emotional processing (Walker, 2009; Walker, van der Helm, 2009; Tempesta et al., 2018). With regard to the latter, especially our ability to correctly interpret emotional cues from others (i.e. facial expressions, changes in speech, etc.) is paramount in navigating the social environment properly and sleep deficiency can thus severely hinder social behavior and, in the long term, connectivity. Moreover, failure to either detect, or correctly interpret, emotional cues from others can, in critical contexts, have dire consequences, which reach far beyond the interests of the individual. It is therefore surprising that sleep deprivation is a common, and often accepted, part of many professional fields, such as health care and the military, in which it is critical to quickly and accurately assess crisis situations which include a human element.

1.1 Various interpretations of sleep deprivation effect

Sleep deprivation does, however, not seem to impair the recognition of different emotional cues equally (Killgore et al., 2017; Chen, Chen, 2019). In one study Killgore and colleagues (2017), on the basis of previous findings on the same data set (Huck et al., 2008), report that sleep deprived individuals, who were presented with photos of the facial expressions that go with the six main emotions (anger, happiness, surprise, sadness, disgust and fear (see e.g. Ekman, 2009; Cartella et al., 2019; Montes-Rodríguez, Rueda-Orozco, Prospéro-García, 2019), differed from well rested individuals in their interpretation of non-threatening emotions (happiness and sadness), whereas

threatening emotions were usually interpreted correctly. These findings contradict Beatti's (2018) assertion that failure to correctly identify facial expressions of emotion may result from reduced visual perception rather than a cognitive impairment. After all, visual impairment should register equally across emotions whereas cognitive impairment can favor some emotional expressions over others (Herzog-Krzywosanska, Krzywosanski, 2019). These findings are supported by the observation that sleep deprivation leads to increased activity in the amygdala and decreased activity in the ventromedial prefrontal cortex (vmPFC) during the consolidation of fear memories (Feng et al., 2018). Moreover, Yoo and colleagues (2007) report a significant reduction in communication between the amygdala and the vmPFC in sleep deprived individuals. The increased activity in the amygdala may, in addition, go a long way in explaining the heightened sensitivity to anxiety (Pires et al., 2016) and the disproportional effects on the detection and interpretation of different emotions in sleep deprived individuals. It should however be noted that the study by Killgore and colleagues (2017) focused on the six primary emotions and it is unclear in how far these results hold up for larger sub-sets of emotions.

1.2 Brief introduction of the Theory of Mind

Interestingly, the vmPFC has also been implicated as one of the key brain regions for Theory of Mind (ToM) (Amodio, Frith, 2006); the ability project states of mind on other actors in the environment (Premack, Woodruff, 1978). It must be noted however that it is widely recognized that ToM arises from the interaction between more brain regions (Gallagher, Frith, 2003; Saxe, 2006; Abu-Akel, Shamay-Tsoory, 2011) and other regions, such as the Para cingulate cortex (Gallagher, Frith, 2003) and the orbitofrontal cortex (Stone, 2000) have been suggested as the key area for ToM. These differences may arise from the application of different tests for ToM and it must be taken in to consideration that, what is commonly referred to as ToM, may in fact be a conglomerate of trades which have their origins in different regions of the brain.

ToM is instrumental in (human) social behavior as it provides the individual with a rapid, relatively accurate means of predicting the behavior of others within different social settings and in reaction to the individual's actions or those of third parties (i.e. Ben will be angry with John, if John kicks him: 3rd degree ToM). In humans ToM has been demonstrated to be oversensitive and too often include the attribution of human like behaviors and motivations to non-human agents (anthropomorphism) such as animals (Butterfield, Hill, Lord, 2012; Urquiza-Haas, Kotrschal, 2015), inanimate objects (Waytz, Heafner, Epley, 2014; Gjersoe, Hall, Hood, 2015; Riva, Sacchi, Brambilla, 2015), and abstract concepts such as nature (Tam, Lee, Chao, 2013) and Gods (Barrett, Keil, 1996; MacGillavry, 2018). Deficiencies in ToM have been extensively studied with relation to a range of psychological disorders, such as autism (Baron-Cohen et al., 2011), Schizophrenia (Harrington, Siegert, McClure, 2005), and epilepsy (Giovagnoli, 2014), as well as diseases which are associated with brain deterioration such as Huntington's (Snowden et al., 2003) and Parkinson's (Bora, Walterfang, Velakoulis, 2015) disease. The aim of the following study is to determine in how far the effects of acute sleep deprivation resemble diminished ToM as observed in the above-mentioned afflictions, specifically autism.

1.3 Leadership in security environment on development of managers

Leadership is described as basic tool how is possible to manage and lead people and human systems. There are specific approaches, when commanders must motive and get people to be more engaged in reaching defined goals. In context of army organization, Goffee and Jones (2008) mention potential

problems where is usually rigid hierarchy as barrier of developing leader's potential. They found out that the best army organization know necessity of the quality leadership in all levels.

Good leader must change mind setup, which help to improve thinking and behavior of potential leader. To become a good leader, Robbins, Coulter (2004) recommend three abilities:

- technical skills includes relevant knowledge of adequate technics and technologies;
- human skills are focused on interpersonal communication, motivation, leading or mentoring of people;
- conceptual skills target on conceptual, complex and critical thinking, connected to strategic areas.

On the way of preparing good commanders, there is relevant to use meta-competence model (Schwartzman, 2003). Meta-competence is human ability to obtain new competencies as personal development. This model focuses on adjustment of commanders in process of developing and cultivating leader's strategic skills. It includes six specific areas, which help to commander's improvement:

1. *identity* is process of feedback collection, that helps to self-awareness of personal skills in present form;
2. *mental agility* defines recognition ability in specific environment to reach effective performance. Base for this effectiveness is observing of specific areas (with high level of ambiguity and uncertainty), bringing relevant cognitive processes and improvisation;
3. *cross-cultural savvy* represents need of orientation in inter-culture affairs to understand different cultures from various point of views (e.g. religion, history, geographic, social or economy);
4. *interpersonal maturity* leads to application of teaching, coaching, mentoring of all participating persons. Results of these activities must be shared with relevant entities;
5. *world-class warrior* is usually rated as the simplest area, divided from technical and tactical competencies during army duties and based on various army texts such e.g. army history, army arts, or simulations of army activities;
6. *professional astuteness* reflects army as kind of mission, where is applied liability and diplomatic as key factors on the way of well-advised realization activities.

2 Materials and methods

To test in how far sleep deprivation leads to diminished ToM functioning akin to the symptoms of autism, 25 male students from the Czech military academy in Brno, Czech Republic, were recruited. Participation was voluntary, and participants had a possibility to opt out at any stage during the experiment. Before the start of the experiment participants signed a form of consent and were informed of what would happen to them. The study was conducted in accordance with the Declaration of Helsinki, and the protocol was approved by the Ethics Committee of Brno University of Defence, Faculty of Military Leadership.

For purpose of the research, there is defined hypothesis that "sleep deprivation does not lead to impairment of ToM". To verify it, there was applied ANOVA and T-test. All 25 participants finished the experiment although it must be noted that several individuals who signed up for the experiment opted out before the experiment had begun. We tested also for physical markers of fatigue using a Medicore Max pulse and a blood pressure monitor (separate measures for the Eyes test and the questionnaire described. Statistical analysis was done using IBM SPSS 24.

3 Results

Participants (N=25) were tested before and after a night of acute sleep deprivation (21:00 and 04:00) for both ToM and physical markers of fatigue. To test participants' ToM, we distributed a Czech translation of the "The Eyes Test" (MacGillavry, 2018), which was designed to be sensitive enough to detect deficiencies in ToM amongst high-functioning individuals with autism and Asperger's syndrome. The test consists of 36 photos of eyes (taken from different individuals), which express a certain emotion. Each photo comes with four emotions of which the participant has to select the correct one. In addition, we administered a short questionnaire which presented participants with a series of profession specific cases for which they had to decide, on a five-point Likert scale, in how far the outcome of the actions of one of the main actors can be viewed as his/her personal responsibility.

This questionnaire was designed to specifically addresses inabilities in metalizing with relation to hindsight bias. The correlation between hindsight bias (the inability to adopt the point of view of someone else, or the self, during past events due to current knowledge of the outcome of events; I knew it all along!) and ToM deficiencies has previously been reported (Bernstein et al., 2007; Birch, Bernstein, 2007). We therefore assumed that ToM deficiencies should register on a profession specific test which related to decision making in crisis situations.

The test consists of 10 cases (4 of which were decoy cases) which were split into two parts, part A and part B (5 cases (2 decoy-cases) each). Half of the group (N=13) were provided with part A in the evening and part B in the morning. The other half of the group got part B first and part A second. Both tests were administered before and after a night of acute sleep deprivation. We reverse scored answers to cases with negative outcomes in order to keep the measure constant.

We tested the data from the Eyes Test for normality using the K-S test for:

- evening condition: $D(25)=0.12$, $p>0.05$
- morning condition, $D(25)=0.17$, $p>0.05$

Both gained value indicate, that the data from both conditions approximate normality.

Subsequently we compared the two conditions:

- Evening: Mean=25,60; Standard error=0,592
- Morning: Mean=25,84; Standard error=0,754

On these values there was applied a Paired Samples T-Test:

$$t(24) = -0,327$$

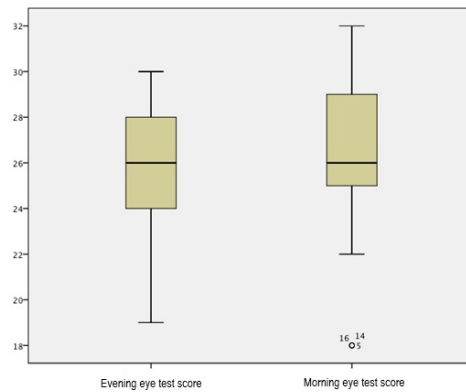
$$p > 0,05$$

$$r = 0,033$$

On this basis we conclude that, in our sample, there is no significant effect of one night of acute sleep deprivation on participants' ability to successfully fill out the Eyes Test.

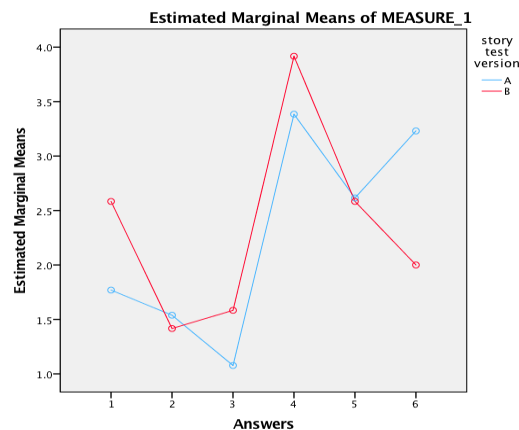
Answers to the questionnaire were analyzed using a mixed ANOVA design which indicates that there is no significant effect of sleep deprivation within our test group on performance on a short hindsight-bias questionnaire.

Figure 1. Boxplots of the Eyes Test show a slight, yet not significant, improvement amongst most participants.



Source: own work by authors

Figure 2. The estimated marginal means of the questionnaire shows large similarities between both groups.



Source: own work by authors

In our sample, there is no significant effect of one night of acute sleep deprivation on participants' ability to successfully fill out the Eyes Test despite the fact that Boxplots of the Eyes Test show a slight, yet not significant, improvement amongst most participants. One night of acute sleep deprivation was either not strong enough or the physical effects of sleep deprivation do not involve the markers we tested for. The 0-hypothesis (sleep deprivation does not lead to impairment of ToM) can, at least on the basis of our data, not be discarded. However, it must be noted that the experiment was run on a limited sample (25 participants), which was drawn from a population (Czech military personnel) which receives regular training in counterbalancing the effects of sleep deprivation.

In the modern world sleep deprivation is both common and can have significant negative effects on work efficiency and overall success. It is therefore paramount to understand both the physical and the mental effects of sleep deprivation. In this paper, we tested in how far sleep deprivation leads to symptoms which resemble problems in Theory of Mind as observed in a range of mental and neuro-degenerative disorders such as autism, Asperger's syndrome, Parkinson's disease and Huntington's disease. We hypothesized that, given that our participants were all healthy young males without a history of neuro-degenerative illness, deficiencies in ToM would resemble those observed in mental disorders most and therefore administered a standardized autism-spectrum test which was supplemented with a profession-specific hindsight test and a

range of tests for physical markers of fatigue. Our experiment showed no significant differences between pre- and post- sleep deprivation conditions in neither the ToM tests nor the tests for physical markers.

It is however interesting to note that both the ToM and physical post tests showed more, although not significantly more, overall variability. Moreover, due to scheduling, the post-test was taken around 4:00 a.m. rather than the more common 7:00 a.m. (Killgore et al., 2017), which resulted in 3 hours less wakefulness. This may be why there was no notable difference in the physical markers we tested for. However, there is reason to believe that sleep deprivation affects mental processing prior to physical function and we should therefore expect that mental effects of sleep deprivation can be observed without changes in physical states. As such more research must be done into the interaction between sleep deprivation and social cognition. We recommend that further research builds on at least 48 hours of wakefulness as our experiment clearly showed that ± 20 hours is clearly not sufficient to illicit any notable effects.

4 Conclusions

Sleep deprivation is considered as important factor, which influence leadership development and it requires cognition (Chen, Chen, 2019). According to description of sleep deprivation phenomenon, it is possible to decide, that there is negative effect of sleep deprivation on working memory,

cognitive skills and appropriate decision making process (Zhang et al., 2019; De Havas et al., 2012).

Sleep deprivation has specific influence in military population, where is necessary to interact personal stressors, internal motivation, self-care or leadership development. To support leadership development in army there is important to provide adequate condition for sleeping, sustain health which are connected to long-time military sustainability (Capaldi, Balkin, Mysliwiec, 2019; Yang et al., 2019). Therefore, persons in military must minimize sleep deprivation, what leads to improve relevant psychomotor abilities and psychophysical performance (Ritland et al., 2019; Tyyskä et al., 2010; Kahn-Greene et al., 2006; Deliens et al., 2013; Killgore, 2007; Meunier, 2017).

Literature:

1. Abu-Akel, A., Shamay-Tsoory, S. (2011). Neuroanatomical and neurochemical bases of theory of mind. *Neuropsychologia*, 49(11), pp. 2971-2984. Doi: 10.1016/j.neuropsychologia.2011.07.012.
2. Amodio, D. M., Frith, C. D. (2006). Meeting of minds: The medial frontal cortex and social cognition. *Nature Reviews Neuroscience*, 7(4), pp. 268-277. Doi: 10.1038/nrn1884.
3. Baron-Cohen, S., Lombardo, M. V., Auyeung, B., Ashwin, E., Chakrabarti, B. et al. (2011). Why Are Autism Spectrum Conditions More Prevalent in Males? *PLOS Biology*, 9(6), pp. 1-10. Doi: 10.1371/journal.pbio.1001081
4. Barrett, J. L., Keil, F. C. (1996). Conceptualizing a non-natural entity: Anthropomorphism in God concepts. *Cognitive Psychology*, 31(3), pp. 219-247. Doi: 10.1006/cogp.1996.0017.
5. Beattie, L. (2018). How does sleep affect the perception of facial emotion? *Sleep*, 41(4), pp. 1-3. Doi: 10.1093/sleep/zy030.
6. Bernstein, D. M., Atance, C., Meltzoff, A. N., Loftus, G. R. (2007). Hindsight bias and developing theories of mind. *Child Development*, 78(4), pp. 1374-1394. Doi: 10.1111/j.1467-8624.2007.01071.x.
7. Birch, S. A. J., Bernstein, D. M. (2007). What can children tell us about hindsight bias: fundamental constraint on perspective – taking? *Social Cognition*, 25(1), pp. 98-113. Doi: 10.1521/soco.2007.25.1.98.
8. Bora, E., Walterfang, M., Velakoulis, D. (2015). Theory of mind in behavioural-variant frontotemporal dementia and Alzheimer's disease: a meta-analysis. *Journal of Neurology, Neurosurgery & Psychiatry*, 86(7), pp. 714-719. Doi: 10.1136/jnnp-2014-309445.
9. Butterfield, M. E., Hill, S. E., Lord, C. G. (2012). Mandy mutt or furry friend? Anthropomorphism promotes animal welfare. *Journal of Experimental Social Psychology*, 48(4), pp. 957-960. Doi: 10.1016/j.jesp.2012.02.010.
10. Capaldi, V. F., Balkin, T. J., Mysliwiec, V. (2019). Optimizing sleep in the military: challenges and opportunities. *Chest*, 155(1), pp. 215-226. Doi: 10.1016/j.chest.2018.08.1061.
11. Cartella, E., De Salvo, S., Bonanno, L., Muscarà, N., Micchia, K., Pisani, L. R., Corallo, F., Pollicino, P., Bramanti, P., Marino, S. (2019). fMRI and electroencephalographic evaluation of sleep deprivation in epilepsy patients: An observational study. *Journal of Clinical Neuroscience*, 69, 120-123. Doi: 10.1016/j.jocn.2019.08.015.
12. Chatburn, A., Kohler, M. J., Payne, J. D., Drummond, S. P. A. (2017). The effects of sleep restriction and sleep deprivation in producing false memories. *Neurobiology of Learning and Memory*, 137, pp. 107-113. Doi: 10.1016/j.nlm.2016.11.017.
13. Chen, W. L., Chen, J. H. (2019). Sleep deprivation and the development of leadership and need for cognition during the college years. *Journal of Adolescence*, 73, 95-99. Doi: 10.1016/j.adolescence.2019.04.003
14. Choudhary, A. K., Dadarao Dhanvijay, A. K., Alam, T., Kishanrao, S. S. (2017). Sleep restriction and its influence on blood pressure. *Artery Research*, 19, pp. 42-48. Doi: 10.1016/j.artres.2017.06.003.
15. De Havas, J. A., Parimal, S., Soon, Ch. S., Chee, M. W. L. (2012). Sleep deprivation reduces default mode network connectivity and anti-correlation during rest and task performance. *NeuroImage*, 59, pp. 1745-1751. Doi: 10.1016/j.neuroimage.2011.08.026.
16. Deliens, G., Gilson, M., Schmitz, R., Peigneux, P. (2013). Sleep unbinds memories from their emotional context. *Cortex*, 49(8), pp. 2221-2228. Doi: 10.1016/j.cortex.2012.11.014.
17. Deliens, G., Bukowski, H., Slama, H., Surtees, A., Cleeremans, A., Samson, D., Peigneux, P. (2018). The impact of sleep deprivation on visual perspective taking. *Journal of Sleep Research*, 27(2), pp. 175-183. Doi: 10.1111/jsr.12595.
18. Dinges, D. F., Powell, J. W. (1985). Microcomputer analyses of performance on a portable, simple visual RT task during sustained operations. *Behavior Research Methods, Instruments, & Computers*, 17(6), pp. 652-655. Doi: 10.3758/BF03200977.
19. Ekman, P. (2009). *Telling lies: Clues to Deceit in the Marketplace, Politics, and Marriage*. New York: Norton.
20. Feng, P., Becker, B., Feng, T., Zheng, Y. (2018). Alter spontaneous activity in amygdala and vmPFC during fear consolidation following 24h sleep deprivation. *NeuroImage*, 172(1), pp. 461-469. Doi: 10.1016/j.neuroimage.2018.01.057.
21. Gallagher, H. L., Frith, C. D. (2003). Functional imaging of theory of mind. *Trends in Cognitive Sciences*, 7(2), pp. 77-83. Doi: 10.1016/S1364-6613(02)00025-6.
22. Giovagnoli A. R. (2014). The importance of theory of mind in epilepsy. *Epilepsy & Behavior*, 39, pp. 145-153. Doi: 10.1016/j.yebeh.2014.05.021
23. Gjersoe, N. L., Hall, E. L., Hood, B. (2015). Children attribute mental lives to toys when they are emotionally attached to them. *Cognitive Development*, 34, pp. 28-38. Doi: 10.1016/j.cogdev.2014.12.002.
24. Goffe, R., Jones, G. (2008). *Jak se stát autentickým lídrem: proč právě vy byste měli vést druhé?* Praha: Management Press.
25. Harrington, L., Siegert, R., McClure, J. (2005). Theory of mind in schizophrenia: A critical review. *Cognitive Neuropsychiatry*, 10(4), pp. 249-286. Doi: 10.1080/13546800444000056
26. Herzog-Krzywoszanska, R., Krzywoszanski, L. (2019). Bedtime procrastination, sleep-related behaviors, and demographic factors in an online survey on a polish sample. *Frontiers in Neuroscience*, 18, pp. 1-15. Doi: 10.3389/fnins.2019.00963.
27. Huck, N. O., McBride, S. A., Kendall, A. P., Grugle, N. L., Killgore, W. D. S. (2008). The effects of modafinil, caffeine, and dextroamphetamine on judgments of simple versus complex emotional expressions following sleep deprivation. *International Journal of Neuroscience*, 118(4), pp. 487-502. Doi: 10.1080/00207450601125907.
28. Jarošová, E., Pauknerová, D., Lorencová, H. (2016). *Nové trendy v leadershipu: koncepce, výzkumy, aplikace*. Praha: Management Press.
29. Kahn-Greene, E. T., Lipizzi, E. L., Conrad, A. K., Kamimori, G. H., Killgore, W. D. S. (2006). Sleep deprivation adversely affects interpersonal responses to frustration. *Personality and Individual Differences*, 41(8), pp. 1433-1443. Doi: 10.1016/j.paid.2006.06.002.
30. Kaida, K., Niki, K., Born, J. (2015). Role of sleep for encoding of emotional memory. *Neurobiology of Learning and Memory*, 121, pp. 72-79. Doi: 10.1016/j.nlm.2015.04.002.
31. Killgore, W. D. S., Balkin, T. J., Yarnell, A. M., Capaldi, V. F. (2017). Sleep deprivation impairs recognition of specific emotions. *Neurobiology of Sleep and Circadian Rhythms*, 3, pp. 10-16. Doi: 10.1016/j.nbscr.2017.01.001.
32. Killgore, W. D. S. (2007). Effects of sleep deprivation and morningness - eveningness traits on risk-taking. *Psychological Reports*, 100(2), pp. 613-626. Doi: 10.2466/pr0.100.2.613-626.
33. Lim, J., Dinges, D. F. (2008). Sleep deprivation and vigilant attention. *Annals of the New York Academy of Sciences*, 1129, pp. 305-322. Doi: 10.1196/annals.1417.002.
34. MacGillavry, D. W. (2018). Rethinking Secrecy in Religion. *Method & Theory in the Study of Religion*, 30(4-5), pp. 1-20. Doi: 10.1163/15700682-12341430.
35. McNab, C. (2003). *Příprava pro přežití*. Praha: Svojtka & Co.
36. Menz, M. M., Rihm, J. S., Salari, N., Born, J., Kalisch, R., Pape, H. C., Marshall, L., Büchel, C. (2013). The role of sleep and sleep deprivation in consolidating fear memories. *NeuroImage*, 75, pp. 87-96. Doi: 10.1016/j.neuroimage.2013.03.001.

37. Meunier, H. (2017). Do monkeys have a theory of mind? How to answer the question? *Neuroscience and Biobehavioral Reviews*, 82, pp. 110-123. Doi: 10.1016/j.neubiorev.2016.11.007.
38. Ministry of defence. (2004). *Doktrína Armády České republiky*. Praha: AVIS. [online] [cit. 2019-11-09]. Retrieved from <http://www.mocr.army.cz/images/Bilakniha/CSD/2004%20Doktrina%20ACR.pdf>
39. Montes-Rodríguez, C. J., Rueda-Orozco, P. E., Prospéro-García, O. (2019). Total sleep deprivation impairs fear memory retrieval by decreasing the basolateral amygdala activity. *Brain Research*, 1719, pp. 17-23. Doi: 10.1016/j.brainres.2019.05.030.
40. Pires, G. N., Bezerra, A. G., Tufik, S., Andersen, M. L. (2016). Effects of acute sleep deprivation on state anxiety levels: a systematic review and meta-analysis. *Sleep Medicine*, 24, pp. 109-118. Doi: 10.1016/j.sleep.2016.07.019.
41. Premack, D., Woodruff, G. (1978). Does the chimpanzee have a theory of mind? *The Behavioral and Brain Sciences*, 4, pp. 515-526. Doi: 10.1016/j.celrep.2011.1011.1001.7.
42. Ritland, B. M., Simonelli, G., Gentili, R. J., Smith, J. C., He, X., Mantua, J., Balkin, T. J., Hatfield, B. D. (2019). Effects of sleep extension on cognitive/motor performance and motivation in military tactical athletes. *Sleep Medicine*, 58, pp. 48-55. Doi: 10.1016/j.sleep.2019.03.013
43. Riva, P., Sacchi, S., Brambilla, M. (2015). Humanizing machines: Anthropomorphization of slot machines increases gambling. *Journal of Experimental Psychology: Applied*, 21(4), pp. 313-325. Doi: 10.1037/xap0000057.
44. Robbins, S. P., Coulter, M. K. (2004). *Management*. Praha: Grada Publishing.
45. Saxe, R. (2006). Uniquely human social cognition. *Current Opinion in Neurobiology*, 16(2), pp. 235-239. Doi: 10.1016/j.conb.2006.03.001.
46. Schwartzman, R. (2003). Transforming leader development through lifelong learning. *Military Review*, 83(3), pp. 63-67.
47. Snowden, J. S., Gibbons, Z. C., Blackshaw, A., Doubleday, E., Thompson, J., Craufurd, D., Foster, J., Happé, F., Neary, D. (2003). Social cognition in frontotemporal dementia and Huntington's disease. *Neuropsychologia*, 41(6), pp. 688-701. Doi: 10.1016/s0028-3932(02)00221-x.
48. Stone, V. E. (2000). The role of the frontal lobes and the amygdala in Theory of Mind. In Baron-Cohen, S., Cohen, D., Tager-Flusberg, H. (Eds.). *Understanding other minds: Perspectives from autism and developmental cognitive neuroscience*. Oxford: Oxford University Press, pp. 253-273.
49. Tam, K. P., Lee, S. L., Chao, M. M. (2013). Saving Mr. Nature: Anthropomorphism enhances connectedness to and protectiveness toward nature. *Journal of Experimental Social Psychology*, 49(3), pp. 514-521. Doi: 10.1016/j.jesp.2013.02.001.
50. Tempesta, D., Soccì, V., De Gennaro, L., Ferrara, M. (2018). Sleep and emotional processing. *Sleep Medicine Reviews*, 2018, 40, pp. 1-13. Doi: 10.1016/j.smr.2017.12.005.
51. Tyyskä, J., Kokko, J., Salonen, M., Koivu, M., Kyröläinen, H. (2010). Association with physical fitness, serum hormones and sleep during a 15-day military field training. *Journal of Science and Medicine in Sport*, 13(3), pp. 356-359. Doi: 10.1016/j.jsams.2009.04.005
52. Urquiza-Haas, E. G., Kotrschal, K. (2015). The mind behind anthropomorphic thinking: Attribution of mental states to other species. *Animal Behaviour*, 109, pp. 167-176. Doi: 10.1016/j.anbehav.2015.08.011.
53. Walker, M. P. The role of sleep in cognition and emotion. *Annals of the New York Academy of Sciences*, 2009, 1156, pp. 168-197. Doi: 10.1111/j.1749-6632.2009.04416.x.
54. Walker, M. P., Van Der Helm, E. (2009). Overnight Therapy? The Role of Sleep in Emotional Brain Processing. *Psychological Bulletin*, 135(5), pp. 731-748. Doi: 10.1037/a0016570.
55. Waytz, A., Heafner, J., Epley, N. (2014). The mind in the machine: Anthropomorphism increases trust in an autonomous vehicle. *Journal of Experimental Social Psychology*, 52, pp. 113-117. Doi: 10.1016/j.jesp.2014.01.005.
56. Yang, D., Shenb, Y.-L., Wu, Ch., Huang, Y.-S., Lee, P.-Y., Er, N. Y., Huang, W.-Ch., Tung Y.-T. (2019). Sleep deprivation reduces the recovery of muscle injury induced by high intensity exercise in a mouse model. *Life Sciences*, 235, pp. 1-7. Doi: 10.1016/j.lfs.2019.116835.
57. Yoo, S., Gujar, N., Hu, P., Jolesz, F. A., Walker, M. P. (2007). The human emotional brain without sleep – a prefrontal-amygdala disconnect. *Current Biology*, 17(20), pp. 1-8. Doi: 10.1016/j.cub.2007.08.007.
58. Zhang, L., Huang, Y., Zhang, Y., Xin, W., Shao, Y., Yang, Y. (2019). Enhanced high-frequency precuneus-cortical effective connectivity is associated with decreased sensory gating following total sleep deprivation. *NeuroImage*, 197, 255-263. Doi: 10.1016/j.neuroimage.2019.04.057.

Primary Paper Section: A**Secondary Paper Section: AE, ED, KA**

CURRENT TAXATION MECHANISM OF CREDIT INSTITUTIONS IN THE RUSSIAN FEDERATION: ASSESSMENT OF THE STATE AND WAYS OF IMPROVEMENT AT THE CURRENT STAGE

^aKHAIBAT MAGOMEDTAGIROVNA MUSAEVA, ^bFARIDA ISLAMUDINOVNA MIRZABALAEVA, ^cZAGIDAT IBRAGIMBEKOVNA SHAKHBANOVA, ^dGALIMAT ALIEVNA BAMMAEVA

^a*Federal state educational institution of higher education "Dagestan State University", 43A Gadjeva Street, Makhachkala, 367000, Republic of Dagestan, Russian Federation*

^b*Federal state educational institution of higher education "Plekhanov Russian University of Economics", 36 Stremyanny Lane, Moscow, 117997, Russian Federation*

^c*Federal state educational institution of higher education "Dagestan State University", 43A Gadjeva Street, Makhachkala, 367000, Republic of Dagestan, Russian Federation*

^d*Federal state educational institution of higher education "Dagestan State University", 43A Gadjeva Street, Makhachkala, 367000, Republic of Dagestan, Russian Federation*

e-mail: zavazatm17@gmail.com

Abstract: The main goal of the study was to identify ways to improve the taxation mechanism of credit institutions in the Russian Federation as a special group of participants in tax relations based on the analysis of the current system and the specifics of their taxation at the present stage. In the course of the research, such scientific methods of the empirical and theoretical group as analysis and synthesis, abstraction and generalization, systemic and integrated approaches were applied. The article examines the key problems and features of the mechanisms for calculating and collecting the main taxes (income tax and value added tax) levied on credit institutions in the Russian Federation at the present stage. The study and systematization of theoretical and methodological approaches helped investigate and assess the role of banks in the formation and development of the tax system and the economy of Russia. The scientific novelty of the work lies in the development of proposals and recommendations, scientific and applied, aimed at realizing the fiscal and regulatory potential of the taxation mechanism of banks as a special group of tax relations. The positive elements of foreign experience in taxation of banks, from the point of view of its possible use in the Russian Federation were emphasized. The expediency is substantiated and a variant of income tax rates differentiation for credit institutions in terms of types of activities and profit is proposed. The importance of tax support for bank lending to priority sectors of the economy and increasing taxation of speculative transactions, currency and financial transactions is argued. The need to eliminate existing contradictions in tax legislation, improve the system of banks' liability, in order to minimize offenses and increase tax and general economic security in the Russian Federations revealed.

Keywords: taxation, current mechanism, banks, profit tax, tax crimes.

1 Introduction

An important factor in ensuring high rates of the economic growth in the country is the existence of an effective financial system, in which credit institutions play a key role. At the same time, banks play the leading role in the structure of the entire system of credit institutions. The system of taxation of banking organizations is an integral, specific part of the Russian tax system, due to the peculiarities of banking activities and their role in the reproduction processes. In any tax system, banks play a special role. On the one hand, they are self-payers of taxes. At the same time, they are also intermediaries between the state and taxpayers, as they transfer taxes to the state accounts. The stability of the banking system influences the level of stability of the entire state.

Speaking about the role of banking organizations in the tax system of Russia, one cannot but mention the fact that banks are one of the major investors in the real sector of the country's economy, which implies an increase in budget revenues due to an increase in the number of taxpayers and the creation of additional material benefits. Tax regulation methods are designed to create macroeconomic conditions that are most favourable for the functioning of the banking system, which contributes to its resilience to market fluctuations, transformation into a vibrant instrument of investment processes and economic growth.

The scientific works of many foreign and Russian scientists are devoted to the problems of creation of an effective taxation system of organizations in general and of financial and credit organizations in particular, as well as the study of the peculiarities of the banks' taxation methodology. The following researchers have made significant contributions to the development of this subject: Maniloff Peter, Manning Dale [1], Mikes A. [2], Freebairn John [3], Phua Y.S. [4], Vylkova E.S. [5], Vasiliev D.A. [6], Goncharenko L.I. [7], Igonina L.L. [8], Kichigina A.K. [9], Karpova O.M. and Mayburov I.A. [10], Lantsova N.M. [11], Shurina S.V. [12], and others.

However, despite a number of significant studies carried out by the scientists, in their works insufficient attention is paid to the analysis of the key problems of the credit institutions' taxation mechanism in the Russian Federation and finding ways to solve them at the present stage. It should also be noted that there is no free access to full official information on the amount of taxes paid by credit institutions in the total amount of budget revenues of the Russian Federation, which in turn makes it difficult to analyze the state of the banking sector [13].

Despite the constant transformation, the system of taxation of organizations in Russia has many shortcomings [14]. Unfortunately, the current system of taxation of credit institutions does not allow the banking sector to fully realize its possible fiscal and regulatory potential. The relevance of the chosen topic is due to the poor implementation of the fiscal and regulatory potential of the banking taxation mechanism in the Russian Federation at the present stage, as well as the special role the credit institutions play as subjects of tax relations in the economy.

2 Methodology

Over the past years of the market relations formation, the Russian tax system has largely acquired the characteristics of European tax systems, since it was created mainly on the basis of the experience of taxation in foreign countries. Nevertheless, it should be noted that the tax systems of the post-Soviet countries had a very low culture of borrowing, which led to a simple copying of the experience of the developed countries. "Soviet science lacked deep research on taxation, since in 1930-1990 the role of taxes in the socialist economy was generally misunderstood, and administrative methods were used to redistribute financial resources, for example, regular deductions from profits" [15], which led to significant shortcomings and omissions in the creation and implementation of the Russian tax system. At the same time, the organizational and methodological aspects of taxation of banking organizations are most characteristic: instability of legal regulation, frequent changes in the rules for calculating and paying taxes, an almost negligible regulatory role.

It should be noted that banking organizations are not identified in the Russian legislation as specific independent participants in tax relations. Nevertheless, the Tax Code of the Russian Federation (in separate articles) establishes the status, rights and obligations of commercial banks, which in fact determines their most important role in the Russian tax system [16].

In accordance with the current Russian legislation, banking organizations pay generally established taxes. The current mechanism of taxation of banking organizations in the modern conditions in accordance with the Tax Code of the Russian Federation is represented by such taxes as: value added tax (VAT); corporate income tax (CIT); corporate property tax; land tax; personal income tax (when collecting this tax from employees, banks perform the functions of a tax agent, i.e. withhold and transfer it to the budget); transport tax; state duty (if there is an object of taxation). Financial and credit

organizations (including banking), as well as other business entities, also transfer insurance contributions to off-budget social funds (Pension Fund, Social and Health Insurance Fund). In the Russian Federation, insurance contributions to off-budget social funds, although they increase the tax burden, are not included in the general taxation system.

The specifics of the financial and economic activities of banking organizations, the list of their operations, transactions, services provided determine the specifics of the taxation method for this category of taxpayers. In particular, in accordance with the current Russian legislation, in the methodological aspects of calculating and levying taxes on the banking sector of the economy, such taxes as income tax and VAT have specific characteristics. The rest of the taxes are paid by banking organizations in accordance with the generally established procedure.

The key tax in the taxation system of credit institutions in the Russian Federation is income tax. Since 1.01.2002 in accordance with Chapter 25 of the Tax Code, Russia uses an updated methodology for calculating and paying corporate income tax. Moreover, this methodology characterizes the general principles of taxation of all payers, as well as the peculiarities of taxation of certain categories, including banks. In Russia, with the adoption and implementation of Chapter 25 of the Tax Code of the Russian Federation, the existing tax exemptions on corporate income were cancelled and a single tax rate was established for all business entities, including banks.

The reform of the taxation system of organizations carried out in the Russian Federation after 2000, in general, contributed to a decrease in the tax burden on credit organizations, in connection with the introduction of Chapter 25 of the Tax Code of the Russian Federation (due to a decrease in the base rate of corporate income tax, from 43% to 24% and then up to 20%). Until 2002, banking, brokerage and insurance organizations in the Russian Federation paid income tax at a rate of 43%, while for other segments of the economy the income tax rate was 35%. At present, credit institutions pay income tax on their profits at the basic, generally established rate of 20%.

In addition to the general income the same as for all taxpayers, the income of "the bank which is subject to profit taxation includes: interest from the placement of funds by the bank, provision of loans and credits; fees for opening and maintaining a customer bank account; payment for the collection of cash, bills, payment and settlement documents and cash services for clients; income from foreign exchange transactions, as well as from the purchase and sale of precious stones and precious metals; other income related to banking" [17].

Thus, the peculiarity of banks' incomes is that the main part of them belongs to incomes that other profit taxpayers relate to other taxes and are independent in terms of taxation as part of non-operating income. For banks, these incomes are directly related to the sale of their specific services. It should also be noted that the costs common to all taxpayers have certain characteristics for commercial banks. For example, in accordance with the provisions of Article 260 of the Tax Code of the Russian Federation, banks are classified as taxpayers, for whom the amount of repair costs is regulated. In Article 264 of the Tax Code of the Russian Federation, expenses for maintaining their own security service to perform the functions of protecting banks and business operations and saving assets, etc. are allocated.

Another tax paid by banking organizations is VAT. There are three VAT rates in the Russian Federation (0%, 10% - preferential, and 20% - basic). Banking operations, with the exception of cash collection operations, are not subject to value added tax. The provision of a loan in cash is also exempt from the VAT. At the same time, all other banking transactions and services are subject to taxation at the basic rate of 20%.

It should be noted that although transactions that are and are not subject to the VAT are described in Chapter 21 of the Tax Code

of the Russian Federation, in practice it is very difficult to separate a taxable transaction from the one which is not subject to the value added tax. In addition, there is no special tax in the RF that reflects the specifics of banks' activities. At the same time, as it was noted above, they pay similar taxes as other business entities.

3 Results

As the analysis and assessment of the methodology for calculating and levying income tax showed, in the Russian Federation, in general, there is a low income tax rate for the banking sector of the economy. However, despite this, it should be noted that the current taxation mechanism of banking organizations in the RF has a number of difficulties. This applies both to the problems of interpretation of the relevant chapters of the Tax Code, regulating the procedure of paying corporate income tax and value added tax, and to the absence of incentives for banks lending science-intensive industries and the real sector of the economy. One of the difficulties in calculating the tax on profit of organizations is the task of attributing income or expenses to the sale of banking services or non-operating expenses, which directly distorts the real financial result of banks' operations. It should also be noted that in world practice, as a rule, progressive taxation is applied to excess profits of credit institutions (with an increase in taxable profit, the tax rate rises).

In Russia, unlike in many foreign countries, there is no progression in the method of calculating and levying income tax. Let us analyse the indicators of the structure and dynamics of taxes paid to the budget using the example of one of the largest banks in the Russian Federation, public joint stock company (PJSC) Sberbank of Russia for 2016-2018. At present, PJSC Sberbank of Russia is the leader of the Russian banking system and, accordingly, is a fairly stable and large payer of corporate income tax. One should begin the analysis of the timeliness and completeness of paying taxes to the budget with determining the tax burden, that is, the ratio of taxes paid during the tax period to the amount of revenue [18]. In the case that the tax burden is calculated according to the method recommended by the Federal Tax Service of Russia (tax burden = S paid taxes × 100%/S of revenue per year, excluding VAT), then the tax burden of PJSC Sberbank of Russia as of 01.01.2019 amounts to 10.6%, while on average in other sectors of the Russian economy (including the real sector) - 22.8%. Table 1 presents data on the amount of taxes paid by Sberbank of Russia, according to its annual reports.

The data in Table 1 shows that there was an increase in the expenses of paying taxes in 2018 compared to 2016 by 103,807 million rubbles (117.3%). Analyzing the indicators in Table 1, it can be noted that most of the bank's tax expenses (excluding insurance contributions to extra-budgetary social funds) fall on income tax (in 2018, it accounted for 83.5% of the bank's tax expenses). At the same time, in the general structure for the period from 2016-2018, this tax tends to grow, while other taxes and fees tend to decrease. In particular, in 2018 compared to 2016, there was an increase in expenses of PJSC Sberbank of Russia for the payment of income tax by more than 4 times.

Table 1. Changes rate in the expenses of Sberbank of Russia for the payment of taxes by their types for 2016-2018 (million roubles,%)*

No.	Type of Tax	2016	2017	2018	Changes, mln. rub. (+ -)	Changes Rate, in % 2018/2016
	Total expenses of the bank for the payment of taxes, including:	88513	149605	192320	100380 7	117,3
1.	Profit Tax	53412	120418	165039	111627	482,4
2.	VAT	25560	19068	21180	-4380	-17,1

3.	Property Tax	6563	6689	5226	-1337	-20,4
4.	Land Tax	251	248	242	-9	-3,6
5.	Vehicle Tax	55	55	54	-1	-1,8

*Source: the table was compiled by the author based on the reporting data of PJSC Sberbank of Russia for 2017-2019 [19].

As the data in Table 1 show, in the structure of tax deductions of Sberbank of Russia, the second most important fiscal tax is the VAT. In 2018, there was an increase in the bank's expenses for VAT payment by 2,112 million roubles (11.1%), and in comparison with 2016 - a decrease by 4380 million roubles (7.1%), which was mainly due to an increase in the list of benefits for this tax and a decrease in non-banking operations. Let us note that the VAT is a rather specific tax for banks, due to the fact that most banking operations are not subject to the VAT taxation. This is due to the fact that the price of banking services is very sensitive to changes, and their increase by 1-2% can lead to a sharp decrease in the bank's profitability, and if you impose VAT on these operations, then their price will increase by 10-20%, which will lead to the collapse of the banking system. In this regard, only an insignificant part of operations carried out by banks are subject to the VAT, while most of these operations do not relate to the banking ones.

Thus, as follows from the data in Table 1, direct taxes prevail in the structure of the bank's deductions. The difference in the ratios between direct and indirect taxes, in contrast to organizations in the field of entrepreneurship, is explained, first of all, by the imposition of the VAT on a limited range of operations and the exemption of all banking services (except for cash collection).

Despite the stimulation of the Russian banking system by means of a relatively low rate of income tax, the mechanism for forming the income tax base still does not allow credit institutions to develop to the full extent. The system of banks' taxation, in conditions of the economic modernization, should be the economic lever with the help of which it will be profitable for the manufacturer to develop production, especially in the innovation sphere. The current high interest rates on loans significantly increase the cost of Russian products, significantly reduce their competitiveness and enterprises do not have sufficient funds for self-development.

In our opinion, in the Russian legislation, in the taxation mechanism, it is necessary to provide for the possibility of applying a lower income tax rate for credit institutions in the case if they systematically direct profits not to pay dividends, but to lend the innovative activities, science-intensive industries and the real economic sector. The real sector of the economy is intended to solve the problems of import substitution in Russia; therefore, it should have advantages in obtaining loans. At the present stage, the Russian state can and should use the tax mechanism to timely solve urgent problems of the real situation in the economy taking into account the past experience of overcoming the crisis and the current state of the economy, as well as functioning in the regime of sanctions and restrictions. The differentiation of tax rates on the received profit, for credit institutions, in the context of the types of their activity and received profit may be as follows:

- lending to innovative activities and science-intensive sectors of the economy (including IT technology) - 10%;
- lending to the real sector of the economy, as well as social entrepreneurship at a reduced rate of 13%;
- lending to other operations, not lower than the basic rate - 20%.

It is also possible to conduct expert assessments on the feasibility of introducing an increased income tax rate (up to 25-30%), for banks on income received from speculative transactions, operations with financial and foreign exchange transactions. This measure will make it possible to compensate for budget losses due to the introduction of a low tax rate for lending to innovative activities, science-intensive industries and the real sector of the economy. Despite the high rate of profit

taxation, banks are most likely not to give up speculative operations, since they are often the simplest and most profitable [11]. It should be noted that for a long time in some countries a special additional tax has been levied on foreign exchange and financial transactions with a high level of profitability. For example, such taxation takes place in the USA, Great Britain, Sweden, China and in a number of other countries.

In turn, credit institutions need to maintain a differentiated loan rate, with the arrangements of its application in the loan agreement. For example: if a loan is approved at 13% per annum, and its goal is achieved (a positive outcome), the loan rate can be reduced to 10% per annum. As a result, a triple effect respecting the interests of all participants is achieved:

- for a bank client - a loan with a low interest rate, which gives opportunities for growth and development of their own business;
- for a credit institution - taxation of its own income at a reduced rate;
- for the state - investment growth and development of priority sectors of the economy.

Thus, differentiating the income tax rate by types of banking operations, services and transactions, as well as strengthening control measures and sanctions, in cases of criminal and illegal activities of banks, it is possible to fully realize the fiscal and regulatory potential of the banking taxation mechanism, and more successfully solve development problems of modern priority industries and sectors of the economy.

4 Discussion

In conditions of difficult access to foreign financial sources for credit institutions in Russia, the creation of the resource base occurs mainly due to the savings of the population and investments of the corporate sector [12]. Regulation of the tax component in the finances of commercial banks should allow them to function as economically stable taxpayers and act as a reliable source of budget revenues.

The data in Table 2 demonstrate that the fiscal role of taxes from the banking sector of the economy in the formation of the consolidated budget revenues of Russia remains low. So, the share of taxes received in the consolidated budget of the Russian Federation from the banking sector of the economy, in the total volume of taxes and fees amounted to 2.5% in 2017, 1.7% in 2018 and 2.2% in 2019. (Table 2) This can be explained both by the insufficient development of the banking system in Russia, in comparison with foreign countries, and by the orientation of the current taxation mechanism towards providing only banking services and performing banking operations related to attracting and placement of attracted funds.

Table 2. The rate of change in tax receipts to the consolidated budget of the Russian Federation from credit institutions for 2017 - 2019 (billion roubles, in%)

Indicators	Billion roubles			Changes Rate, 2019/2017/2018 (in %)		
	2017	2018	2019	2018 /2017	2019 /2017	2019 /2018
Total receipts, including:	17476,3	21328,5	22757,0	122,0	131,7	106,6
From credit institutions	436,7	362,6	500,7	83,0	114,6	138,1
Specific weight, %	2,5	1,7	2,2	-	-	-

* The table was compiled by the author based on the reporting data of the Federal Tax Service of Russia (2018-2020) and the Federal State Statistical Service of the Russian Federation (2018-2020).

According to the data in Table 2, one can say that despite the overall increase in tax revenues to the consolidated budget of the Russian Federation by 22.2% in 2018, the volume of taxes paid by credit institutions amounted to 362.6 billion roubles, which is

17.0% lower than the same indicator in 2017. This can be explained by a decrease in the liquidity of the Russian banking system and a significant reduction in the number of regional banks in 2018. Some of the regional banks were closed because of the shadow activity, i.e. the use of illegal money laundering schemes in practice. However, other banks (mainly small and medium-sized banks) were actually driven out of the financial market. It is known, that in the countries with developed economies, both large, medium and small banks function to the full extent. The problem of low capitalization of Russian banks and the banking system as a whole is well known. Unfortunately, in recent years, the Bank of Russia has been trying to solve it by administrative methods exclusively, raising requirements for the minimum size of banks' own assets.

Analysis of tax revenues to the consolidated budget of the Russian Federation in 2019 in comparison with 2018 shows an increase in the share of tax revenues from the financial sector in the total volume of tax revenues to the budget. So, according to table 2, one can see that the volume of taxes paid by credit institutions to the consolidated budget of the Russian Federation amounted to 500.7 billion roubles in 2019, which are 138.1 billion roubles or 38.1% more than in 2018. The main factor in the growth of tax deductions is an increase in the income of credit institutions; among other factors, there is an increase in transactions with government securities.

The Republic of Dagestan (RD) is one of the most important strategic subjects of the North Caucasian Federal District of the Russian Federation. It is known that the Republic of Dagestan lags significantly behind the national average in terms of the main indicators of the socio-economic development per capita and is one of the most subsidized regions of the Russian Federation.

Let us consider the role of banks in the formation of the sector structure of tax payments in the Republic of Dagestan from 2017 to 2019. The banking system of the Republic of Dagestan has 94 credit and cash institutions, including 2 own credit institutions, four branches of credit institutions in other regions (including the Dagestan branch of PJSC Sberbank of Russia), 88 internal structural divisions of credit institutions (branches) (May 01, 2020). The data in Table 3 show that the level of tax revenues from credit institutions in the Republic of Dagestan is even lower (less than 2%) than in Russia as a whole.

Table 3. Comparative data on the total volume of tax revenues and the fiscal role of credit institutions in the Republic of Dagestan for 2017-2019 (million roubles)

Types of Taxes and payments	2017		2018		2019	
	Sum, Million roubles	Specific weight, in %	Sum, Million roubles	Specific weight, in %	Sum, Million roubles	Specific weight, in %
Total receipts, including:	33 278,8	100,0	39 278,8	100,0	4535 6,3	100,0
From credit institutions	700,2	2,1	589,2	1,5	771,0	1,7

* The table was compiled by the author based on the reporting data of the Office of the Federal Tax Service of Russia in the Republic of Dagestan for 2017-2019 (reports No. 1-NM, 4nm).

In 2018 in comparison with 2017, due to a decrease in the number of functioning credit institutions, there was a noticeable decrease in tax revenues from the banking sector of the economy in the Republic of Dagestan. So, in the period from 2017 to 2018, regional banks were closed in Dagestan, and the main reasons were the low level of capitalization of regional banks, as well as the use of illegal tax evasion schemes by individual banks.

In the current conditions, it seems expedient to exempt from the profit tax the part of the commercial banks' profit, which is directed to increasing capitalization, that will allow small

regional banks to increase their own capital, since in conditions of high regional differentiation, they provide direct proximity to the regional economy.

In 2019 the situation relatively stabilized, there was an increase in profits of most banking organizations operating in the region. This led to an increase in the share of tax revenues from the banking sector of the economy from 1.5 to 1.7%. In general, such an increase in tax revenues can be explained both by an increase in the profits received by banking organizations, and by an improvement in tax administration of this segment of the economy. Unfortunately, in 2020 we can see the instability in the banking segment of the economy again, caused by well-known world events, which will lead to a decrease in tax revenues not only in the Republic of Dagestan, but in the Russian Federation as a whole.

According to the famous Russian scientist L.I. Goncharenko "Banks, occupying an intermediary position between taxpayers and the budget, have a significant impact on the revenue part of the budget" [7]. According to another Russian researcher, the bank plays the role of a tax intermediary, ensuring the receipt of taxes into the budget [6]. This is confirmed by the following circumstances: credit organizations are obliged to transfer taxes to the budgets of various levels in time and in full extent, and they must do this completely free, contrary to the principles of commercial activity. On the one hand, D.A. Vasiliev views the bank as a commercial organization, and on the other hand, he says it is similar to the bodies of the Federal Treasury. The predominance of the intermediary role of banks is also mentioned by the famous Russian scientist A.Z. Dadashev [20].

Researcher S.V. Klyukovich concludes that in Russia, banks are not considered as specific independent participants in tax relations. At the same time, individual articles of the Tax Code of the Russian Federation establish the status, rights and obligations of banks, which in fact determines their special role in the Russian tax system [21]. At the same time, Professor L. Igonina believes that "the point of view that banks pay little taxes to the budget is not entirely correct and is based on an incomplete understanding of the processes taking place in the credit sphere" [8].

Meanwhile, a well-known Canadian scientist Sanger Toby notes that "the dramatic changes in taxation introduced over the past decades and inspired by the economics of supply have provided the financial sector and some of its highly paid employees with enormous benefits. Tax breaks that have given the financial industry a disproportionate advantage and even further stimulated the speculative behaviour should also be abolished" [22].

Thus, Russian economists focus on the role of banks as an intermediary, pushing it as a taxpayer to the background, although the level of taxation of credit institutions directly or indirectly affects all spheres of the economy, the ability to transfer taxes to the budget in time. Due to the prevalence of aim proper approach to the role of banks in the economy, the low level of tax revenues from the banking sector in Russia is not accidental. In general, as we have noted above, the share of tax revenues to the budget from the banking sector of the economy in Russia is extremely low compared to other sectors. In these conditions, the foreign experience of taxation of credit institutions can play a great role for Russia. In developed industrial countries, significant attention is paid to tax incentives for the development of banking activities. Moreover, they are, as a rule, rather large taxpayers to the budget. The current mechanism of taxation of credit institutions is designed in such a way that it allows to combine the fiscal and regulatory functions of taxes.

Of course, in industrialized countries, the mechanism for calculating and levying taxes from banks has its own individual characteristics. In foreign countries, as well as in the Russian Federation, the main tax paid by banks is corporate income tax. Let us consider the taxation of banks in one of the most

developed countries in Europe - Germany. Considering the taxation system of banks in Germany, it should be noted that taxes paid by banks in this country include personal and corporate taxes on income from financial assets. State banks, which mainly contribute to the economic development and participate in the implementation of state lotteries, are exempted from paying income tax [5]. In Germany, since January 1, 2008, the corporate income tax rate, both for unallocated and distributed income, was 15%, but then it increased to 15.83% [23]. In Germany, when forming the tax base, all expenses incurred by the bank as a result of financial and economic activities are deducted. An important feature of banks' taxation is that interest on loans granted is not subject to corporate income tax.

The taxation of credit institutions in the United States follows the general rules of corporate taxation, where the basic corporate tax rate is 35%. However, the final rate depends on the income received for the year and is determined in the range from 15 to 39%. At the same time, the tax base is reduced by the amount of expenses attributed to bad debts. In the case of a return of their reserve for unpaid loans, banks are entitled to apply the method of return or offset. Credit institutions that do not use the reserve method can eliminate losses by identifying bad debts using methods developed by the regulatory authorities for banks, after which they independently determine the amount of bad debts. At the same time, the United States has a sufficient number of benefits that reduce the taxable base [24]. Among these benefits, the tax exemption for income earned from activities abroad stands out. In addition to the main federal tax in the United States, there are local taxes on bank profits. The rates of these taxes in all states of the United States differ and range from 3% to 9.99%. In many states, local income tax replaces a license that must be purchased, while others have either special taxes or special rules for taxing banking activities.

The US experience demonstrates rather harsh penalties in cases of deliberate non-payment of taxes. According to the current legislation, if the bank has income, the minimum tax must be paid. The system of penalties for violators of tax legislation is created in such a way that it far exceeds the amount of tax collection. In the United States, all documents are submitted to the Data Processing Centre for registration and TIN assignment. Since 2017 in case of non-payment of income tax, a fine is imposed in the amount of 100% of income [9], while in Russia for a similar violation, the amount of the fine is -20% in cases of unintentional non-payment, and in cases of intentional non-payment -40% of the unpaid amount of tax. In the process of forming the tax base, banks exclude expenses incurred as a result of financial and economic activities. As a result, the amount of profit subject to taxation is calculated. The advantage for banks is that interest on loans granted, unlike in Russia, is not taken into account in the taxation of corporate income.

The tax burden in Japan is quite moderate. For example, the share of taxes in Japan's national income is about 26%. In Japan, banks pay almost 50% of their profits in the form of taxes. At the same time, the high level of taxation of banks is compensated by the stimulating industrial policy of the state, which provides broad benefits and tax credits to the real sector of the economy. Research and generalization of foreign experience in taxation of credit organizations allows us to conclude that, despite the peculiarities of each country, taxation acts as the most important tool for the country's socio-economic development. If you do not consider the details, very formally, the tax burden on banking activities in Russia is relatively lower than in industrially developed countries (the USA, Germany, Japan, etc.). However, carefully studying the foreign experience of taxation, one can notice a distinguished regulatory role of the taxation mechanism of the banking sector. It is characterized by a combination of high tax rates, with a system of incentives for lending to the real sector of the economy, as well as harsh penalties for banks deliberately evading taxes.

The relevant governing bodies of different countries are trying to protect their rule of law in various ways, including court

decisions. At the same time, the most important reason for the violation of rights and freedoms is the lack of control, which results in many negative consequences [25]. Well-known scientists note that control is an effective method for the proper functioning of any system, including the proper functioning of the tax system [2]. The mechanism of taxation and liability of banks for tax offenses in this context is no exception.

On December 12, 2014 the Swiss Parliament adopted a federal law on the use of the revised recommendations of the Financial Action Group for Combating Money Laundering, which came into force on January 1, 2016. One of the largest financial "holdings in Switzerland, UBS, has begun checking its Russian clients for compliance with Russian anti-offshore legislation. Taking into account the possible risks, Swiss banks began to work according to the following principle: no notification of controlled foreign companies (CFC) - no account. Credit institutions are asked to provide copies of CFC notices" [26]. If the Russian client has not provided documents confirming the absence of claims from the Federal Tax Service regarding notifications of controlled foreign companies, then the information on transactions on the bank's client's accounts should be sent to the Swiss Legalization Supervision Service.

The use of the above-mentioned most progressive elements of foreign experience in taxation of credit institutions in the Russian legislation will allow, on the one hand, to strengthen the incentive component of the taxation mechanism, and on the other hand, to minimize the risks of banks if they can't identify suspicious transactions on customer accounts.

In the Russian Federation, the bank's accounting policy is developed annually for tax purposes, taking into account the requirements of the tax legislation and regulatory legal documents on the taxation issues of the Ministry of Finance of the Russian Federation and the Federal Tax Service of Russia. However, it should be noted that there are contradictions in these regulations, for example, regarding the imposition of penalties for violations by banks of the requirements of the Central Bank of the Russian Federation. As a rule, Russian courts decide that the measures of administrative responsibility for violations of banking legislation cannot exceed the sanction established by Articles 15.26 of the Code of Administrative and Legal Violations of the Russian Federation, and change the instructions of the Central Bank of the Russian Federation in terms of a fine exceeding this amount. Thus, the size of the fines of the Code of Administrative Offenses of the Russian Federation is incomparable with the fines imposed by the Federal Law of the Russian Federation "On the Central Bank of the Russian Federation (Bank of Russia)". In fact, they are not significant for credit institutions and cannot be a sufficient incentive for them to comply with the law. In this situation, it becomes necessary to eliminate contradictions in legislative acts in order to increase the effectiveness of tax sanctions and simplify their procedures. Strict measures against violators of tax legislation should be combined with measures aimed at maximizing the simplification of the taxation mechanism. In this context, one should agree with the recommendations of the well-known tax expert Ch. Maklur, who immediately after the collapse of the USSR recommended that new countries build exceptionally simple tax systems [27].

5 Conclusion

Thus, as it was shown by our research, the mechanism of taxation of credit institutions in the Russian Federation needs further improvement in order to fully realize the fiscal and regulatory potential. In general, a set of systemic measures to improve the mechanism of taxation of credit institutions in the Russian Federation can be summarized as follows.

First, the creation of tax tactics and strategies in relation to banks-investors, in order to stimulate investment in the real sector of the country's economy from the bank capital.

Secondly, in order to achieve the strategic goal, it is necessary to provide for a differentiated mechanism of taxation of profits of

banking organization in the Russian legislation, with a decrease in its rates when lending to modern priority sectors of the economy;

Third, the reduction in income tax rates for lending to priority sectors of the economy should be simultaneously accompanied by an increase in taxation of speculative transactions and financial transactions with a high level of profitability, which will prevent a decrease in the revenues of the budgetary system of the Russian state in the face of limited resources and current sanctions.

Fourth, to completely exempt credit institutions from paying the VAT, since they do not create added value, but only redistribute it. The exemption of banking operations from the VAT corresponds to the economic content of the tax and the current mechanism of its calculation, since pricing in the market of banking products does not imply the creation of added value.

Fifth, it is necessary to expand the use of progressive elements of the taxation mechanism of credit institutions, the experience accumulated by foreign countries in the current Russian legislation, which will allow banks to minimize the risks if they don't identify suspicious transactions on customer accounts. This can be done by introducing amendments to the Russian legislation on taxes and fees, regulatory legal acts and regulations of the Bank of Russia aimed at combating the legalization (laundering) of proceeds from crime and the financing of terrorism. It seems that the Ministry of Finance of Russia and the Bank of Russia must ensure close cooperation on the improvement of the Russian legislation, its harmonization with the standards of international law, taking into account the provisions of the Guidelines of the Fiscal and Customs and Tariff Policy of the Russian Federation for 2020 and for the period of 2021 and 2022.

The improvement of tax control and counteracting tax crimes mechanisms is a way to ensure the economic security of the state. To be effective, penalties for violations of legislation should not be excessively low. It is necessary to eliminate the existing contradictions in various by-laws, and make the taxation system as convenient and simple as possible, with low costs associated with paying taxes.

In conclusion, we should note that the problems in the sphere of taxation of credit institutions in Russia formulated in this work cannot be quickly eliminated, but the main point is to start moving in this direction, using international progressive models and modern innovative technologies in tax relations

Literature:

- Maniloff, P., Manning, D. Jurisdictional Tax Competition and the Division of Non-renewable Resource Rents. *Environmental & Resource Economics*. 2018; 71(1):179-204. Available from: <https://doi.org/10.1007/S10640-017-0143-6>
- Mikes, A. From counting risk to making risk count: Boundary work in risk management. *Accounting, organizations and society*. 2011; 36(4-5):226-245.
- Freebairn, J. Opportunities and Challenges for CGE Models in Analysing Taxation. *Economic Papers*. 2017; 37(1):17-29. Available from: <https://doi.org/10.1111/1759-3441.12202> (date of access 03.07.2020).
- Phua, Y.S., Abernethy, M.A., Lills A.M. Controls as Exit Barriers in Multiperiod Outsourcing Arrangements. *Accounted Review*. 2011; 86(5):1795-1834.
- Vylkova, E.S.: *Taxation in Germany: monograph*. St. Petersburg: North-West Institute for Advanced Studies of the Federal Tax Service of Russia, 2013. p. 207-210. ISBN 978-5-94226-050-7.
- Vasiliev, D.A. The role of banks in tax administration. *Taxation, accounting and reporting in a commercial bank*. 2007; 7:38.
- Goncharenko, L.I. Methodology of taxation and tax administration of commercial banks in Russia. Dissertation for the degree of Doctor of Economics. Financial Academy under the Government of the Russian Federation, Moscow, 2009.
- Igonina, L.L. Banks and the investment process. *Finance and credit*. 2015; 27(315):2-9.
- Kichigina, A.K., Konvisarova, E.V. Comparative characteristics of taxation of profits of commercial banks in Russia and abroad. *Taxes and Taxation*. 2016; 6:457-465.
- Karpova, O.M., Mayburov, I.A., Fan, Y. Prospects and Problems of Realization of the VAT Neutrality Principle in Russia and China. *Journal of Tax Reform*. 2020; 6(2):124-141. Available from: <https://doi.org/10.15826/jtr.2020.6.2.078>
- Lantsova, N.M., Zyryanova, O.V. Tax planning of income tax payments in a commercial bank: practice and development prospects. *Bulletin of the educational consortium. Central Russian University. Series: Economics and Management*. 2018; 11:82-85.
- Shchurina, S.V., Vorobieva, M.A. Forecasting the financial performance of banks to ensure their stable development. *Economics and Management*. 2018; 1:70-79. Available from: <https://doi.org/10.26794/1999-849X-2018-11-1-70-82> (date of access 15.08.2020).
- Musaeva, K.M., Dzhaparova, L.G. The system of taxation of credit institutions and its efficiency. *Finance and Credit*. 2018; 24(2(770)):304-314.
- Musaeva, K., Mirzabalaeva, F., Mirgorod E., Alieva, P., Kerimova, Z. The implementation of the fiscal and incentive potentials for regional taxes in the constituent entities of the Russian Federation. *Espacios*. 2019; 40(10):23-25.
- Mayburov, I.A. Challenges and Prospects of Taxation in the Digital Economy: Symposium "Theory and Practice of Tax Reforms" as a Case of Focused Discussion in the Post-Soviet Space. *Journal of Tax Reform*. 2019; 5(2):96-106. Available from: <https://doi.org/10.15826/jtr.2019.5.2.062>
- Tax Code of the Russian Federation (Parts I, II). *Sobranie Zakonodatel'stva Rossiiskoi Federatsii [SZ RF] [Collection of Legislation of the RF]* 03.08.1998, No. 31, Item 3824; 07.08.2000, No. 32, Item 3340.
- Federal Tax Service of Russia: official website. *Statistical tax reports of the Federal Tax Service of Russia for 2017-2020*. Available from: <https://www.nalog.ru> (date of access 20.08.2020).
- Budnikova, O.N. Cross-country comparative analysis of the tax burden in the banking sector of the economy (on the example of Belarus, Russia, Lithuania and France). *Perm Financial Journal*. 2018; 2:99-114.
- Sberbank. *Reporting data of PJSC Sberbank of Russia for 2017-2019*. Available from: <https://www.vbr.ru/banki/sberbank-rossii/officialnye-resursy/> (date of access 07.08.2020).
- Dadashev, A.Z.: *Taxation of commercial banks in the Russian Federation*. Scientific manual. Moscow: Book World, 2008. p. 7-30. ISBN 978-5-8041-0330-0.
- Klyukovich, S.V. Taxation of commercial banks in the Russian tax system. *Terra Economicus*. 2011; 9(1):70-72.
- Sanger, T.: *Fair Shares How Banks, Brokers and the Financial Industry Can Pay Fairer Taxes*. Canadian Centre for Policy Alternatives, 2011. ISBN: 978-1-926888-61-3. Available from: <https://www.policyalternatives.ca/publications/reports/fair-shares> (date of access 25.09.2020).
- Dzhaparova, L.G. The system of taxation of credit institutions: the experience of industrial countries. Competitiveness in the global world: economics, science, technology. 2017; 12:1326-1328.
- Aliev, B.Kh., Musaeva, Kh.M.: *Tax systems of foreign countries: a textbook for university students studying Economics*. Moscow: UNITI-DANA, 2015. ISBN: 978-5-238-02473-8.
- Lobban, M. Habeas Corpus, Imperial Rendition and the Rule of Law. *Current legal problems*. 2015; 68(1):27.
- Shapkina, E.A., Brykin, K.I. Compliance in the banking sector: checking the observance of legislation on controlled foreign companies. *Actual Problems of Economics and Law*. 2017; 11(1):79-88. Available from: <https://doi.org/10.21202/1993-047X.11.2017.1.79-88>
- Maclur, C.E. Tax policy for Russia. *World economy and international relations*. 1993; 8:37.

Primary Paper Section: A

Secondary Paper Section: AH

LEGAL ISSUES AND PRACTICAL PROBLEMS IN THE MANAGEMENT OF THE SECURITIES PORTFOLIO IN SLOVAKIA

†TOMAS PERACEK

*Comenius University in Bratislava, Faculty of Management,
Odbojarov 10, 820 05 Bratislava, Slovak Republic
e-mail: †tomas.peracek@fm.uniba.sk*

Abstract: Securities are an integral part of the basic instruments of the capital market not only in the conditions of the Slovak Republic. In practice, several contractual types contained in the Securities and Investment Services Act are used in securities trading. It is primarily an agreement on the sorting of the securities portfolio, which is used by securities traders. However, this contract consists of several types of contract, which address the issue of procuring the purchase or sale of a security, its safekeeping and administration. In this article, we focus on the examination of individual contract types / activities, which together as a whole represent a contract on the management of a securities portfolio by a securities trader. With the help of scientific research methods as well as with the use of scientific and doctrinal interpretation in Slovak but also foreign professional literature and as case law, answers will be provided to selected application problems from practice. A comprehensive legal examination of the agreement on the management of the securities portfolio in the conditions of the Slovak Republic is the main goal of this paper, which belongs to the area of business and financial law with certain overlaps in economics and financial management.

Keywords: contract, financial and business law, portfolio management, securities,

- assess the legislation as a whole and, if appropriate, make proposals *de lege ferenda*.

According to the nature of the article, we use several scientific methods of knowledge. For the knowledge of the law, we consider it appropriate to use the method of logical analysis to examine the legal status and legislation as well as abstraction. Using the comparative method, we make available the different opinions of theorists, whether on the appropriateness of legislation or on the interpretation of individual legal institutes. Due to the experience from the practice of law in some parts, we also use a doctrinal interpretation. The primary source from which we draw ideas are legal regulations as generally binding formal sources of law in the Slovak Republic. We supplement these sources with the secondary source, which is the decision-making activity of Slovak and Czech courts. It aims to unify the interpretation of the disputed legal institutes. Within the source apparatus, scientific and professional literature occupies a special place.

3 Securities portfolio management agreement in general

The contract on portfolio management as the last contractual type is contained in § 43, Section 1 to 6 of Act No. 566/2001 Coll. on Securities and Investment Services, as amended (hereinafter referred to as the "Securities Act"). The indirect object is a portfolio consisting of investment instruments, other securities or cash intended for the purchase of investment instruments. Other professional literature (Bajus, 2011) defines a portfolio of securities as a stock of various securities held by an investor. The aim of creating a portfolio of securities is to diversify risk, because holding securities allows the investor to obtain an adequate rate of return on the capital invested at a relatively low risk and obtain the highest possible rate of return on invested capital.

As per § 43 Part 1 of the Securities Act, a portfolio management contract, which can only be undertaken by a securities trader, manages the client's portfolio based on the manager's decision within the scope of the contract for which the client undertakes to pay remuneration. A formal condition for the validity of a portfolio management agreement is its written copy. However, if an agreement were an oral contract, it would be affected by a defect of the absolute invalidity of the legal act. The rights and obligations arising from the concluded portfolio management agreement are outlined only by the legislator, which leaves unlimited freedom to the parties with a vague reference to the agreement on the purchase of securities, mandate and commission agreement on the purchase or sale of securities, and contracts and custody of documents securities and the securities administration contract. In this connection, Eliáš (1999) states that the Paragraphs from § 30 to § 53f of the Securities Act regulating the issue of securities contracts constitute a *lex specialis* in relation to Act No. 40/1964 Coll. The Civil Code as amended (hereinafter referred to as the "Civil Code") and Act No. 513/1991 Coll. Commercial Code as amended (hereinafter referred to as the "Commercial Code"). These two codes therefore apply ancillary to all securities contracts.

3.1 Commission method of buying or selling a security

Arranging the purchase or sale of a security is the basic activity of a securities trader as a manager within the scope of portfolio management. He may perform this activity primarily in a commission manner. In this way, the manager, as a commission agent, undertakes to arrange for the purchase or sale of a security for his client in his own name as a client on his own account or to act to achieve this result and the client undertakes to pay him remuneration. In practice, this means that the objective of the contract will be met if the manager succeeds in selling or buying the security. The second possibility when the contract expires upon fulfillment is also the situation when the purchase or sale

1 Introduction

The capital market is understood as a system of institutions and instruments ensuring the movement of medium and long-term capital between economic entities through various forms of securities. Unlike the monetary market, the circle of entities operating on the capital market is wider and the organization of the market is also more diverse (Dermine, 2015). An integral part are stock exchange trades as special trading contracts. The key feature of these contracts is that they are traded on a stock exchange that differs from other markets by its high formal organization. The transfer of capital in the form of securities which are concluded on behalf of clients by securities traders as a result of portfolio management agreements. The portfolio of economic literature (Chovancová and Árendaš, 2016) is understood as a combination of investment opportunities in which the investor invested his capital. A portfolio investment is an investment in a combination of assets and, according to (Macíková et al., 2018), may be a combination in both the primary market and the secondary market.

Securities trading in the Slovak Republic has never met with the interest of the population. The lack of interest of the public as well as the vagueness of the legal regulation may result in a lack of interest of lawyers to examine this issue in more depth, despite its undoubted importance in business practice. The issue of financial markets is addressed by several experts, especially in the field of economic theory. This issue is a legal prism, and it is the legislative framework that determines the rules of the game. For this reason the article seeks to contribute to the presentation of the legal status of the management of the portfolio of securities agreement. Therefore, a comprehensive review of the issue of contractual management of the securities portfolio from the point of view of valid and effective Slovak legislation would be an important addition to the legal literature. The article is divided into four chapters, each of which comprehensively examines one of the activities of a securities trader within the management of the client's portfolio.

2 Aim of the paper and methodology

The main goal of this scientific article is to examine its legal regulation in the legal order of the Slovak Republic and to identify the agreement on the management of the securities portfolio. In addition to the main goal, we have chosen two sub-goals, which are:

- confirm or reject the hypothesis that the securities portfolio management agreement represents separate contractual types in Slovak commercial law.

of the security did not take place, but the manager performed the contractual activity with professional care (Judgement of the Supreme Court of the Czech Republic No. 32 Cdo 3464/2008).

The Securities Act dispositively determines the written form for the client's instruction, on the basis of which the manager is to procure the sale or purchase of a security. According to Čižo et al. (2020) this obligation can be modified by deviation on the basis of the contract, but only if the client's instruction was not given in writing.

According to Lachlan (2014), if the subject of the contract is the obligation of the manager to arrange the sale of a security, he has the right to request the client to hand over the security to him, in the case of a paper security. When selling a book-entry security, it is necessary to ensure the suspension of the right to dispose of the sold security in the records of the Central Securities Depository or in other separate records. It follows from the substance of the case that during this time the client is not entitled to dispose of the security (Judgement of the Supreme Court of the Czech Republic, No. 29 Cdo 5239/2008). In this context, however, the manager can also fulfill his obligation in such a way that he sells a security from his property to the client, or otherwise buys it from him. However, this can only be done if the portfolio management agreement allows it. In the literature, such a procedure is called (Polišenská, 2016) as "self-entry of the manager."

It is assumed that the price of the security is determined by agreement of the parties in the contract or in the given instruction. However, if the manager has the opportunity to sell the security at a higher price than agreed, he is obliged to do so without the client's consent. The same applies to the possibility of buying a security at a price lower than agreed. If he did not do so, he would bear the risk of liability for the damage caused to the client. In general, however, the manager's obligation to buy or sell a security for the client at the most advantageous price that could be achieved with the required professional care applies.

The provisions of § 34 and § 35 of the Securities Act address the issue of the transfer of ownership of a security. It follows that the securities entrusted to the manager for sale are the property of the client until they are acquired by a third party. Documentary securities acquired for the client on the basis of a contract by the manager are transferred to his property on the day of the endorsement, provided that their subsequent handover to the client is also required. In the case of dematerialized securities, the decisive event is their entry in the account of the holder or the holding account of the manager

Among the other managerial duties of the manager, we include in particular the procedure with the necessary professional care according to the client's instructions. It is especially important to protect the interests of the client, notifying all circumstances that may affect the change of orders. In certain cases, it is also recommended to take out insurance, but only if specified in the contract.

It follows from § 580 paragraph 1 of the Commercial Code, which also applies to this activity in support, that if the contract does not specify something else, if he cannot fulfill the content of the contract, the manager is obliged to use a third party to fulfill the contract. According to Peráček et al. (2018) however, the contract may exclude the possibility of using the services of a third party. The following § 580 paragraph 2 stipulates that if he uses another person to fulfill the obligation, he is liable as if he had procured the matter himself.

The client does not create any rights or obligations in relation to third parties as a result of the activities of the manager, because in this case the manager acts in his own name. However, the Securities Act allows the client to directly demand from a third party the issue of a thing or the fulfillment of an obligation procured for him by the manager. However, this only applies if the manager cannot do so for reasons on his part.

In the case of these activities, the Securities Act does not specifically address the issue of remuneration for the manager. The obligatory part of the contract is only the determination of the client's obligation to pay compensation for this activity. The determination of its amount, maturity and other conditions is left to the agreement of the contracting parties within the optional requirements of the contract. In the event that the contract does not contain them, § 587 and § 588 of the Commercial Code the method of determining remuneration shall apply in the alternative. It is generally assumed that the manager is entitled to remuneration that is proportionate to the activity performed and the result achieved, considering the remuneration normally provided for a similar activity at the time of the conclusion of the contract. The concept of ordinary remuneration must therefore be interpreted in the light of existing economic practice, which is respected in this area (Nosková, 2019).

Final payment of remuneration resp. the right to its payment belongs to the manager only after he has fulfilled his obligations and submitted a report on the result of the installation and billing. However, the remuneration includes two components, the costs of the manager and the remuneration itself. In particular, the law addresses the issue of reimbursement of costs that are part of the commissioner's fee and are paid together with remuneration. As Gavurova et al. (2019) these are costs that the manager has inevitably and efficiently incurred in carrying out the agreed activities, such as travel, telephone, etc. Overall, therefore, the remuneration comprises two components, which consist of remuneration and reimbursement of the operator's costs.

3.2 Mandatory method of procuring the purchase or sale of a security

As part of portfolio management, the manager may arrange for the purchase or sale of a security in a mandated manner. This is a specific procedure contained in Section 36, Paragraphs 1 and 2 of the Securities Act within the framework of a mandate agreement on the procurement of the purchase or sale of a security. In such a case, the manager undertakes to buy or sell the security on behalf of and for the account of the client in accordance with his instructions or to act to achieve this result, and the client undertakes to pay him remuneration. Their mutual rights and obligations are governed by § 33 of the Securities Act and § 566 to § 576 of the Commercial Code on the Mandate Agreement. Not only those provisions that contravene the Securities Act apply (Horecký, 2018).

Like the commission, the activity of the manager can be linked to the result t. j. as his obligation to arrange for the purchase or sale of a security on behalf of the client and on his behalf. The second possibility is that the subject of the contractual relationship will only be the performance of activities aimed at the sale or purchase of a security. Therefore, the purpose of the contract will be fulfilled if the security can be sold or bought; respectively the purpose of the contract will be fulfilled even if the purchase or sale of the security has not taken place, but the manager has performed the agreed activity with professional care (Haentjens, 2015).

The task of the manager is therefore to arrange on behalf of the client to procure the purchase or sale of securities, or only to carry out such an activity for a certain fee. Of course, the manager is professionalism as well as proceeding with professional care, as this is the main content of his business activities. His other responsibilities include following the client's instructions and acting in accordance with his interests. The manager should know and communicate to the client all information found in connection with the procurement of purchase or sale of securities. However, he should only communicate to him the information that has at least a potential impact on the change of instructions already given.

The expression of confidence in the professionalism of the manager results from the possibility to deviate from the client's instructions, if necessary (Kral et al., 2019). In practice, these will be situations where it is not possible to connect the parties in

time. Even in such an exceptional case, however, it is forbidden to deviate from the client's instructions if this follows from the concluded contract or from previously stored instructions. In particular, it is necessary to support § 33 paragraphs 2 and 3 of the Securities Act. According to him, if the manager has the option, he is obliged to sell the security at a higher price or buy the security at a lower price than stated in the instruction, even without the client's consent. According to Judgement of the Supreme court of the Slovak Republic No. 3 Obo 186/2007, otherwise, as in the commissioned manner, he would be liable for the damage he would cause to the client. In the absence of a price determination in the client's order, the law imposes, as in the case of a commission to buy or sell a security for the client's client, at the most advantageous price that could be achieved with professional care.

According to Hajduova et al. (2019) in this case, the legislator allows the manager to be represented by a third party, but with the risk of being held liable for any damage caused by the third party. The possibility to be represented cannot be used only in the case of a contractual prohibition.

The client's obligations primarily follow from the Commercial Code and the Securities Act. In the first place, it provides the manager with all the necessary things and information necessary for the implementation of the subject of the contract in time, except for those which he has to procure himself. However, the performance of certain legal acts cannot be carried out without a power of attorney (Koleva, 2019). The client is obliged to issue this immediately in writing. Despite the fact that the power of attorney essentially follows from the content of the securities portfolio management agreement, it is directed against third parties and legally has the legitimacy of the manager to act on behalf of the client. The provisions of the Commercial Code governing the mandate agreement do not address the consequences of exceeding the authorization. As follows from Judgement of the Supreme Court of the Czech Republic No. 33 Cdo 4385/2007, for this reason, it is necessary to proceed from the general legal regulation of representation on the basis of the power of attorney contained in the Civil Code.

Given the considerable variety of activities that a trustee must perform when procuring the purchase or sale of securities for a trustee, it cannot be ruled out that he will take over other things for him than just paper securities, such as contracts and the like. Subsequently, however, it is the agent's obligation to issue them to the client without undue delay.

In this case, the Commercial Code resolves the issue of the damage caused in the same way as in the case of the Securities Commission, with liability for damage to items taken over. It is also possible to eliminate the risk by optional insurance, while compulsory insurance is required only if required by the contract or if the client so requests, but always only on his account Grancay et al. (2015).

In the commission or mandated method of procuring a purchase or sale, the manager is obliged to proceed with the necessary professional care. In the case of procuring the sale of a security that has certain defects, its role is more demanding, as the other party would not have to show interest in such a security. However, the Commercial Code also provides for a situation where the buyer would be aware of the existence of defects in the security at the time of concluding the contract for its purchase and would still be interested in it. In such a case, this would be a special reason to exclude the manager's liability for this lack of security. However, it is also true that the buyer's liability for defects is not excluded if the security should have had certain properties, but in fact did not. In this situation, in the opinion of the Supreme Court of the Slovak Republic No. 3 Obo 55/2010, the knowledge of the buyer is no longer examined with regard to professional care, but only with regard to care appropriate to the situation. The law of the Slovak Republic allows a contract that transfers ownership of a security to contain a *tel quel* clause (as it is), resp. "Accepted and approved". Its application relieves the manager of liability for defects in the

security sold and the acquirer can no longer claim liability for the defects of the security.

Within the management of the securities portfolio, it is possible to negotiate remuneration as a whole for all activities, or even in part. Should the parties agree on remuneration for such procurement of the purchase or sale of a security, the Securities Act presupposes an agreement on the amount of remuneration. In the event of an omission, its amount shall be determined in accordance with custom at the time of concluding the contract for procuring the purchase or sale of the security. The right to payment would arise for the manager after the proper performance of the agreed activity, regardless of whether it brought the expected result or not. However, in terms of § 571 paragraph 1 of the Commercial Code, the right to the payment of the agreed remuneration may be conditioned by the result.

If, in connection with the purchase or sale of securities, significant costs are expected to arise, the manager is entitled to a reasonable advance immediately after the conclusion of the contract (Masood et al., 2020). When subsequently determining the amount of remuneration, the parties should agree on whether the remuneration also includes necessary or purposefully incurred expenses necessary to procure the client's affairs. In the absence of this arrangement, there is a legal rebuttable presumption that they are already included in the remuneration. Section 573 of the Commercial Code limits the content of the manager's liability by excluding his liability for breach of the obligation of the person with whom he has entered into a contract for the purchase or sale of securities. An exception may only occur if the contract has guaranteed in writing that the other parties will have fulfilled the obligations to procure the purchase or sale of the securities.

3.3 Custody of securities

As part of the management of the securities portfolio, the Securities Act also allows the manager to deposit paper securities. As Duřová – Spišáková et al. (2017) the negotiation of the rights and obligations of the contracting parties is based on the agreement on custody of paper securities contained in § 39 and § 40 of the Securities Act. It is worth noting that in this case there is no direct reference to the supporting application of the Commercial Code or the Civil Code. However, as this is a remunerated type of contract, it is subject to the provisions of Part Three of the Commercial Code on Commercial Obligations in matters that are not specifically regulated by the Securities Act.

As part of the custody of paper securities, the manager, in the position of custodian, undertakes to take over the paper security for safekeeping in separate or collective custody and the client, as the depositor, undertakes to pay him remuneration. However, the contract must include the identification of the persons who are authorized to handle the certificated security deposited.

As the name implies, only paper securities can be deposited. As part of the harmonization of Slovak law with the law of the European Union, two types of custody of paper securities were introduced. It is a separate storage and a bulk storage (Dumitru and Tomescu, 2020). Collective custody is essential for securities trading, as, (Pauly, 2017), as it makes it possible to speed up transfers of securities, thereby reducing the cost of transactions in these securities. In general, a substitutable paper security is deposited in collective custody and an irreplaceable paper security in separate custody. Separate custody is defined as the deposit of a paper security of one depositor separately from the paper securities of other depositors. The main obligation of the manager is to return to the client the depositor the same paper security that was entrusted to him for safekeeping. At the same time, it is legally liable for damage to the deposited paper security. An exception is the case of impossibility of averting damage even with all professional care (Raisová et al., 2020).

Among the basic duties of the manager, we can include the consistent keeping of records on each paper security deposited in

custody. If the paper security is not already with the manager at the time of concluding the contract, he is obliged to take it over and deposit it immediately. Subsequently, however, he is obliged to protect him with all professional care so as not to lose, destroy, damage or devalue. The client's rights inevitably include his ability to request the return of a paper security at any time, as well as the ability to return the security to the manager, if the concluded portfolio management contract has not expired in the meantime (Nekit et al., 2020).

The possibility exists to declare bankruptcy on the part of the property of the manager. Despite the fact that the occurrence of such a situation in the conditions of the Slovak Republic is rather hypothetical, it is necessary to clarify certain facts. The declaration of bankruptcy means a fundamental interference with the client's property. In order to secure the assets of the bankrupt (manager) and satisfy the claims of creditors, the administrator of the bankruptcy estate will perform actions aimed at handing over the deposited securities to its owners. If it is not possible to return them, for example due to an obstacle to the changed address of the depositor, the insolvency administrator must deposit the non-transferred securities with another custodian under conditions similar to those under which they were deposited. The additional custody costs incurred in this way are borne by the bankrupt t. j. forest manager. However, it is precisely his clients as custodians who are obliged by law to reimburse the costs thus incurred to the administrator of the bankruptcy estate according to the proportions of their shares. Subsequently, they can recover these costs from the bankrupt in bankruptcy proceedings, though with a minimal chance of reimbursement (Sararu, 2016, 2017).

Even within the custody of a security, the manager has the option to transfer the taken over security to another custodian without the client's consent. In practice, this is the so-called secondary custody, the purpose of which is to enable the concentration of custody of paper securities by persons specializing in this activity. It does not matter the person of the manager with whom the client, as the owner of the security, has entered into a contract. However, applying the principle of availability, the portfolio management agreement may exclude secondary custody (Rontchevsky, 2017). When looking for answers to questions of liability for damage, it should be emphasized that the transfer of a paper security to another custodian does not mean the cessation of the manager's liability. He is liable for any damage as if he had the security at his disposal at all times.

3.4 Securities management

The Securities Act deals with the issue of securities management only briefly in § 41 without reference to the supporting application of the Commercial Code or the Civil Code. As part of the administration of securities, the manager, as the administrator, undertakes to perform all legal acts necessary for the exercise and maintenance of rights associated with a particular security for the duration of the contract, and the client, as the owner of the security, undertakes to pay him remuneration.

The mission of the manager is to perform all acts related to the performance and preservation of rights associated with the ownership of a security with professional care, even without the instructions of his client (Mura and Rozsa, 2013). These include, in particular, requiring the fulfillment of obligations arising from ownership, the exercise of exchange or pre-emptive rights attached to a security, provided that the securities portfolio management agreement does not contain different rights or obligations. The manager is also directly responsible by law for the fulfillment of the client's instructions, which must be in writing (Kotásek, 2013). However, in today's age of information age, it is possible to contractually agree on another, most often, electronic form. As part of the step-by-step obligation, the administrator shall duly and timely notify the client of incorrectly given instructions. When managing a dematerialized security, the client is a contractual obligation, upon request by

the manager, to take timely measures to ensure that the manager is entitled to issue orders for the disposal of the dematerialized security to the necessary extent. Ownership of some type of security is also associated with the right to vote, the exercise of which the client may entrust to the manager (Veronesi, 2010). To this end, however, he shall issue him with the necessary power of attorney, within which he may also receive binding instructions on how to vote.

The peculiarity of the security administration is also calculated at the time of holding the security. In this case, it is limited to the time necessary, as it is the legal obligation of the manager to hand it over immediately after the act for which he had to be in his possession. Even in this case, a deviation may occur within the portfolio management. When managing a security, legal liability for damage to the paper security during the holding is also applied. The only reason for the liberation is the impossibility of averting the damage with all professional care. In the case of reimbursement of costs associated with the administration of a security, the remuneration of the manager also includes the costs incurred in the performance of his obligation (Khan et al., 2020).

In general according to Panova (2020), the manager performs legal acts related to the administration of a security on behalf of and for the account of his client. The provisions of the Securities Act and the provisions of the Commercial Code on the mandate agreement shall be used as a support measure to determine other rights and obligations arising from the administration of securities which are not provided for in the Securities Act. Again, there is an exception when the provisions of the Commercial Code on the commission contract and the Securities Act apply. This is the case when the manager has to perform a legal act in his own name and on behalf of the client according to the contract.

3.5 Determination of remuneration and termination of the portfolio management contract

The Securities Act does not pay even minimal attention to the issues of remuneration for the manager of the termination of the obligation under the portfolio management contract. For this reason, it is necessary to apply the general and special provisions of Part Three of the Commercial Code.

The amount of the remuneration in general, not only for the manager, is not one of the essential requirements of the contract, either according to the Securities Act or according to the Commercial Code. Retaliation contracts must only specify the obligation to pay retaliation. Without determining the severance, it could no longer be a portfolio management contract but only a certain hybrid type of innominate contract. We agree with the views of some authors (Ślusarczyk, 2018) that, however, the portfolio management contract is the subject of the trader's business, the purpose of which is to generate profit. Within the subsidiary scope of the Commercial Code, retaliation can be determined in several ways. The first way is the agreement of the parties on the amount of remuneration as well as its maturity. The second option for determining the remuneration would be an agreement in the contract, according to which the method of determining the remuneration for the contracting authority would be determined (Maris, 2017). The last possibility is a legal diction that the client pays the fee that is usually paid for comparable services at the time of concluding the contract under similar business conditions. In our opinion, the solution would also be the issuance of a decree by the Ministry of Finance of the Slovak Republic, which would determine the amount of remuneration for individual activities. Such a procedure is applied e.g. in advocacy in the provision of legal aid, when the Ministry of Justice of the Slovak Republic issued Decree no. 655/2004 Coll. on lawyers' fees and compensation.

The easiest way to terminate a portfolio management contract is to fulfill the obligation on both sides. Other ways of terminating the contract include the expiration of the time for which it was concluded and the agreement of the parties on its termination.

Unlike the portfolio management contract itself, it does not have to be in writing, though this is not recommended. The Commercial Code allows both parties to t. j. the manager as well as the client to terminate the obligation under the contract by termination. As part of arranging the purchase or sale of a security, they may terminate the contract in any way, in part or in full, in any way. If the termination does not specify a later effect, it shall take effect on the day on which the operator became aware or could have learned of it. The legislator does not prescribe the form of termination or the method of delivery, but again for reasons of legal certainty of the parties, it is appropriate to comply with a demonstrable method of delivery (Mucha, 2019). From the effective date of the notice, the manager may not continue the activity to which the notice relates. On the other hand, he is obliged to warn the client to take the necessary measures to prevent the occurrence of damage, which immediately threatens the non-completion of the activities of the manager. Here, however, the legal right of the manager to reimbursement of necessary and purposefully incurred costs, including a reasonable part of the remuneration for the activity duly performed until the termination takes effect (Vedinas and Condurache, 2019).

The Commercial Code does not allow the manager to terminate the contract unilaterally at any time. As stated in the literature (Šebestová et al., 2018), the manager may terminate it, but not until the end of the calendar month following the month in which the notice was delivered to him. As of that date, his obligation to carry out the activity to which he has committed himself also expires. Among other things, if the interruption of such activity could cause damage to the client, he is obliged to notify him of the necessary measures. If the client cannot do them with the help of other persons and requests their performance from the manager, the latter is obliged to carry them out under the threat of possible liability for damage.

The obligation of the manager also expires on the basis of a legal event such as his death, if he is a natural person, or his termination without a legal successor, if he is a legal person. However, he retains the right to reimbursement of purposefully and necessarily incurred costs as well as to a part of the remuneration reasonable to the result achieved in arranging the matter (Langenbacher, 2011).

In the custody and administration of a security, the issue of termination of the portfolio management agreement is regulated in the same way. According to Okanazu (2019) in addition to the fulfillment of the obligation, the expiration of the time as well as the agreement on the termination of the contract, the contract can be terminated. This option can be used by both the manager and the client. However, the difference is in effectiveness. If the contract does not specify a period of notice, the manager may terminate the contract only at the end of the calendar month following the delivery of the notice. The client can do so with immediate effect. A special reason for the manager to terminate the contract is not to collect the deposited securities by the client within the agreed time. An exception is the situation when the contract solves the situation differently (Mucha, 2019). We evaluate positively the statutory guarantee of the manager to secure his rights under the contract and especially the payment of his remuneration by establishing a statutory lien on the securities held and managed by him.

In practice, one negative phenomenon quite often occurs. Clients quite often terminate a portfolio management agreement before the expiration date for speculative reasons. They consider that such a procedure will relieve them of their obligation to pay remuneration to the manager (Przekova et al., 2019). They will be misled by the application of the supporting § 574 paragraph 4 of the Commercial Code, which grants the manager the right to reimbursement of costs as well as a reasonable part of the remuneration for action duly performed until the termination takes effect.

4 Discussion and conclusion

Securities contracts are important economic instruments of the financial market, through which a change of owner of a security takes place. The hypothesis that it is a separate type of contract in Slovak commercial law is confirmed. The Securities Act in § 43 directly enshrines the legal definition of a portfolio management agreement. From this its essential requirements are determined:

- contracting parties, t. j. who is the manager and who is the client,
- the obligation of the manager to manage the client's portfolio on the basis of the manager's decision-making within and within the scope of the contract,
- the client's obligation to pay remuneration to the manager.

It also follows from the theory of law that in order to determine whether it is a contractual type, it is sufficient to determine the essential elements themselves without further specification. However, this does not change the statement that this agreement is strictly or insufficiently regulated by the Securities Act, which in practice can cause several problems. Nor will the procedure of the legislator, which sought to remedy this shortcoming by referring to the regulation of other types of contracts in the Securities Act and the Commercial Code, stand up.

In general, it is possible to agree with the statement of the authors led by Eliáš (1999), who expressed a broader legal opinion that the entire second part of the Securities Act, i. j. the provisions of § 30 to § 53f, which regulate the issue of securities contracts, constitute a *lex specialis* in relation to both the Commercial Code and the Civil Code. As a clear positive, it is necessary to point out the provision of § 261 paragraph 3 letter c) of the Commercial Code, which classifies in the category of absolute commercial obligations all types of obligations from stock exchange trades and their intermediation (§ 642) and remuneration contracts relating to securities. This fact excludes any possible considerations about the application of the Civil Code to the regulation of the rights and obligations of the contracting parties from the portfolio management contract. In this way, the legislator at least managed to eliminate the danger of splitting the legal regime for the implementation of selected types of contracts, which could otherwise comply with the provisions of the Civil Code or the Commercial Code and cause confusion.

Nor does it follow that the legislature prohibits the possibility of concluding other "nominative" contracts relating to the management of securities. However, such a possibility could be expressed explicitly directly in the Securities Act

The legal regulation of all securities contracts, despite the efforts of the legislator, is still insufficient and thus does not fully respect the general trends in the development of European law. As part of the *de lege ferenda* proposals. Therefore, a comprehensive amendment to the second part of the Securities Act should be undertaken. As part of the amendments, the wording of the law should be supplemented not only with legal definitions of all contractual types, but at the same time the individual contractual types and in particular the securities portfolio management agreement examined by us should be expanded in a more appropriate and proportionate manner. The result of such a procedure would be a comprehensive legal regulation, which would be based on the current needs of the Slovak capital market.

Literature:

1. Act No. 40/1964 Coll. Civil Code as amended
2. Act No. 513/1991 Coll. Commercial Code as amended
3. Act No. 566/2001 Coll. on Securities and Investment Services as amended
4. Bajus, R. (2011). Manazment portfolia cennych papierov a analiza investicii. Bratislava: Iura Edition

5. Čižo, E. Lavrinenko, O. Ignatjeva, S. (2020). Determinants of financial development of the EU countries in the period 1995-2017. *Insights into Regional Development 2* (2): 505-522, doi: 10.9770/IRD.2020.2.2(1)
6. Dumitru, O. I., Tomescu, A. V. (2020). European consumer law in the digital single market. *Juridical Tribune-Tribuna Juridica*, 10 (2) 222-238
7. Decree of the Ministry of Justice of the Slovak Republic No. 655/2004 Coll. on lawyers' fees and compensation
8. Dermine, J. (2015). *Bank valuation and value-based management Deposit and loan pricing, performance evaluation, and risk*. New York: McGraw-Hill
9. Duřová Spisaková, E., Mura, L., Gontkovicova, B., Hajduova, Z. (2017). R&D in the context of Europe 2020 in selected countries. *Economic Computation and Economic Cybernetics Studies and Research*, 51 (4) 243 – 261
10. Elias, K. (1999). *Kurs obchodního práva. Obchodní závazky Cenne papiry*, Praha: C. H. Beck
11. Gavurova, B., Kubak, M., Huculova, E., Popadakova, D., Bilan, S. (2019). Financial literacy and rationality of youth in Slovakia. *Transformations in Business & Economics*, 18 (3), 43-53
12. Grancay, M., Grancay, N., Drutarovska, J., Mura, L. (2015). Gravity model of trade of the Czech and Slovak Republics 1995-2012: How have determinants of trade changed. *Politická Ekonomie*, 63 (6), 759-777.
13. Haentjens, M. (2015). *European Banking and Financial Law*. Routledge: New York
14. Hajduova, Z., Klimek, M., Daneshjo, N., Prokopenko, O. (2019). Competitiveness of Franklin Templeton Fund Managers: Do the Fund Managers Exceed the Benchmark? *Journal of Competitiveness*, 11 (2), 70–86, doi: 10.7441/joc.2019.03.05
15. Horecky, J. (2018). Operation and action of a trade union (in terms of Czech Republic labour law). *Central European Journal of Labour Law and Personnel Management*, 1 (1), 17 – 27, doi:10.33382/cejllpm.2018.01.02
16. Chovancova, B. and Arendas, P. (2016). The Stock Market versus the Real Economy and its Indicator GDP, *Politická ekonomie*, 64 (8), 939-952, doi: 10.18267/j.polek.1119
17. Judgement of the Supreme Court of the Czech Republic No. 29 Cdo 5239/2008
18. Judgement of the Supreme Court of the Czech Republic No. 32 Cdo 3464/2008
19. Judgement of the Supreme Court of the Czech Republic No. 33 Cdo 4385/2007
20. Judgement of the Supreme court of the Slovak Republic No. 3 Obo 186/2007
21. Judgement of the Supreme Court of the Slovak Republic No. 3 Obo 55/2010
22. Khan, K.A., Dankiewicz, R., Kliuchnikava, Y., and Olah, J. (2020). How Do Entrepreneurs Feel Bankruptcy? *International Journal of Entrepreneurial Knowledge*, 8 (1), 89-101, doi: 10.37335/ijek.v8i1.103
23. Kotasek, J. (2013). *Pravo cennich papiru*. Praha: C. H. BECK
24. Kral, P., Valjaskova, V., Janoskova, K. (2019). Quantitative approach to project portfolio management: proposal for Slovak companies. *Oeconomia Copernicana*, 10 (4), 797-814, doi: 10.24136/oc.2019.036
25. Lachlan, B. (2014). *European securities law*. New York: Oxford University Press
26. Langenbacher, K. (2011). *Aktien- und Kapitalmarktrecht. Munchen*: C. H. Beck
27. Koleva, Z. (2019). Bulgarian perspectives on the abuse of rights in lights of the Directive 2011/7/EU on combating late payment in commercial transactions. *Juridical Tribune-Tribuna Juridica*, 9 (3), 599-606
28. Macikova, L., Smorada, M., Dorcak, P., Beug, B. and Markovic, P. (2018). Financial aspects of sustainability: An evidence from Slovak companies, *Sustainability*, 10 (7), 2274. doi: 10.3390/su10072274
29. Masood, O. Javaria, K. Petrenko, Y. (2020). Terrorism activities influence on financial stock markets: an empirical evidence from United Kingdom, India, France, Pakistan, Spain and America, *Insights into Regional Development 2* (1), 443-455, doi: 10.9770/IRD.2020.2.1(4)
30. Maris, M. (2017). *Macroeconomic imbalances in economically integrated Europe and its development*. International Scientific Conference on Economic Policy in Global Environment, 195-206
31. Mucha, B. (2019). *Tools to increase the effectiveness of comprehensive management of emergencies affected by climate change in the Slovak republic*. International Multidisciplinary Scientific GeoConference Surveying Geology and Mining Ecology Management, SGEM, 19 (5.4), 573-580, doi: 10.5593/sgem2019/5.4/S23.075
32. Mura, L. and Rózsa, Z. (2013). The impact of networking on the innovation performance of SMEs. 7th International Days of Statistics and Economics, 1036-1042
33. Noskova, M. (2019). *International Business Law*. Comenius University in Bratislava, Bratislava
34. Nekit, K., Kolodin, D., Fedorov, V. (2020). Personal data protection and liability for damage in the field of the internet of things. *Juridical Tribune-Tribuna Juridica*, 10 (1) 80-93
35. Okanazu, O.O., Madu, M.A., Igboke, S. A. (2019). A recipe for efficient and corrupt free public sector. *Central European Journal of Labour Law and Personnel Management*, 2 (1), 29-46, doi: 10.33382/cejllpm.2019.02.03
36. Panova, E. (2020). Determinants of capital structure in Russian small and medium manufacturing enterprises. *Equilibrium. Quarterly Journal of Economics and Economic Policy*, 15 (2), 361-375, doi: 10.24136/eq.2020.017
37. Pauly, J. (2017). *Teoreticke a legislativni zaklady cennych papiru*. Praha: Wolters Kluwer
38. Peráček T., Mittelman A., and Mucha B. (2018). *The Particular Aspects of Procurement Contracts of Trading in Securities in the Conditions of the Slovak Republic*. Springer Proceedings in Business and Economics. Springer, Cham, 175-185, doi:10.1007/978-3-319-92228-7_15
39. Polisenka, P. (2016). *Pravo cennych papiru*. Praha: Wolters Kluwer
40. Przekota, G., Rembeza, J., Mentel, G., Szetela, B. (2019). The relationship between the stock market and the economy: evidence from Central and Eastern European countries. *Transformations in Business & Economics*, 18 (2A), 397-415
41. Raisová, M., Regásková, M., Lazányi, K. (2020). The financial transaction tax: an ANOVA assessment of selected EU countries. *Equilibrium - Quarterly Journal of Economics and Economic Policy*, 15 (1), 29-48, doi: 10.24136/eq.2020.002
42. Rontchevsky, N. (2017). *Code de Commerce*. Paris: DALLOZ
43. Sararu, C. S. (2016). Considerations on the public services in the XXI century. *Juridical Tribune-Tribuna Juridica*, 6, (SI), 160-166.
44. Sararu, C. S. (2017). Administrative litigation systems in Europe. *Juridical Tribune-Tribuna Juridica*, 7 (1), 227-235.
45. Sebestova, J., Majerova, I., Szarowska, I. (2018). Indicators for assessing the financial condition and municipality management. *Administratie si Management Public*, 31, 97-110, doi: 10.24818/amp/2018.31-07
46. Ślusarczyk, B. (2018). Tax incentives as a main factor to attract foreign direct investments in Poland. *Administratie si Management Public*, 30, 67-81. DOI: 10.24818/amp/2018.30-05
47. Vedinas, V., Condurache, G. (2019). The financial independence of the Romanian Parliament *Juridical Tribune-Tribuna Juridica*, 9 (2), 392-401
48. Veronesi, P. (2010). *Fixed Income Securities*. London: John Wiley & Sons,

Primary Paper Section: A

Secondary Paper Section: AE, AG

TEACHERS' OPINIONS AND EXPERIENCES WITH AN INCLUSIVE SCHOOL ENVIRONMENT

^aVLASTA BELKOVÁ, ^bŠTEFAN PETRÍK, ^cPATRÍCIA ZOLYOMIOVÁ

Matej Bel University, Faculty of Education, Ružová 13, 974 11 Banská Bystrica, Slovakia

email: ^avlasta.belkova@umb.sk, ^bstefan.petrik@umb.sk ^cpatricia.zolyomiova@umb.sk

The paper was developed with support under KEGA project no. 040UMB-4/2018 called 046UMB-4/2018 "How do we understand Inclusive Education? Creating an optimal Learning Model".

Abstract: The paper reports part of the results of a study where the teacher's level of education effectiveness in inclusive classrooms (TEIP) was examined. There were 1216 (N) pedagogical employees of various school types and levels who participated in the research in the Slovak Republic (hereinafter SR), out of which 98% were teachers and 86% women. A self-designed questionnaire which included a modified range of the standardised instrument – TEIP was used. Respondents filled in an anonymous questionnaire administered online. The main results show that a relatively high level of effective teaching is demonstrated by teachers who work as special teachers, teachers in special primary and high schools, or work with an SEN student (assistants). Teachers with a higher career grade showed a higher attitude score in the perception of their own professional ability to cooperate. There are stimulating results in the area concerning an ongoing society-wide strategy of integrating students with special educational needs (SEN students) into mainstream education. They will be further analysed and discussed in the context of other variables, as well as student samples that were part of the broader context in this research carried out by the KEGA project.

Keywords: attitudes, teachers, personal experience, students with special educational needs, inclusive environment

1 Introduction

Education has been identified as one of the main conditions for human independence and the fulfilment of one's life ideas. Society should strive to create an environment that does not restrict access to education for people with disabilities. Inclusive education is considered appropriate for improving the inclusion of people with disabilities (Čerešňová et.al, 2018, p.13).

School systems aim to move from integration to inclusion, while real inclusion presupposes changes in the perception and organization of the school system and the educational environment, focusing on the different educational needs and abilities of all pupils. Such a shift requires a more fundamental reform based on changes in educational policies (Körner, et.al., online, introduction), developing theoretical aspects of inclusion, and gradually building inclusive education (Špotáková, Kundrátová, Štefková, Vojtová & Zikmund Perašínová, 2018). "Attention is focused on creating a friendly, accessible, safe, and secure educational environment, which is accessible for all participants in education including teachers and other teaching staff" (Čerešňová, 2018, p.14).

Inclusive education is perceived as accessible to everyone and at the same time, based on solutions that can be adjusted to abilities of every individual. The preferred learning style, communication, or other specific needs are taken into consideration (Čerešňová & Rollova, 2015 In Čerešňová, 2018, pp.13 – 14).

Slovakia is among the countries with a so-called multi-track approach which has a diverse attitude towards inclusion offering different services between the system of mainstream and special schools for SEN students (Meijer et. al., (ed), EASIE, 2003, p.8).

Several EASIE documents (2011) emphasize that appropriate undergraduate and further teachers' education is a key factor for implementation of successful inclusive practises. For example, the EASIE reports (report *Klíčové zásady podpory kvality v inkluzivnom vzdelávaní*, 2011, p. 15) appeal to teachers in undergraduate training to acquire skills, knowledge, and understanding to gain their confidence and address different pupils' needs effectively. The report *Vzdelávanie učiteľov v oblasti inklúzie v Európe – výzvy a príležitosti* (EASIE, 2011, p. 18) points out the need to address the structure of undergraduate teacher training to improve teacher education in the field of

inclusion...to change the way teachers train for their professional activities and tasks (EASIE, 2014, p.16). Therefore, there is a current need in pedagogic research to study phenomena such as the willingness of teachers to work in an inclusive school environment or the professional (specialized) ability of teachers to work in an inclusive environment (Movkebaieva, Oralkanova & Uaidullakzy, 2013). It is important to train future teachers to implement inclusive principles at school; they need proper knowledge and skills in the field of education including modern interactive teaching methods as well as personality characteristics and attributes such as patience and tolerance towards people regardless of their physical or other attributes (Movkebaieva, Oralkanova & Uaidullakzy, 2013).

The implementation of inclusive principles in the school environment depends on the teachers' attitude (Bruggink, Goei & Koot, 2013; Saloviita, 2020; Žitniaková Gurgová, 2013). These attitudes are also based on the subjectively perceived teachers' skills to work with various pupils in mainstream schools (Straková, Simonová & Friedlaenderová, 2019). In the field of research, foreign countries are interested in revealing the readiness of teachers to work with children and youth with disabilities in mainstream schools (Movkebaieva, Oralkanova & Uaidullakzy, 2013; Golder, Norwich & Bayliss, 2008; Dolan, 2017).

Teachers' attitudes to inclusion, which determine the academic success of SEN students, are examined (MacFarlen & Marks Woolfson, 2013; Shelley et.al, 2016). Teachers' evaluation of their efficacy to educate students with special educational needs in mainstream schools is examined as well (Grace, 2014; Bandura, 1997). Some studies offer us the results of examining the attitudes, concerns, moods of teachers at various school levels towards inclusive education in the context of the examined demographic variables such as gender, previous experience with people with disabilities where the impact of demographic variables on attitudes has been identified (Loreman & Earle, 2007). The study by Schmidt & Vrhovnik (2015) analysed the attitudes of teachers at primary and secondary level in Slovenia to the inclusion of SEN students in the context of demographic variables (type of school, age of teachers, number of pupils with special educational needs in the classroom). Studies pointing out links between more positive attitudes towards inclusion and personal experience towards people with disabilities represent another group (Sharma, Forlin, Loreman & Earle, 2006). Among primary and secondary school teachers in the south-west of England, a survey of attitudes towards the inclusion of SEN students in mainstream schools found that those teachers who work in an inclusive environment have a more positive attitude towards school integration (Avramidis, Bayliss & Burden, 2000). Some studies examined the teachers' efficiency in approach, and concerns in integrating SEN pupils into mainstream classrooms and therefore used tools such as SACIE-R and TEIP (Tasuba & Tsokova, 2015).

2 Research methodology

A positive attitude towards inclusion, demonstrated by both teachers and school management, has been identified as one of the most influential factors in implementing inclusive approaches in school training. Social experiences and interactions with people with disabilities also influence attitudes towards inclusion. Therefore, the goal of this research was to identify the perceived professional ability of primary schools' pedagogic staff to perform an inclusive practice. It focuses on the following research questions based on the set goal:

Q1: Is there a difference in the perceived professional ability of pedagogical staff for inclusive practice in terms of the school type in which they work?

Q2: Is there a difference in the perceived professional ability of pedagogical staff for inclusive practice in terms of the achieved career level of pedagogical staff?

Q3: Is there a difference in the perceived professional ability of pedagogical staff in terms of their personal experience with SEN students?

The research sample consisted of N=1216 pedagogic staff from practice, working in Slovak schools. The available sample of respondents was used and the questionnaire was administered online. The research sample mostly consisted of pedagogical staff and teachers (98%) working at primary schools, vocational high schools, grammar schools, conservatories, special primary, and high schools. Most of the teachers involved in the research were from primary schools (primary 31% and lower secondary level 32%) and vocational high schools (23%). State school teachers represented the largest group in the research (79%). The respondents from the Slovak Republic's regions formed the largest group, namely the Banská Bystrica region (16%), the Prešov region (19%), and the Košice region (17%). In terms of the length of teaching practice the teachers were in the ranges of: 17 – 20 years (15%), 21 – 23 years (9%), 24 – 26 years (11%). The examined data was formed by pedagogic staff from all career levels, the most numerous were respondents with a first (40%) and a second attestation (36%). 8% of respondents were not assigned to any career position – it is assumed that this group mainly includes teachers with the shortest teaching experience 0 – 3 years, n=55), pedagogic staff who were categorized as educators (n=2), teaching assistants (n=3) and primary schools' special pedagogues (n=12).

The empirical data from pedagogical staff was collected in September – December 2019 using a self-designed questionnaire containing items from the „Teacher Efficacy for Inclusive Practices“ (TEIP) Scale questionnaire (Sharma, Loreman & Forlin, 2012) which was modified for the needs of this research. The scale (TEIP) was developed from the original 50 items to an 18-point scale through a series of research studies. The final scale was tested on a sample of 609 teaching students at six universities in four countries (Canada, India, Hong Kong, and Australia). The TEIP questionnaire items were translated from English into Slovak by freelance translators and the TEIP scale was modified by adding items related to demographic variables to serve these research purposes. This created a total of 22 items in the research instrument. Teachers had the opportunity to indicate the degree of agreement on an ordinal scale for each statement: 1 - *strongly disagree*, 2 - *disagree*, 3 - *slightly disagree*, 4 - *slightly agree*, 5 - *agree*, 6 - *strongly agree*.

The exploratory factor analysis with “varimax” rotation which showed a relatively high exhausted variability of the data was used to verify the research tool validity, which facilitated our interpretation. The KMO test result was 0.937 and Bartlett's test result was 0.000, which disprove the hypothesis that the correlation matrix is a unit matrix.

Accordingly, thanks to the factor analysis' results and the TEIP questionnaire 3 factors were identified and named as follows: perceived professional ability to use inclusive instructions, perceived professional ability to cooperate, perceived professional ability to manage students' behaviour.

Table 1: Teacher's perceived professional skill (rotated factor load matrix)

Teacher's perceived professional skill	Perceived professional ability to use inclusive instructions	Perceived professional ability to cooperate	Perceived professional ability to manage students' behaviour
8. I can control disturbing behaviour in the classroom.	.820	.130	.149
7. I am convinced of my ability to manage disruptive behaviour in the classroom before it occurs.	.778	.178	.115
2. I can calm a student who is disturbing/noisy.	.769	.122	.215
11. I can guide pupils to follow classroom rules.	.670	.317	.180
5. I can conclude if the student has understood what I have explained to him.	.605	.271	.126
1. I can express my expectations regarding pupils' behaviour.	.570	.149	.130
3. I can induce/motivate parents to feel comfortable when visiting the school.	.547	.320	.124
4. I can help families so that their children achieve good school results.	.530	.310	.111
6. I can provide appropriate challenges for very capable students.	.527	.311	.031
14. I am sure that I can induce/motivate students to work in pairs/small groups of students.	.508	.418	.196
18. I can provide an alternative explanation/example when students are confused.	.472	.304	.371
17. I feel confident when I am in contact with physically aggressive students.	.412	.324	.264
12. I can cooperate with other experts (e.g. external experts, specialized staff) to create individual educational programmes for SEN students.	.199	.813	.106
13. I can cooperate with other experts and staff to teach SEN students in the classroom.	.219	.773	.157
10. I am sure that I can develop an individual educational programme to meet the needs of SEN students.	.215	.696	.219
16. I feel confident in informing others who know little about the laws and policies regarding the inclusion of students with disabilities and SEN students.	.260	.667	.188
15. I can use different strategies to assess students (e.g. portfolio assessment, modified tests, performance-based assessment, etc.)	.410	.560	.171
9. I am convinced of my ability to involve SEN children's parents in school activities.	.411	.497	.091

20. I support everyone's involvement in education.	.071	.101	.869
19. The school is a place for all the educational process' participants.	.167	.156	.852
22. I can provide a safe environment that allows students to participate in the processes that take place during and outside the classroom.	.376	.282	.583
21. I apply the principles of an individual approach concerning the needs of specific students.	.250	.494	.544

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 5 iterations.

Subscale "perceived professional ability to use inclusive instructions" consisted of items:

- 8. I can control disturbing behaviour in the classroom.
- 7. I am convinced of my ability to manage disruptive behaviour in the classroom before it occurs.
- 2. I can calm a student who is disturbing/noisy.
- 11. I can guide students to follow the classroom rules.
- 5. I can conclude if the student has understood what I have explained to him.
- 1. I can express my expectations regarding students' behaviour.
- 3. I can induce/motivate parents to feel comfortable when visiting the school.
- 4. I can help families so that their children achieve good school results.
- 6. I can provide appropriate challenges for very capable students.
- 14. I am sure that I can induce/motivate students to work in pairs or small groups.
- 18. I can provide an alternative explanation/example when students are confused.
- 17. I feel confident when I am in contact with a physically aggressive student.

This subscale explains 24.06% of the total data variability. Cronbach's Alpha showed the value of 0.621. The subscale consisted of items focused on the teacher's perceived professional ability to adapt inclusive instructions based on the needs of students with special educational needs (hereinafter SEN).

Subscale "perceived professional ability to cooperate" consisted of items:

- 12. I can cooperate with other experts (e.g. external experts, specialized staff) to create individual educational programmes for SEN students.
- 13. I can cooperate with other experts and staff to teach in the classroom with SEN students.
- 10. I am sure that I can develop an individual educational programme to meet the needs of SEN students.
- 16. I feel confident in informing others who know little about the laws and policies regarding the inclusion of students with disabilities and SEN students.
- 15. I can use different strategies to assess students (e.g. portfolio assessment, modified tests, performance-based assessment, etc.)
- 9. I am convinced of my ability to involve SEN children's parents in school activities.

This subscale explains 18.33% of the total data variability. Cronbach's Alpha showed a value of 0.546. The subscale consisted of items focusing on the teacher's cooperation with SEN students.

Subscale "perceived professional ability to manage the students' behaviour" consisted of items:

- 20. I support everyone's involvement in education.
- 19. The school is a place for all the educational process' participants.
- 22. I can provide a safe environment that allows them to participate in the processes that take place during and outside the classroom for all students.
- 21. I apply the principles of an individual approach concerning the needs of specific pupils.

This subscale explains 12.25% of the total data variability. Cronbach's Alpha showed a value of 0.498. The subscale consisted of procedures that could be part of any general measure because many inclusive guidelines are general methods that are effective in teaching all students in various learning environments.

3 Results of the research

The research was focused on the self-assessment of pedagogical staff for inclusive practices in terms of demographic variables such as school level, career level of pedagogical staff, personal experience with SEN students.

The results of the empirical research are presented in tables T2 to T6. Methods of inferential statistics were used to process data. From the inference statistics methods, non-parametric significance tests such as the Spearman's Correlation Coefficient and Mann-Whitney U Test were used, since not all variables showed a normal distribution within the file and its sub-files, which was verified using the Kolmogorov-Smirnov test and the Shapiro-Wilkox test ($p < 0.05$).

Table 2: Perceived professional ability to perform inclusive practice in terms of school types

Perceived professional ability to perform an inclusive practice		Perceived professional ability to use inclusive instructions	Perceived professional ability to cooperate	Perceived professional ability to manage students' behaviour
Type of school				
Primary level of Primary School	N	386	386	386
	AM	4.95	4.80	5.17
	SD	0.636	0.78	0.868
	Me	5	5	5
	Min	1	1	1
	Max	6	6	6
Secondary level of Primary school	N	388	388	388
	AM	4.78	4.54	5.04
	SD	0.675	0.909	0.892
	Me	5	5	5
	Min	1	1	2
	Max	6	6	6
Grammar school	N	65	65	65
	AM	4.57	4.1	5.1
	SD	0.639	0.957	0.76
	Me	5	4	5
	Min	3	2	3
	Max	6	6	6
Primary school + Grammar school	N	3	3	3
	AM	4.61	3.78	4.08
	SD	0.488	0.481	1.377
	Me	4	4	5
	Min	4	4	3
	Max	5	4	5
Vocational high school	N	281	281	281
	AM	4.70	4.38	5.01
	SD	0.674	0.910	0.907
	Me	5	5	5
	Min	2	1	2
	Max	6	6	6
Special Primary school and High school	N	66	66	66
	AM	5.08	5.14	5.32
	SD	0.731	0.836	0.963
	Me	5	5	6
	Min	2	2	2
	Max	6	6	6
Special Primary school teacher	N	12	12	12
	AM	5.16	5.22	5.65
	SD	0.43	0.625	0.598
	Me	5	5	6
	Min	5	4	4
	Max	6	6	6
Kruskal-Wallis test		58.707	97.905	33.157
P-value		.000***	.000***	.000***

Explanatory notes: AM – arithmetic mean, Me – Median, SD – standard deviation, Min – minimum value, Max – maximum value
Used scale: 1 - strongly disagree, 2 – disagree, 3 - slightly disagree, 4 - slightly agree, 5 – agree, 6 - strongly agree

T2 data confirmed a statistically significant difference among the respondents in the perceived professional ability to use inclusive instructions ($p=0.000$), perceived professional ability to cooperate ($p=0.000$), and perceived professional ability to manage students' behaviour ($p=0.000$) in terms of schools where respondents currently work. The special pedagogues in primary schools (AM=5.16) and pedagogical staff working in special primary and high schools (AM=5.08) have the highest perception of their professional ability to use inclusive

instructions. Special pedagogues in primary school (AM=5.22), the staff at the first level of primary school (AM=4.80), and staff working in special primary and high schools (AM=5.14) have a high perception of their professional ability to cooperate. The professional ability necessary to manage student's behaviour is perceived as highest in special pedagogues in primary schools (AM=5.65) and teachers working in special primary and high schools (AM=5.32). This also points to the achieved value Me=6.

Table 3: Perceived professional ability to perform inclusive practice in terms of the career level achieved by the respondents

Perceived professional ability to perform an inclusive practice		Perceived professional ability to use inclusive instructions	Perceived professional ability to cooperate	Perceived professional ability to manage students' behaviour
Career level				
Beginning teacher	N	20	20	20
	AM	4.74	4.44	5.3
	SD	0.804	0.977	0.737
	Me	5	4	6
	Min	3	2	4
	Max	6	6	6
Proficient teacher	N	266	266	266
	AM	4.75	4.43	5.12
	SD	0.669	0.97	0.849
	Me	5	5	5
	Min	2	1	2
	Max	6	6	6
Teacher with the first attestation	N	483	483	483
	AM	4.84	4.67	5.13
	SD	0.698	0.845	0.893
	Me	5	5	5
	Min	1	2	2
	Max	6	6	6
Teacher with the second attestation	N	447	447	447
	AM	4.86	4.64	5.04
	SD	0.635	0.887	0.906
	Me	5	5	5
	Min	1	1	1
	Max	6	6	6
Kruskal-Wallis test		6.215	13.331	3.932
P-value		.102	.004***	.269

Explanatory notes: AM – arithmetic mean, Me – Median, SD – standard deviation, Min – minimum value, Max – maximum value
Used scale: 1 - strongly disagree, 2 – disagree, 3 - slightly disagree, 4 - slightly agree, 5 – agree, 6 - strongly agree

Empirical data in T3 shows the difference among the surveyed respondents in the perceived professional ability to cooperate ($p=0.004$) in terms of achieved career level. Teachers with the first attestation (AM= 4.67; Me=5) and teachers with the second

attestation experience the highest level of professional ability to cooperate. Beginning teachers and proficient teachers perceive their professional ability at a lower level, as pointed out by the achieved AM (4.44; 4.43), as well as Me (4 and 5).

Table 4: Perceived professional ability to perform inclusive practice in terms of personal experience with SEN students

Perceived professional ability to perform an inclusive practice		Perceived professional ability to use inclusive instructions	Perceived professional ability to cooperate	Perceived professional ability to manage students' behaviour
Personal experience with SEN student				
Yes	N	1159	1159	1159
	AM	4.84	4.64	5.11
	SD	0.667	0.880	0.883
	Me	5	5	5
	Min	1	1	1
	Max	6	6	6
No	N	57	57	57
	AM	4.59	3.83	4.88
	SD	0.716	0.872	0.934
	Me	5	4	5
	Min	2	2	3
	Max	6	6	6
Mann Whitney U test		26310.500	16282.500	27972.000
P-value		.009***	.000***	.049*

Explanatory notes: AM – arithmetic mean, Me – Median, SD – standard deviation, Min – minimum value, Max – maximum value
Used scale: 1 - strongly disagree, 2 – disagree, 3 - slightly disagree, 4 - slightly agree, 5 – agree, 6 - strongly agree

The T4 results confirm a statistically significant difference in the perception of professional ability between teachers with personal experience with SEN students (AM=4.64, Me=5) and teachers

who do not have personal experience with SEN students (AM=3.83, Me=4). A statistically significant difference ($p=0.000$) in the perceived professional ability to cooperate has also been found. While teachers who have experience working

with SEN students achieved an average score of AM=4.64 (Me=5), teachers who do not have such experience showed an AM=3.83 (Me=4). A weak statistically significant difference has been found in the perceived professional ability to manage students' behaviour ($p=0.049$). Teachers with SEN experience

achieved a higher average score (AM=5.11, Me=5) than teachers without experience (AM=4.88, Me=5).

Table 5: perceived professional ability to perform inclusive practice in terms of the SEN students' presence in the classroom

Perceived professional ability to perform an inclusive practice SEN pupil in the classroom		Perceived professional ability to use inclusive instructions	Perceived professional ability to cooperate	Perceived professional ability to manage students' behaviour
Yes	N	1093	1093	1093
	AM	4.83	4.63	5.09
	SD	0.681	0.898	0.892
	Me	5	5	5
	Min	1	1	1
	Max	6	6	6
No	N	123	123	123
	AM	4.83	4.33	5.17
	SD	0.580	0.830	0.834
	Me	5	4	5
	Min	3	2	2
	Max	6	6	6
Mann Whitney U test		66417.000	52102.500	64087.500
P-value		.828	.000***	.392

Explanatory notes: AM – arithmetic mean, Me – Median, SD – standard deviation, Min – minimum value, Max – maximum value
Used scale: 1 - strongly disagree, 2 – disagree, 3 - slightly disagree, 4 - slightly agree, 5 – agree, 6 - strongly agree

The results in T5 point to a statistically significant difference in the perception of professional ability (to perform an inclusive practise) between teachers who have an SEN student (students) in the classroom (AM=4.63; Me=5), and teachers who do not have an SEN student in the classroom (AM=4.33; Me=4).

4 Discussion

Several foreign studies measured teacher effectiveness in inclusive classes using a research instrument developed for examination of inclusive practices (Park, Dimitrov, Das Cardona-Molto, Ticha & Abery, 2020; Sharma & Sokal, 2013; MacDonald, 2015; Yada & Savolainen, 2017; Miesera, DeVries, Jugohann & Gebhardt, 2018). If teachers want to effectively implement inclusive procedures, they must have a high self-assessment of their ability in teaching SEN students, which testifies to their beliefs, i.e. a belief that they can influence how successful these students will be in the educational process (Vanderloon, 2020). The study presents the results of research on perceived professional ability for inclusive practice, which are in terms of socio-demographic variables categorized into the following areas: type of school where respondents currently work, career level of pedagogical staff, personal experience with SEN student, current presence of SEN student in the classroom. Special school teachers and special teachers at mainstream schools are assessed as proficient in all three areas: perceived professional ability to use inclusive instructions, perceived professional ability for cooperation, perceived professional ability in managing pupils' behaviour. Teachers may feel more confident in these areas due to better preparation for working with SEN students. This is because the theoretical, as well as practical undergraduate training of special pedagogues and teachers at special schools focused mainly on SEN students. The successful implementation of inclusive procedures in education is supported by the knowledge and skills of teachers acquired during undergraduate training in the field of inclusion, i.e. inclusive education, as confirmed by Hecht, Petra & Aiello, Paola & Pace, Erika & Sibilio, Maurizio (2017). Beuse, Merz-Atalik and O'Brien (2016), Sharma and Jacobs (2016) perceive the theoretical and practical experience gained during undergraduate training as one of the most important factors necessary for successful use of inclusive procedures. The research by Koppa (2009) pointed out that workshops about inclusion during undergraduate training positively increase the attitudes towards inclusive education.

De Boer et.al. (2011) suggests that based on this research, practice in inclusive classrooms (classrooms with one or more SEN students) should be included in the undergraduate training of teachers and special pedagogues. The mentioned authors discovered that pedagogical practice implemented within the undergraduate training increases positive attitudes towards inclusive procedures of future teachers, which can also increase the effectiveness of the inclusive procedures' use in their future pedagogical practice.

Teachers with the first attestation and teachers with the second attestation perceive a higher level of professional ability for cooperation than their colleagues at lower career levels (beginning and proficient teachers). A higher career level in pedagogic staff implies longer teaching practice and more educational experience gained by performing the activities associated with improving one's career level, according to the rules for pedagogic staff professional development (Regulation of The Ministry of Education, Science, Research and Sport of the Slovak Republic no. 361/2019). Professionally more skilled teachers have higher levels of the perception of self-efficacy for cooperation with other experts, e.g. to create individual educational plans for SEN students, for cooperation with SEN students' parents, as well as implementing various strategies of students' assessment and evaluation. Teachers at a higher career level have a higher score in self-efficacy in cooperation which can be derived only from the non-confirmed assumption that they are more professionally experienced, more informed and are better at cooperation with experts which has been acquired through practice. This is also confirmed by the research of Burke and Sutherland (2004) Dessemontet et.al. (2011) which focused on personal variables such as age, pedagogic experience, teachers' opinions.

Teacher's personal experience with SEN students increases the self-perception of pedagogic staff in all three areas relevant to the professional ability for inclusive practise. This is supported by studies of Olli-Pekka Malinen et.al. (2013), which conclude that personal experience with teaching SEN students is one of the strongest predictors of self-efficacy. Lanfranchi, Moalli and Pulina (2015) in their study also confirmed that personal experience, as well as the actual presence of SEN students, increases the self-perception in all three areas needed for use of inclusive procedures. It supports the assumption that teachers

will be more efficient in using the inclusive instructions as well as in cooperation and control of students' behaviour.

The presence of SEN students in the classroom where a teacher works – teachers who actually have SEN students in the classroom showed a higher score of teachers' professional self-perception in the field of cooperation. It confirms the previous findings that fulfilling SEN students' needs requires a multi-disciplinary approach, i.e. cooperation with experts. If this requirement is fulfilled, the use of inclusive procedures in teaching practice can be more effective. Teachers who have an SEN student in the classroom and cooperate with experts are less concerned about the use of inclusive procedures. The research performed by Megou, Castellini, Vianello (1997) and Vianello (2015) already points this out. In this context, it is necessary to mention research performed by Balboni, Pedrabissi (2000), Cornoldi, Terreni, Scruggs, Mastropieri (1981), Devecchi, Dettori, Doveston, Sedwick, Jament (2012), Vianello et. al. (2015) who have pointed out that development courses, training, workshops, and advice from professional staff within the cooperation of teacher-professional staff all help teachers to properly implement inclusive procedures into teaching in practice.

5 Conclusion

The partial results of the research indicate the need to more closely monitor the personal experiences of pedagogical staff and their perception of self-efficacy in an inclusive environment, i.e. their attitudes towards inclusion. Teachers who were specially preparing for work with SEN students and worked daily with groups of SEN students showed a higher level of perception of their own self-efficacy, i.e. teaching experience of SEN students is the strongest predictor of self-efficacy. The questions for new research in this field are: What are the personal experiences with SEN students, what activities the teachers performed to increase their career level, which of them had an impact on the perception of their own self-efficacy for cooperation and what support they received from this cooperation for their own teaching practice.

6 Limits

The chosen data collection procedure was not able to achieve a representative sample of teachers from all Slovak regions because collecting data from respondents is difficult in the conditions of Slovak schools.

Literature:

1. Avramidis, E., Bayliss, P., Burden, R. (2000). A Survey into Mainstream Teachers' Attitudes Towards the Inclusion of Children with Special Educational Needs in the Ordinary School in one Local Education Authority. *Educational Psychology*, 20(2), pp. 191 – 211. DOI: 10.1080/713663717
2. Balboni G., Pedrabissi L. (2000). Attitudes of Italian teachers and parents toward school inclusion of students with mental retardation: The role of experience. *Education and Training in Mental Retardation and Development Disabilities*, 35 (2), pp.148 – 159.
3. Bandura, A. (1997). *Self-efficacy: The exercise of control*. New York: W. H. Freeman and Company.
4. Beh-Pajooh, A. (1991). The effect of social contact on college students' attitudes toward severely handicapped students and their educational integration. *Journal of Intellectual Disability Research*, 35(4), pp. 339 – 352. Available at: <https://onlinelibrary.wiley.com/doi/abs/10.1111/j.1365-2788.1991.tb00406.x>
5. Beuse, K., Merz-Atalik, K. & O'Brien (2016). Sentiments, concerns and attitudes towards inclusive education – A comparison between teacher education students at the University of North Carolina (Charlotte, USA) and the University of Education (Ludwigsburg, Germany). *Zeitschrift für Inklusion*.
6. Burke, K. & Sutherland, C. (2004). Attitudes towards Inclusion: Knowledge vs. Experience. *Education*, 125(2), pp. 163 – 172.

7. Cardona-Molto, Maria C., Ticha, R. & Abery, Brian H. (2020). The Spanish Version of the Teacher Efficacy for Inclusive Practice (TEIP) Scale: Adaptation and Psychometric Properties. *European Journal of Educational Research*, 9(2), pp. 809 – 823. Available at https://www.eu-jer.com/EU-JER_9_2_809.pdf
8. Castellini K., Mega C., Vianello R. (1995). L'integrazione di studenti con handicap mentale nella scuola media: l'atteggiamento degli insegnanti. *I Care*, Vopl. 1, pp. 2 – 16.
9. Cornoldi C., Terreni A., Scruggs T., Mastropieri M. (1998). Teacher attitudes in Italy after twenty years of inclusion. *Remedial and Special Education*, pp. 19, 350 – 356.
10. Čerešňová, Z. et.al. (2018). *Inclusive higher education*. Praha: Gasset-Allan Gintel.
11. de Boer, A., Pijl, S.J. & Minnaert, A. (2011). Regular primary school teachers attitudes' towards inclusive education. *Journal for Inclusive Education*, 15(3), pp. 331 – 353.
12. Dessemontet, R.S., Benoit, V. & Bless, G. (2011). Schulische Integration von Kindern mit einer geistigen Behinderung – Untersuchung der Entwicklung der Schulleistungen und der adaptiven Fähigkeiten, der Wirkung auf die Lernentwicklung der Mitschüler sowie der Lehrereinstellungen zur Integration. *Empirische Sonderpädagogik*, 3(4), pp. 291 – 307.
13. Devecchi C., Dettori F., Doveston M., Sedgwick P., Jament J. (2012). Inclusive classrooms in Italy and England: The role of support teachers and teaching assistants. *European Journal of Special Needs Education*, pp. 27(2), 171 – 184, doi:10.1080/08856257.2011.645587.
14. Dolan, R. (2017). Teacher Education Programmes: A Systems View' In Clandinin, D. J. and Husu, J.(eds). *The SAGE Handbook of Research on Teacher Education*. London: SAGE. https://books.google.sk/books?id=HE8IDwAAQBAJ&pg=PT163&lpg=PT163&dq=Rose+Dolan+Teacher+Education+Programmes:+A+Systems+View&source=bl&ots=9CAOEFK3_1&sig=YgP1Q_yvCmFZqLWsmvPVWUpr774&hl=sk&sa=X&ved=0ahUKewjLo96koKDbAhXmO5oKHcQoDtGQ6AEIRzAE#v=onepage&q=Teacher%20Education%20Programmes%3A%20A%20Systems%20View&f=false
15. Golder, G., Norwich, B. & Bayliss, P. (2008). Preparing teachers to teach pupils with special educational needs in more inclusive schools: evaluating a PGCE development. *British Journal of Special Education*, ORE, 1 June 2005, Deposited in ore 17 December 2008. abstract. Available at <https://doi.org/10.1111/j.0952-3383.2005.00377.x>
16. Grace, Ch. (2014). *Teacher self-efficacy and inclusive practice: An exploration of educator self-efficacy with regards to inclusive practise within the mainstream classroom* (Doctorate in Applied Educational Psychology). Newcastle University. <http://theses.ncl.ac.uk:8080/jspui/handle/10443.1/2582>
17. Hecht, Petra & Aiello, Paola & Pace, Erika & Sibilio, Maurizio. (2017). Attitudes and Teacher Efficacy among Italian and Austrian teachers: A Comparative Study. *European Journal of Research in Education and Training*, pp. 15, 269 – 282.
18. Kopp, B. (2009). Inklusive Überzeugungen und Selbstwirksamkeit im Umgang mit Heterogenität Wie denken Sondernde des Lehramts für Grundschulen? *Empirische Sonderpädagogik* p. 1, (1), 5 – 24.
19. Körnerová, I. et al. *Smerom k inkluzívnemu vzdelávaniu. Úspešné príklady inkluzívneho vzdelávania v praxi*. Inclusion Europe s podporou Európskej komisie [online]. [cit. 2019 – 06 – 10]. Available at [www.zppmvsr.sk > dokumenty > Inkluzivne_vzdelavanie_preklad](http://www.zppmvsr.sk/dokumenty/Inkluzivne_vzdelavanie_preklad)
21. Loreman, T. & Earle, Ch. (2007). The Development of Attitudes, Sentiments and Concerns about Inclusive Education in a Content-Infused Canadian Teacher Preparation Program. *Exceptionality Education Canada*, 17(1/2), pp. 85 – 106. Available at <https://eric.ed.gov/?id=EJ773914>
22. MacDonald, C.A. (2015). Teacher efficacy: moving towards inclusive practices. Master's thesis, Memorial University of Newfoundland, pp. 87 – 102. Available at <http://research.library.mun.ca/id/eprint/11654>
23. MacFarlen, K. & Marks Woolfson, L. (2013). Teacher attitudes and behavior toward the inclusion of children with social, emotional and behavioral difficulties in mainstream schools: An application of the theory of planned behavior.

- Teaching and Teacher Education*, pp. 29, 46 – 52. Available at <https://doi.org/10.1016/j.tate.2012.08.006> Elsevier Ltd. *Science Direct*
24. Miesera, S., DeVries, J.M., Jungjohann, J. & Gebhardt, M. (2018). Correlation between attitudes, concerns, self-efficacy, and teaching intentions in inclusive education evidence from German pre-service teachers using international scales. *Journal of Educational Research*, pp.19(2), 2019, 103 – 114. Available at <https://doi.org/10.1111/1471-3802.12432>
25. Meijer, C., Soriano, V., Watkins, A. (eds.) (2003). *Special Needs Education in Europe. Thematic Publication*. EASIE. ISBN 87-90591-77-1.
26. Mega C., Castellini K., Vianello R. (1997). Gli atteggiamenti degli insegnanti verso gli allievi con handicap: dalla scuola media a quella superiore. In R. Vianello e C. Cornoldi (Eds.). *Metacognizione e sviluppo della personalità. Ricerche e proposte di intervento* pp. 265 – 279, Bergamo: Junior.
27. Movkebaieva, Z., Oralkanova, I. & Uaidullakzy, E. (2013). The professional competence of teachers in inclusive education. *Procedia-Social and Behavioral Science*, 89, pp. 549 – 554. doi: 10.1016/j.sbspro.2013.08.892 Elsevier Ltd. *Science Direct*
28. Olli-Pekka Malinen, Savolainen, H., Engelbrecht, P. Xu, J., Nel, M., Nel, N., Tlale, D. (2013). Exploring teacher self-efficacy for inclusive practices in three diverse countries. *Teaching and Teacher Education* 33 (2013), pp. 34 – 44.
29. Park, M.-H, Dimitrov, D.M., Das, A., Gichuru, M. (2014). The teacher efficacy for inclusive practices (TEIP) scale: dimensionality and factor structure. *Journal of Research in Special Educational Needs*, 16(1). Available at <https://doi.org/10.1111/1471-3802.12047>
30. Saloviita, T. (2020). Attitudes of Teachers Towards Inclusive Education in Finland. *Scandinavian Journal of Educational Research*, 64(2), pp. 270 – 282. DOI: 10.1080/00313831.2018.1541819
31. Sharma, U., Forlin, Ch., Loreman, T. & Earle, Ch. (2006). Pre-Service Teachers' Attitudes, Concerns and Sentiments about Inclusive Education: An International Comparison of Novice Pre-Service Teachers. *International Journal of Special Education*, 21(2), pp. 80 – 93. Available at <https://files.eric.ed.gov/fulltext/EJ843609.pdf>
32. Sharma, U., Loreman, T. & Forlin, Ch. (2012). Measuring teacher efficacy to implement inclusive practices. *Journal of Research in Special Educational Needs Education*, 12(1), pp. 12 – 21. Available at https://www.academia.edu/18421635/Measuring_teacher_efficacy_to_implement_inclusive_practices
33. Sharma, U. & Sokal, L. (2013). The impact of a teacher education course on pre-service teachers' beliefs about inclusion: an international comparison. *Journal of Research in Special Educational Needs*, 15(4), pp. 276 – 284. Available at <https://onlinelibrary.wiley.com/action/doSearch?AllField=sharma+sokal> <https://doi.org/10.1111/1471-3802.12043>
34. Shelley T. Alexander, David L. Brody, Meir Muller, Haggith Gor Ziv, Sigal Achituv, Chaya R.
35. Gorsetman, Janet Harris, Clodie Tal, Roberta Goodman, Deborah Schein, Ilene Vogelstein, Lyndall Miller. (2016). Voices of American and Israeli Early Childhood Educators on Inclusion. *International Journal of Early Childhood Special Education (INT-JECSE)*, 8(1), 16 – 38. DOI: 10.20489/intjecse.239574
36. Sharma, U. & Jacobs, K. (2016). Predicting in-service educators' intentions to teach in inclusive classrooms in India and Australia. *Teaching and Teacher Education*, 55, pp.13 – 23.
37. Schmidt, M. & Vrhovnik, K. (2015). Attitudes of Teachers Towards the Inclusion of Children with Special Needs in Primary and Secondary Schools. *Hrvatska revija za rehabilitacijska istraživanja*, 51(2), pp. 16 – 30. Available at <https://webcache.googleusercontent.com/search?q=cache:SwR8ePY5szoJ:https://hrcak.srce.hr/file/221004+&cd=3&hl=sk&ct=clnk&gl=sk>
38. Straková, J., Simonová, J. & Friedlaenderová, H. (2019). Postoje odborné i laické veřejnosti k inkluzivnímu vzdělávání v kontextu obecných postojů k vnější diferenciaci. In *Studia paedagogica*. 24(1). Available at <https://doi.org/10.5817/S P2019-1-4>.
39. Sucuoğlu, B., Bakkaloğlu, H., İşcen Karasu, F., Demir, S. & Akalm, S. Inclusive preschool teachers: Attitudes and knowledge. *International Journal of Early Childhood Special Education (INT-JECSE)*, 5(2), pp. 107 – 128. Available at <https://www.int-jecse.net/index.php/ijecse/article/view/7440>.
40. Špotáková, M., Kundrátová, B., Štefková, M., Vojtová, Z. & Zikmund Perašínová, D. (2018). *Od integrácie k inklúzii*. Informačná brožúra pre pedagógov základných škôl. Bratislava: VÚDPaP. [online]. [cit. 2019 – 06 – 10].
41. Tasnuba, T., Tsokova, D. (2015). BRAC Primary School Teachers' Teaching-efficacy, Attitude, Sentiment and Concern towards Inclusion of Children with Disabilities in Regular Classrooms in Bangladesh. *Asian Journal of Inclusive Education (AJIE)*, 3(1), pp. 53 – 78. Available at <http://www.ajie-bd.net>
42. Vančíková, K., Porubský, Š. & Kosová, B. (2017). *Inkluzívne vzdelávanie – dilemy a perspektívy*. Banská Bystrica: Belianum.
43. Vančíková, K., Sabo, R. et al. (2018). *Inkluzívne vzdelávanie*. Banská Bystrica: Belianum.
44. Yada, A. & Savolainen, H. (2017). Japanese in-service teachers' attitudes toward inclusive education and self-efficacy for inclusive practices. *Teaching and Teacher Education*, 64, pp. 222 – 229. Available at <https://doi.org/10.1016/j.tate.2017.02.005>
45. Vanderloon, McKenzie, "Development of Teacher Efficacy for Inclusive Practices in Canadian Teachers" (2020). Electronic Thesis and Dissertation Repository. 7326. Available at <https://ir.lib.uwo.ca/etd/7326>
46. Vianello R., Lanfranchi S., Moalli E., Pulina F. (2015). Tutti in classe normale. Le opinioni degli insegnanti, dei compagni e dei genitori. In R. Vianello, Di Nuovo, S. (Eds.). *Quale scuola inclusiva in Italia? Oltre le posizioni ideologiche: risultati della ricerca* (pp. 17 – 33). Trento: Erickson.
47. Žitniaková Gurgová, B. (2013). Úloha psychológie v príprave učiteľov na realizáciu multikulturálnej výchovy. In K. Vančíková (Ed.). *Multikultúrna výchova - jej miesto v príprave učiteľov*. Banská Bystrica : Univerzita Mateja Bela, Pedagogická fakulta (pp. 93-112).
48. Regulation of The Ministry of Education, Science, Research and Sport of the Slovak Republic no. 361/2019 on vocational training Available at: <https://www.minedu.sk/data/at/15400.pdf>

Primary Paper Section: A

Secondary Paper Section: AM

THEORETICAL AND PRACTICAL VIEW ON DETERMINANTS OF EDUCATION AS A PRODUCTIVE ELEMENT OF INDIVIDUAL AND HOUSEHOLD CONSUMPTION IN THE CONTEXT OF FUTURE CHALLENGES OF THE SLOVAK REPUBLIC

^aMARIANNA PSÁRSKA, ^bJAKUB HORÁK

Institute of Technology and Business, School of Expertness and Valuation, Okružní 517/10, 37001 České Budějovice, Czech Republic

email: ^apsarska.m@gmail.com, ^bhorak@mail.vstecb.cz

Abstract: By selecting a specific productive element of household, or individual, consumption, i. e. education, in view of its future significance, the paper's main objective is to find out and verify the importance of determinants that influence one's decision-making about it. It is necessary to characterize the productive element of consumption and a certain approach to it, thereby allowing one to become aware of the current situation and point out its magnitude in the context of the SR's future development. The analytical part comprises analyses of the current situation and determinants of the selected productive element (primarily from the economic and psychological points of view) and then outlines probable challenges of future development in the country's conditions. In terms of initial data sources, the paper follows from the Household Budget Survey statistics and research, own research and own questionnaire survey used for the purposes of this paper. The paper claims that decision-making of households about education expenditures is influenced by several simultaneous factors depending on an observed group of respondents, particularly in terms of their standard of living, perceived satisfaction, and overall attitude. The analytical part also reveals that decision-making of Slovakian households confirms a number of conclusions made by behavioural economists in the sphere of decision-making mechanisms.

Keywords: productive elements of consumption, alternative decision-making theories, determinants of decision-making, expenditures on education, personal approach to education

1 Introduction

The reason for choosing education as a particularly productive element is that it has been treated insufficiently and only a partial solution to this phenomenon has been presented. To be adequately introduced to the issue, it is essential for one to understand the decision-making mechanism associated with it, which is the key to understanding its future formation (Psárska, 2018a, pp. 2).

As the main objective is to look into the productive element of household or individual consumption (namely, expenditures on education and the overall attitude to education issues in terms of analysing productive aspects of education decision-making), it is necessary to examine them from a theoretical as well as a practical point of view (Ronzhina et al., 2016). According to recent research, the so-called alternative approaches to rationality have been used, hence a psychological view of the issue should be incorporated as well enabling one to uncover a particular approach and background of the mechanism. According to Valenčík (2004, pp. 2), the so-called productive consumption economy considers behaviour of households and a certain growth of the present value of expected future income (from generating and operating of assets that constitute their "family portfolio") as the target orientation. Productive elements of consumption are seen as parts of a household's consumer basket that are investments in the human and social capital by their nature. From the economic point of view, these are therefore elements not essential for survival, but their significance is proven to increase only after a certain standard of living of households has been reached (Ashmarina et al., 2018). However, what if the current situation does not create sufficiently favourable conditions for investments in the human and social capital in the form of education – not from the economic and material perspective, but from the time or motivational one? What is the main reason for the fact that people do not feel any motivation or joy of changes that may occur with education? In this respect, the paper focuses on what the actual situation is when deciding on costs on education in the SR, and also in the context of deciding on consumption of this element and discovering the process of implementing such decisions to the present as well as anticipated future development, including the attitude that individuals have

towards the future and the overall productive aspect (Madarász et al., 2010, pp. 28).

In connection with the paper outcomes, it should be noted that an analysis of the educational structure of population in relation to its income level showed that the level is (with few exceptions) determined by the level of education attained (Čitányová and Chrenko, 2011). From that standpoint, education is, therefore, necessary for development and success in the modern knowledge society and every economy. Additionally, it represents a kind of investment for each individual through which they can gradually increase not only their income but to use the knowledge gained and streamline their work step by step (regarding a particular way of learning indeed). While considering household budgets, it may be observed that the level of expenses on education for individual types of Slovakian households in the 2010-2017 period averages 0.3-0.6 % of the total net household monetary expenditures, which is fairly low (Psárska, 2018a, pp. 6-7), with self-employed individuals being the most eminent in that area. There are several possible causes for such low-level spending on education: one's busyness of work duties that go beyond regular working hours, one's lack of motivation to his / her self-education as well as other spending priorities (e.g. other members of the family, children), and even the still existing misconception that it is sufficient to finish a school and no further self-education is needed. From the psychological point of view, this may also involve one's aversion and reluctance to changes or a sense of comfort and / or self-doubt. All of these factors have been confirmed in the author's recent survey, with the variability of questionnaire answers being large despite the fact that 97 % of respondents consider spending on education to be beneficial and useful, which strongly contradicts the answers being subsequently expanded. The survey also indicated that the respondents were aware of reactions of people around them and felt a positive and/or a negative response having emerged from them. Here, the benefits of education expenses, embodied in higher income, non-monetary benefits, knowledge, contacts, and the respondents' well-being, were obvious. It should also be taken into account that all these variables are of great importance in the long term and have an impact on the level of one's financial and mental wealth (Psárska, 2018b, pp. 2).

Following from the above survey, the paper will primarily address determinants forming decisions on education spending and the overall attitude towards education as a productive element of individual consumption in the SR.

2 Literature Review

Learning is seen as a continuous process resulting in a level of education or training and involving a sum of knowledge and cognitive abilities that an individual has acquired on the basis of the process. From the psychological perspective, a more detailed process of learning and learning forms has been described by specific definitions and supplemented by a number of theories. Given the scope of the issue discussed here, the author has chosen a definition by Gage and Berliner (1986), where learning is seen as a process through which an organism changes its behavior based on its own experience. This definition points to the fact that learning takes time and its results are measurable over the course of time in connection with an individual behaviour. Some psychologists (behaviorists) concentrate their attention only on the directly observable behaviour of individuals adapting to stimuli from the environment, whereas cognitive psychologists consider observable actions to be information about what has already taken place in the memory of a person who is in an active balance with the environment. Next is humanism, where one is perceived as an active individual seeking environment in which he/she would be allowed to implement their learning plans. By learning about the previously mentioned stances, it is possible to recognize the essence and

contribution of each individual. The behaviorist approach is characterized by the fact that the basis of learning must be the learner's attitude. The humanistic approach suggests that there is a natural tendency for humans to acquire new knowledge and learning as such flourishes in the stimulating environment with a focus on the development of human personality. The cognitivist approach views learning as a complex mental activity and is oriented towards studying and the overall concentration, attitude and motivation. Furthermore, this paper will simultaneously take account of all three concepts and their views on people and education (with regard to the analyzed productive element of individual consumption) and will also find out which of them the survey respondents draw their attention to.

According to certain psychologists and educators, key cognitive processes of learning include insight, understanding, thinking, rationale, using inductive and deductive logic, and understanding the broadest possible contexts. They are the basis of long-term learning and cognition of the essence of different meanings based on which it is possible to adopt rational decisions or at least make assumptions. Do individuals actually educate themselves daily? Do they think about connections and the events around them? Do they consider the broader context of long-term fulfillment of their objectives? Or do they merely state the realities, repeat what they have heard around them, choose simple alternatives and remain engaged in their present jobs out of habit or interest? These issues shall be addressed in the analytical part.

2.1 Alternative approaches to rational decision-making

The basic term in alternative approaches to rational decision-making is the so-called limited rationality manifested by the fact that a person is not always able to consistently and immediately apply cost and benefit calculations, he / she decides under uncertainty or has insufficient or not always the right information (Vrbka and Stehel, 2019). His / Her decision may be influenced by the amount of effort to obtain information or is made under the influence of emotions. Human psychology has a great influence in that respect, as studied by behavioral economics, and an optimally satisfactory solution to one's situation is therefore realized.

Also, behavioral economics addresses specific circumstances of an individual's failure and causes of crises or economic problems. They are justified by the fact that everyone's behaviour is equally irrational consequently resulting in the emergence of market bubbles. See more, for instance, in the summary of key characteristics according to Psárska (2018b, pp. 3).

2.2 Determinants of decision-making about education as a productive element

The main idea of education and learning is a change in one's behaviour resulting in better and more meaningful decisions. It is advisable to choose a rational-empirical approach to the change, i.e. the change of a planned nature that is related to the productive side of decision-making. The planned change is an intended, purposeful process of influencing the current state of an individual, a household, a group or an organization in order to improve their life, work or other conditions provided that the participants of change work together.

The basic groups of factors shaping the decision making mechanism of individuals and households involve economic, social, demographic and other determinants, and also include psychological factors. In the first step and in connection with the productive elements of consumption, the most important and decisive are considered to be economic factors as a prerequisite for their application, also with regard to expenditures on education and decisions about them, which allow financial resources to be spent on education. The economic factors encompass cash incomes, expenses, savings and propensities to them, price levels, mutual price relations, loans and / or debt rates (Barros, 2018). According to behavioral economics, one prefers to choose an alternative that brings about a change in

wealth, which is definitely possible in terms of productive elements of consumption (in this case education). Demographic factors related to decision-making take into account a size of household, age of its members, trends, social affiliations to a particular household type, concerns of household members about losing their jobs and a number of other elements causing their immediate feedback on the changed situation. Other factors involve, for instance, a place of residence, habits, and traditions formed on the basis of natural, climatic, historical or cultural conditions, also taking into account certain national characteristics. This group of factors may also include accepting the values of consumer society, noticeable changes towards greening and awareness of one's responsibility. There are several additional factors as well and many of them are directly or indirectly involved in the formation of expenditures and an attitude to education, although their impact is rather individual, as shown in this research, where particular directions and basic lines in decision-making arise in groups, being the main focus of the analytical part.

Since the behavioral approach is based on the premise that human behaviour is motivated by two main systems, namely seeking a reward or opposing a loss (Psárska, 2018b, p. 3), it is necessary to reflect on what reward is produced by productive elements of consumption embodied in education, and whether there is any danger of loss in them? And how can productive elements of consumption protect households against future risks? In this respect, there are useful studies directed to analyses of decision-making and possibilities of how to encourage people to make better decisions, which can be of great help in policy-making and corresponding targeted actions.

It is possible to look at education decision-making from several psychological viewpoints, with the changes being primarily embodied either in measurable learning outcomes (which are observable) as well as outcomes that are directly unobservable (and occur in one's mind) or in the effort, activities and search for learning opportunities and continuous improvement (Baker, 2019). The changes in activities are linked to the concept of an individual's motivation. However, what level of motivation may be observed when there are people who do not like changes, avoid them and subsequently lack the desire to continue to learn and grow? What part of the population has this approach to changes? What may the approach eventually lead to? Is it possible to see the approach at least as partially rational? It may be argued that more people (and even young people) are affected by this than one would have expected (Crozier et al., 2008). According to Popjaková (2015, pp. 268), young people are not sufficiently aware of the importance of life-long learning and do not draw enough attention and importance to it in their lives. Some have their own barriers that require a specific type of intervention, making situations even more complicated, and not always do they try to solve them, but opt for less resistance and prefer the current state or comfort to a more complicated solution to situations. In terms of individuals' performance, it is essential to focus on their motivation, satisfaction, and engagement in the learning process and then their working life, which will result in the individuals' greater contribution and added value. Consequently, not only does it affect business performance, but also the economy as a whole as labour is the key factor for any advanced country's success in the future.

2.3 Education as the key factor for socio-economic performance of countries

Education system and the level of attained education make major contributions to the long-term economic growth and good quality of life. The basic idea is that specific products of education involve knowledge and skills that improve the position of an individual and a particular country in the present competitive environment. Given the SR's relatively small, open and export-driven economy, with the main source of growth being human resources (even with regard to automation and robotics), the issue discussed is therefore considered to be significant in connection with the country's future development.

Moreover, the current macro-economic situation is as follows. In 2017, the SR spent 4 % of its GDP public spending on education, which is about 1 % less than the EU average. It seems that households tend to spend a very small part of their income on education, which does not create favourable conditions for the future, for according to the OECD, average pupil results appear to increase with increasing spending on education. Another factor affecting the results is the level of attained education of adults influencing pupils. This category primarily includes family members as well as teachers who, according to McKinsey analysts, are able to turn an average pupil to an above average one, but also vice versa, depending on whether the teacher is good at what he / she does. However, this is clearly not the whole range of problems directly related to education, as evidenced by the author's research. Thus, it is necessary to address the issue comprehensively, systematically and with a broad focus on the whole of education. In fact, the situation seems to be serious, as proved by various measurements of pupils' knowledge and skills, which are the so-called school education products and which are markedly worsening (Veselková and Holková, 2018, pp. 23-26). This was also confirmed by the OECD PISA international research for the 2006-2015 period referring to primary school pupils. As regards adults, the so-called PIAAC testing found that their position is better, for they ended up just above the OECD average. In this respect, however, it is also worth mentioning that one has a worse ability to solve problems when surrounded by new technologies, yet these can predetermine economic and social success in the future.

3 Materials and Methods

A questionnaire was compiled for the purposes of this paper, with its respondents being randomly selected. Questions were formed having several choices, including open questions, so that a comprehensive overview of economic and psychological motives of the implemented decision-making mechanism could be obtained, also taking into account the theoretical framework used. One of the strengths is the effort for a complex conception of a partially solved topic even from the viewpoint of theories and practice. The weakness is a smaller sample of respondents, which, however, is compensated to a certain extent by the present research in this area and the previously realized questionnaire survey of a more general nature that also concerned productive elements of consumption. The survey was conducted between 7th-14th April 2019 through a Google form sent via email or via social networking.

The questionnaire comprised two main parts with a total of 23 questions. In the first part, there were questions related to descriptive characteristics (see Table 1) in terms of detecting a status of households, a number of dependent children in households and a level of net income per person (Questions 1-3). Selecting the characteristics served as a reference not only to the previous survey but also to the Household Budget Survey statistics, making it possible to interlink and verify individual findings of the surveys. The second part dealt with the issue of consumption, expenses, motives, attitudes or opinions. Here, the questionnaire contained categories of expenditures spent on education, including open questions, which allowed the author to point out the motives of decision-making and gain a number of other and more specific incentives to analyze the consumption elements of a productive nature in relation to learning in practice.

Table 1: Descriptive characteristics of target sample (questionnaire, questions 1-3)

Question (1.)	Rate of responses	Question (2.)	Rate of responses	Question (3.)	Rate of responses
Pensioner	5.1 %	without children	56.7 %	up to €500	13.3 %
Maternity leave	10.2 %	with 1 child	18.3 %	between €500-1000	38.3 %
Self-employed	8.5 %	with 2 children with 3 children and more	25 %	between €1000-1500	25 %
Employee	76.2 %		0 %	between €1500-2500	18.3 %

Unemployed 0 % - over €2500 5.1 %
Source: Own processing.

When analyzing and drawing conclusions from the collected data, the author is indeed aware that the sample is unevenly distributed in proportion to the number and structure of the population of the country under observation. However, in order to verify certain anticipated trends, determinants, status or directions in the development of consumption of the selected productive element, the overall research approach is sufficient in this respect.

The author used methods of economic analysis as well as critical literature review, where she was concerned with more detailed partial hypotheses that were continuously verified and developed. Also included in the paper was the method of scientific research, which is the way or process by which an intended outcome is achieved following a particular starting point or basis. Selecting the specified methods was dependent on sub-hypotheses.

4 Results and Discussion

The analytical part consists in identifying the current situation in the form of basic characteristics in which households live (mainly from the standpoints of attitudes, motives, and tendencies associated with educating individuals and the productive aspect in the "education" consumption). Following is an analysis and definition of key determinants of the selected productive element.

4.1 The identification of basic characteristics in decision-making and the approach to education

The basic information shows that up to 90 % of the respondents undergo some form of education. The reason why the rest do not participate in any education process is due to their fatigue, disinclination or resignation. There are claims that there is no reason for education or there is an expectation of a new-born baby as a priority.

Questions 8 and 9 take account of an individual's approach to education in terms of time perspective and attitude to changes, which are a substantial part of education. Only 33.9 % of the questioned individuals plan their education in a systematic and long-term manner. The rest claim that they make impulsive decisions based on current opportunities. It partly indicates that a short-term perspective is preferred to a long-term perspective and, in fact, it shows that the application of a selected productive element of consumption and such a viewpoint of perception are not preferred. It is obvious that up to 56 % of the questioned view changes as a challenge in terms of an attitude to changes, which is more positive, whereas 3.3 % hold the opposite view of changes, which is related to fear. The rest of the questioned takes an indifferent attitude to changes. They come as they go and the respondents do not attribute any adjectives to them or reflect on them. However, is this right? According to most psychologists and educationists, an insight, understanding, thinking, reasoning, and use of inductive or deductive logic with an understanding of constructive relations are some of the key cognitive processes of learning. They are the basis for long-term learning and recognition of the essence of various meanings on the base of which it is possible to make rational decisions or to have such ability. If people do not consider changes and do not have a personal opinion, is it good or easier for them?

The questionnaire clearly shows that the individuals who do not take part in education give a number of inconsistent answers not following up in the logical sense and forming about a third of all the answers. Only a third of them are able to keep a logical sequence of the following answers. Answers to the open questions are simple and lack arguments or ideas about the future. It is worth considering the reasons for voluntary and anonymous participation of such respondents in the research. The conclusion seems to be a help or benefit for some other person as one of the pillars of alternative theories of rationality

where rationality as limited, i.e. imperfect. Such rationality is often linked and explained with the help of the principle of satisfaction, cognitive imperfection and the above-mentioned altruism⁶ that make an individual include the benefit of other people into his or her motives of decision-making. Although the results seem imperfect from the educational viewpoint, such humanism should be taken into account when the issues of future and education are addressed as these people will be in a grave need for assistance with adaptation. It is clear that this particular stratum of the population can be in serious difficulties to adapt to future changes and they may form a weak point in the labour market and a source of unemployment.

The research proves that such people do not analyse their circumstances at all. If they do, they belong to the category of higher incomers with a net salary of at least EUR 1,000 (see Table 2). Moreover, the research reveals that the ones whose annual expenditures on education exceed EUR 600 learn mostly on a daily basis. They belong to the higher income band earning between EUR 1,000 and 1,500. Would it not be beneficial to motivate people to consider improving their own future and planning their decisions in a long-term perspective? Could the state create a mixture of instruments in order to financially enhance life-long education?

Table 2: Questions on education and an approach to it (questionnaire; questions 6, 7, 10)

Question (6) Education frequency	Answers	Question (7) Financial resources for education		Question (10) How is education financed?	
		Answers	Answers	Answers	Answers
Daily	32.1%	0-100 EUR	36.2%	They themselves pay for it	42.4%
Weekly	35.7%	100-300 EUR	36.2%	The employer pays for it	25.4%
Once every four months	21.4%	300-600 EUR	13.8%	Combined	28.8%
Once a year	7.2%	600-900 EUR	6.9%	"Free"	3.4%
Once every 5 years	1.8%	900-1200 EUR	3.4%		
Never	1.8%	1,200 EUR or more	3.4%		

Source: Own processing.

4.2 Definition of education key determiners related to future development

The most significant determiner of expenditures is the level of individual net income. Further determiners, which could be added in this context, include wealth and a debt level of individuals, or rather households, as it is directly related to the income. In terms of demographic factors, the age, family situation, phase of family life-cycle, and above all, the phase of maternity leave are provably significant. As for women, it is the maternity leave which bears a significantly negative influence on their education.

In Table 3, there are answers to questions 11 and 12 targeting the revelation of motivation for learning. They show what fields of education they focus on as well. The need for practical life, higher quality of life, effort to reveal the hidden capacity or technological progress, are crucial in terms of the long-term significance of motivational factors. The answers to this structure amount to almost 78 %, which forms favourable preconditions for the development of the productive factor represented by education. Up to 81 % of respondents focus on a cognitive field, i.e. thinking, discovering and understanding, in terms of the line of study. The respondents are able to choose more additional answers and select more specific options on how to act in terms of education to specify their motives. The purpose is to find out the time framework of their decision-making and whether they consider the positive factors which improve education and use the productive elements of consumption from a long-term perspective. This is a question of to what extent they consider the future in terms of decision-making. The most frequent answer is that selecting a particular type of education is based on the possibility to use it in the future, i.e. "I think ahead, I have a concept." Not less than 69 % of the respondents

consider it the most important variant. The second most frequent variant amounts to 37 %. However, it claims: "It depends on the content I need to learn at this moment, I am not interested in anything else and do not take it into account."

Table 3: Questions on education and access to it (questionnaire, questions No. 11, 12)

Question 11 Motivation to education	Answers	Question 12 The field of learning that they deal with	Answers
the need for practical life, the growth of the quality of life	30.51 %	the field of affects (experience, interests, attitudes, values)	12.10%
the prevention of the possible loss of job	1.69 %	the cognitive field (thinking, discovery, understanding)	81%
the effort to discover one's hidden abilities	10.17%	psycho-motoric field (motoric dexterity)	6.90%
technological progress	15.25%		
education itself	22.03%		
the rise of the demand for qualification	16.95%		
no wish to answer	3.39%		

Source: Own processing.

The above-mentioned factors are included in the so-called psychological factors. Particularly positive aspects of the answers to question 13 in relation to the productive aspect are listed on the previous page. However, one is able to reveal many negatives, such as habitual behaviour in decision-making. There are answers claiming that the respondents are used to their given place of residence and therefore they remain there. Moreover, there is superficiality or reluctance to openly express one's views. They are materialized in people's selecting what comes up and in a disinterest in looking for information about training. There is also complacency which is very frequent, i.e. within the range of 5-15. The selection of the respondents is 3 out of 12 answers in the case of this question. Subsequently, the satisfaction with training is found out with the help of the range of 1-10. The answers show that the average mark of satisfaction is 7.33, which reveals the satisfaction with the mean value. Therefore, it is obvious that training make positive contribution to people who realize that they are a sort of reward for them. It is appropriate to question the development of severity of training and the criteria of evaluating satisfaction with them, which may be the impulse for further research. If one is to consider a behavioral approach (Kahneman and Tversky, 1979), human behaviour is motivated by two main systems, i.e. the search for reward or the resentment of loss. It is necessary to examine what reward is brought by the productive elements of consumption that are materialized in education and whether there is a danger of loss. The altered state of knowledge, either the current one or the expected one in the future in the form of a better job, higher income, more contacts, career rise, etc. (Table 3), can be regarded as a reward. Moreover, the reward includes the answers to the question concerning the changes resulting from education, the possibility of the key to success, which applies to this productive factor and others as education is the key to knowledge of relations and opens the door to further possibilities and greater creativity. The numerous significantly creative and various answers focused on the open question about the contribution of education confirm this conclusion. The further developing question is whether education brings about a change. Only 65.5 % of respondents give a positive answer, whilst 34.5 % do not know or think about it. Despite describing both the positive and the negative tendencies in terms of psychological factors in a detailed manner, there is a reoccurrence of people who do not wish to go into depth. It is a category of people not characterized by any income group, yet they are the same people who refuse to clarify their motivations for education. Their attitude is rather apathetic or resentful, which may be caused by the dissatisfaction with the educational system in the SR. It can be inferred from another question. Two thirds of them are not in favour of the quality and relevance of the current school system or other educational institutions. The frequent complaints are about the lack of interconnection between the theory and practice, deeper concept, new instruments, etc. It is obvious that such people substantially think, but they do not think about a specific contribution of education in the form of change and they are not willing to

evaluate. This is confirmed in their responses to the question of whether they train logical thinking and memory, where 65 % give positive answers.

The following table (Table 4) shows the total results of answers of the complete sample of respondents. Training of logical thinking is practiced by as many as 71.19 % of respondents and training of memory is practiced by as many as 74.58 % of respondents. If one is to examine the sample, which is mostly comprised of the very same people, i.e. the same positive answers in both questions, it is found as very positive in relation to the productive factor of education. When the answers are related to income, an interesting fact is revealed. Training of memory and logical thinking is refused by people within the income range of EUR 500-1,500, which is a contemporary middle-class income. This class ought to be regarded as substantial and crucial for economics.

Table 4: Questions aimed at education and an attitude to it (questionnaire, question No. 20, 21)

Question No.20 the training of logic	Answers	Question No.201 The training of memory	Answers
yes	71.19%	yes	74.58%
no	25.42%	no	24%
Answer declined	3.39%	Answer declined	1.69%

Source: Own processing.

The urgency and justification of this topic, i.e. the complex comprehension of education as a productive element of consumption, is linked to dealing or ignoring of numerous long-term problems in the SR. The publication by Newig et al. (2019) seems interesting in this context as it examines the production aspect from the systemic perspective. It involves a failure, bankruptcy management, relief of the sustainability of transformation in the context of crisis, systematic learning and learning from failure, intended destabilization of unsustainable institutions, inevitable decline, and active decision. They are concerned with the effort to use up the potential of institutional dynamics, which has been ignored so far. It emphasizes a long-term perception of the interventions and solving of problems emphasizing the wide range of productive functions that can be used in a targeted way in the real conditions. Such an approach tends to 'the prejudice of problem management', which has been identified by Mayntz (2004). This productive aspect is partly identified and examined by other authors, such as Munoz-Sanchez and Flores (2015, pp. 171-192). Their perspective of the change of characteristics of consumption in the sense of materialism and post-materialism is only examined within the Spanish conditions. The publications are often focused on the ecological aspect in terms of productive aspect or they are viewed as a generator of the change of landscape development, e.g. the work of Menendez et al. (2017, pp. 68-74). The complex based research of the subject has not been published yet.

Staněk and Ivanová (2017, pp. 5-6) refer to future development when they claim that a great many changes are beginning and bring about both challenges and many risks. Considering the challenge perspective, there is, for instance, a creation of the so-called personalized economics, provision of the quality of services saving human creativity, the process of environmental transformation of society or the development of services related to personal development. Further business and education possibilities are revealed for companies and their employees in this way when education is more effective. There are changes of information, warning systems, risk solution related to information leaks and processing. They are directly related to the process of preparing employees for such changes in both professional and private spheres. It will be very demanding for them and they will have to adapt to such changes and to learn to accept them in the fastest possible manner. It is obvious that there is a certain mental barrier which is often mentioned with the potential presence of investors.

There will be changes in the society in terms of philosophy and psychology that will deal with two key principles, i.e. personality and complexity. It will require a new quality of cooperation on business and personal levels, where the application of such changes is closely connected to education and informing of particular individuals. Behavioral economics seems to be a solution in terms of theoretical instrumental movement. It is able to help to work more effectively, better and more reasonably, for it is based on self-understanding as well as an understanding of decision-making mechanisms. However, the continuous process of education remains crucial, since it is not possible to deal with future challenges in connection with particular individual or instrumental public policies.

Considering the future and the justification of this research, it is appropriate to point out to the OECD's opinion that up to 70 % of labour positions are threatened by automatization and employing robots (Nejedlý, 2018, pp. 21-23). These conclusions have been confirmed by a number of professional papers and blogs. To quote but a few: "If Slovakia wants to deal with the inevitable automatization of numerous professions and to transform from an assembly workshop into a producer with a higher value added, it must increase the investments into the people. The economy is increasingly based on both the human and physical capital, which is in the form of machines, roads, and factories. Wealth will be in the heads (Lehuta, 2019, pp. 18-20)." The previously mentioned publication reflects on the information about the use of cognitive skills, which is confirmed in a broader view in this research as well. Also, there is a statement that refers to the relation to income and claims the further: "An additional year increases wages in professions requiring cognitive skills by 3 %, while a year in the manual job increases it by mere 2 % (Lehuta, 2019, pp. 18-20)." This research clearly shows the scope of applying cognitive, manual and psycho-motoric skills in education. It is, without any doubts, helpful in terms of the adjustment of public policies dealing with the support of education, which is crucial for the SR.

5 Conclusion

The objective of the paper was to find out and verify the importance of determinants that are crucial in deciding about the specified productive element (i.e. education). It was achieved with the element's use in household, or individual, consumption from the perspective of its future significance in the SR. Additionally, the productive element and the approach to it were characterized. It enabled the author to examine the current situation and hence to reveal its importance within the context of the country's future development.

The analytical part consisted of examining the current situation. The respondents' answers indicated a formation of positive conditions for the development of the productive factor of education for most participants. Although the active application was confirmed only in the case of one third of participants, the results seemed positive. Moreover, it was discovered that the bigger the income, the higher the expenditures on education and the bigger the activity in education were, which enhances motivation and an effort to learn. Thus, such individuals have a better and more objective concept of the future eventually and retroactively affecting their income, wealth and the development of creativity, which is currently viewed as the key factor of success in relation to the future challenges for the individual groups of participants. The research also confirmed that all of the three psychological movements, i.e. behavioral, cognitive and humanistic, are partly right in their concepts of human behaviour and successfully clarified the subject of decision-making about the productive element discussed. Apart from that, it opened up space for the possibility to define a formation of desired behaviour of particular groups of individuals and their size in the conditions of the SR.

However, there is a risk of the so-called behavioral failure, i.e. adopting irrational decisions, when an individual endangers his / her long-term welfare and the effect of productive elements through his / her decisions. It is, therefore, necessary for one to

be aware when decisions about education and expenditures on either private or public education are made. The approach which is irrational is predictable and provable (Lehuta, 2019, pp. 18-20). Such facts need to be also considered in case of forming measures, government programs and policies that account for inappropriate behaviour of citizens, i.e. groups, who may face the behaviour failure. It is recommended for the policy-makers to analyse the individual problems in detail, particularly the aforementioned falling standards, inadequate expenditures or negative attitudes to education. This issue is crucial when essential changes are taking place. As well as that, it clearly reveals that there is a necessity for an adaptable and more empirical approach, a greater financial and conceptual perception of education, a development of motivation, information distribution, long-term monitoring of individuals and risk groups for the purpose of educating and improving their position in the labour market with regard to the future.

References

- Ashmarina, S., Kandrashina, E., Zotova, A., Vochozka, M., Rowland, Z., Vrbka, J., Šuleř, P.: *Research on development trends and tendencies of the higher education system in Russia and in the world*. České Budějovice, Samara: Institute of Technology and Business, Samara State University of Economics, 2018.
- Baker, Z.: Reflexivity, structure and agency: Using reflexivity to understand further education students' higher education decision-making and choices. *British Journal of Sociology of Education*, 2019, 40(1).
- Barros, L. A. B. D.: Group corporate decisions: A behavioural approach. *Rae-Revista De Administracao De Empresas*, 2018, 58(6).
- Crozier, G., Reay, D., Clayton, J., Colliander, L., Grinstead, J.: Different strokes for different folks: diverse students in diverse institutions - experiences of higher education. *Research Papers in Education*, 2008, 23(2).
- Čitáryová, E., Chrenko, T.: Analysis of educational structure of population in terms of income level in Slovakia. *International Seminar: Quantitative Methods in Economics, Slovak Paradise*, 2011.
- Gage, N. L., Berliner, D. C.: *Pedagogical psychology*. Weinheim, Germany: Beltz Publishing, 1986.
- Lehuta, M.: Forget the machines, invest in ourselves. *TREND Week of Economics and Business*, 2019.
- Kahneman, D., Tversky, A.: Prospect theory: An analysis of decision under risk. *Econometrica*, 1979, 47(2).
- Madarász, L., Vaščák, J., Andoga, R., Karol', T.: *Decision making, complexity and uncertainty, theory and practice*. Košice: Elfa, s.r.o., 2010.
- Mayntz, R.: *Governance theory as advanced control theory?* Köln: MPIFG Working Paper 04/1, 2004.
- Menendez, D., Erick, R., Cavallos, Z., Doris, P.: The link of higher education with the change of the productive matrix in Ecuador. *Revista Ciencias Pedagogicas E Innovacion*, 2017, 5(3).
- Munoz-Sanchez, M., Flores, A. M. P.: Food in Spain in times of crisis: New models of values and consumption. *Revista De Humanidades*, 2015, 25.
- Nejedlý T.: Working repetitive, you should strengthen your cognitive skills. *TREND Week of Economics and Business*, 2019.
- Newig, J., Derwort, P. J., Nicolas W.: Sustainability through institutional failure and decline? Archetypes of productive pathways. *Ecology and Society*, 2019, 24(1).
- Popjaková, L.: Causes of low motivation to learn and career growth among young people. In J. Husár, M. Machalová, T. Hangoni, B. Kuzyšin (Eds.). *New Social Education of Man IV, International Interdisciplinary Science Conference*, Prešov, Slovakia, 2015.
- Psárska M.: Determinants of real decision making on productive components of consumption under the current economic conditions of the Slovak Republic. In J. Horák (Ed.), *Innovative Economic Symposium 2018 - Milestones and Trends of World Economy (IES2018) – SHS Web of Conferences*, Beijing, PR China, 2018a, 61.
- Psárska M.: Theoretical and practical view of development and differences in the application of productive consumption components in Czech and Slovak households under current economic conditions. In J. Horák (Ed.), *Innovative Economic Symposium 2018 - Milestones and Trends of World Economy (IES2018) – SHS Web of Conferences*, Beijing, PR China, 2018b, 61.
- Ronzhina, N. V., Romantsev, G. M., Piskonov, V. A., Vrbka, J.: Economic laws of division and changing the labor in the system of ontemporary vocational education determination. *IEJME – Mathematics Education*, 2016, 11(7), 2788-2799.
- Staněk, P., Ivanová, P.: *Small and medium-sized enterprises*. Wolters Kluwer, s.r.o., 2017.
- Valenčík, R.: Economics - how to understand it and what it is for? *Marathon*, 2004, 53.
- Veselková, A., Holková, V.: The salaries of Slovak teachers and the literacy of Slovak pupils are below average. *Economic Policy Monitor*, 2018, 12(4).
- Vrbka, J., Stehel, V.: The issue of multicriteria decision-making: Model example of business partner risk assessment. In I. Poppa, C. Dobrin, C. N. Ciocoiu (Eds.), *Proceedings of the 13th International Management Conference: Management Strategies for High Performance (IMC 2019): International Management Conference*, Bucharest, Romania, 2019, 738-749.

Primary Paper Section: A

Secondary Paper Section: AH

THE INFLUENCE OF THE TRANSACTION TAX ON THE SELECTED ECONOMIC INDICATORS

^aMARTINA REGÁSKOVÁ, ^bANNA BÁNOCIOVÁ

*Faculty of Economics, Technical University of Košice, Némcovej
32, 04001 Košice, Slovakia*

email: ^amartina.regaskova@gmail.com,

^banna.banociova@tuke.sk

This research was supported by VEGA project No. 1/0430/19 Investment decision-making of investors in the context of effective corporate taxation.

Abstract: The paper focuses on the effect of transaction taxes in the French financial market and the selected economic indicators. We would like to point out the importance of transaction taxes on the economy in the EU and to analyse the influence of this tax on the single European capital market. We assume that financial transaction tax (FTT) has a positive effect on economic growth and that the correlation between FTT and the hedging assets is statistically significant. We used a regression model where we analyse FTT, economic growth, market volume, price of index CAC40, total financial assets, financial derivatives, and debt instruments. Our results have shown the negative impact on market volume as well as on economic growth shortly after the adopting FTT in France.

Keywords: financial transaction tax, financial regulation, EU market, France.

1 Introduction

The tax system fulfils several important functions in the economy. Taxes are a source of public revenue, a source of risk reduction in the financial sector, and a source of additional funding in a case of a bank failure. Except from stabilizing function of taxes, they also serve as an instrument for risk prevention to correct market fragmentation. To prevent, or at least to mitigate the effects of future financial crises due to risky operations with financial instruments, it is important that a country (or group of countries) has an effective tax system. An effective and optimal tax system should regulate the volume of short-term, high-risky transaction activities in the financial sector. The literature currently discusses on appropriate form of financial services and banking regulation, on the optimal tax system of derivatives in speculative strategies, or on the impact of fiscal taxes and capital regulation on the stability of the financial system. Within the EU Member States, taxation is very actual issue in the context of understanding harmonization and integration process.

Because of different tax systems within the EU Member States, the research in taxation of financial instruments is becoming a challenge for finding optimal system for transparent capital market and competitive fiscal union. Therefore, our motivation is to evaluate the impact of financial transaction tax on capital market, and to find out how this tax influences the development of economic indicators, such as trading volume of financial assets, volatility, economic growth, or derivatives instruments.

There are several types of taxation of financial transactions and financial instruments in the world economies. It is a direct form of taxation (such as financial transaction tax, FTT), and indirect form of taxation (such as value-added tax or financial activity tax, FAT). In the United Kingdom, the United States, Switzerland, China or in most Asian countries, there is applicable a stamp duty which includes all types of shares and securities as well as electronic financial transactions. Another type of transaction taxation is security transaction tax (STT) on purchases and sales of securities, which is applicable in South Korea, South Africa, or Taiwan. In Belgium or Poland, there is a transfer tax that taxes on transfers of shares ownership. The indirect tax that is promoted by the International Monetary fund at the international level, represents financial activity tax (FAT), which taxes on total profits, dividends and remunerations that are paid by financial institutions. The main argument for introducing FAT is that the profits bring value added, but due to the VAT exemption of financial services, these revenues are not taxed. Finally, with a structure remarkably like the STT, it is a financial transaction tax that has provoked the most discussion among professionals and at the EU level in recent times. FTT is applied in various forms in countries such as France, Italy,

Finland, or Brazil. After the financial crisis in 2008/09, there are stronger opinions on the introduction of FTT within EU countries, as a fiscal policy instrument to prevent the crisis and provide an additional budgetary source to cover debt costs in the financial sector or to protect markets from speculative transactions.

Since 2012, the debate on the European financial transaction tax has been more discussed between the European Commission and European Ministers of Finance, especially in Germany. In the context of the individual Member States, FTT as a direct form of taxation represents an economic policy instrument for regulating and stabilizing the common capital market. It aims to eliminate risky speculative activities on the market, to prevent transactions that could lead to financial fraud and to provide additional sources to the European budget.

In this paper, we will focus on the analysis of the effectiveness of FTT in France. The aim is to determine the impact of this tax on the French market in comparison with the period before and after the adoption of the tax. The contribution is divided into general introduction and three chapters. The first chapter presents the theoretical background and studies which deal with taxation on financial markets from different points of view. In the second chapter, there is described the methodology, our assumed hypothesis and data used. In the third analytical chapter, we interpret our results and compare them with similar studies. To analyse the impact of FTT, we used regression analysis. In conclusion, we summarize our results and recommend further analysis in this field for future research

2 Theoretical background

The ideas of the tax burden of financial instruments are not new and began to emerge in the late 19th and early 20th centuries, especially in the United Kingdom and the Nordic countries of Europe. Transaction taxes experienced more significant improvement during the Great Depression, promoted by J. M. Keynes. Later, during the 1970s, at a time of high price volatility and asset price fluctuations, J. Tobin came up with the idea of proposing transaction tax on assets to stabilize markets and to ensure stable exchange rates. In those times, the economic policy aimed to find a balance model for the financial assets' prices, increase market efficiency and limit speculative transactions.

The recent global financial crisis in 2008/09 was evidence how the financial sector can significantly affect the functioning of the economy. In literature, there can be found some studies analysing the financial and debt crisis and discussing about the use of fiscal taxes as an instrument for regulating market activities (Colliard & Hoffmann, 2017). Also, we can find tax studies focus on maintaining the effective corporate taxation (Andrejovska & Pulikova, 2019; Andrejovska et al., 2015), financial stability or small and medium businesses (Andries et al., 2017; Mura et al., 2017), supporting the economic growth (Raisová, 2015), evaluating corporate taxation and its impact on the competitiveness within the European countries (Mihokova, et al., 2016) increasing the efficiency of capital market (Bodnar et al., 2003; Pastor et al., 2017), or regulating speculative tax strategies with derivatives (Batram, 2019).

Generally, recent theoretical and empirical studies focus on two main areas in FTT analysis: (1) on the effect of the tax on market volatility, and (2) on the effect of the tax on trading volume. Pomeranets & Weaver (2011) claimed the general hypothesis that the correlation between FTT and market volume is statistically significant and an increase in tax would lead to an increase in volatility of prices of some financial assets. Baltagi et al. (2006) emphasized that the introduction of FTT can lead to speculative transfer from taxed to non-taxed transactions, or non-taxed foreign financial markets. Colliard & Hoffmann (2017) and Chou & Wang (2006) determined the impact of FTT on market liquidity and price volatility. Hanke et al. (2010) found

out that if policymakers provide additional liquidity on markets shortly after the introduction of FTT, then price volatility will decrease. McCulloch & Pacillo (2011) states that transaction tax could be a source for additional budgetary revenues, and it cannot lead to tax distortions. Li et al. (2013) found out that security transaction tax contributes to stabilize markets by reducing market volatility but has negative effects on market efficiency.

Also, there are some studies supporting the FTT, as well as studies that criticize its efficiency. Baltagi et al. (2006), Rühl & Stein (2014) and Davila (2019) believe that this tax will ensure financial stability, reduce short-term speculative strategies, strengthen capital market efficiency, increase market transparency in line with the real economy and reduce fluctuations of the financial asset price. These studies provide evidence that FTT represents an instrument for preventing market fragmentation. Kastner (2018) focuses on the advocacy within EU financial industry at different stages of the policy debate and describes changes after FTT introduction on regulatory environment. However, opposing arguments (e.g. Dell' Era, 2018) provide evidence that applying FTT with different definitions of tax bases and tax rates make it more likely to take aggressive strategies in optimizing accounting profits. In EU countries, opponents argue that different tax rates in the Member States encourage speculative capital transfers and increase the risk of financial frauds. Consequently, FTT is a "double-edged sword" which can lead to a weakening of the financial position and increase market uncertainty.

Within EU countries, the topic of a financial transaction tax is very actual in terms of a more detailed understanding of the effect of the tax on harmonization and the integration process. The studies analyse FTT in those Member States that have already introduced it in their national economies and examine the impact on the economy and economic entities. Hvozdyk & Rustanov (2016) researched how FTT affects the volatility of the Italian capital market. Using statistical tests, they have shown that FTT has a positive effect on the cost of capital, but no effect on market liquidity. It may mean that the performance of the capital market depends more on market liquidity of financial institutions. Schulmeister (2008) emphasizes that FTT reduces asset price volatility and that total tax revenues in the European budget would reach 1.6% of GDP if the FTT rate were at the level of 0.05%. Solilová & Nerudová (2015) research the possible effect of FTT in EU27 and EU11 and find negative impact on tax revenues. Authors recommend that FTT is undesirable to adopt at fragile economic period and recession in Europe.

FTT in France (FFTT) after its adoption has been analysed in several studies, where most authors dealt with tax in relation to total tax revenues, market liquidity, trading volume and total assets. Becchetti et al. (2014) analysed non-taxed securities with lower market capitalization than EUR 1 billion. Their findings did not confirm any significant effect of the tax on market liquidity. Colliard & Hoffmann (2017) evaluated the French FTT before and after 2011 (i.e. after the introduction of the tax in the country) and concluded that there was a slight positive relationship between transaction taxes and economic growth. They also found out that after the introduction of FTT, the volume of shares decreased by 10%. This can be explained by a decrease in market activity, an increase in possible arbitrage trades and an increase in the spread between the purchase and sale price. Griffin & Persaud (2012) came to the opposite conclusion, explaining the negative relationship between FTT and economic growth with different periods of holding assets. Campbell et al. (2011) found by regression analysis that FTT has a statistically significant effect on expected profits and market performance. Cappelletti et al. (2017) explained the effect of FTT on market volatility with different periods of holding assets. Campbell et al. (2011) found by regression analysis that FTT has a statistically significant effect on expected profits and market performance. Cappelletti et al. (2017) explained the effect of FTT on market volatility in the French and Italian markets based on difference-in-difference analysis (DID). Becchetti et al. (2014) also based on DID, parametric and non-parametric tests found a significant decrease in market volume after the introduction of the French tax compared to non-taxable shares. Eichfelder & Lau (2017) examined the monthly volatility of the

French stock index CAC40 and found that if most authors analyse intraday price volatility in their research, it is questionable whether short-term liquidity is affected by the transaction tax because the French proposal do not tax net intraday transactions.

The French FTT model is mentioned in the last proposal of a European financial transaction tax by the European Commission from 2019. The conditions for the French transaction tax are as follows: (Amafi, 2019)

- the tax is applied to any purchase of equity securities issued by a company listed on a French stock exchange Euronext with a market capitalization of more than EUR 1 billion (the reference date is December 1st of previous tax period).
- the tax rate is at the level of 0.2% for trading transactions with shares, and 0.01% for highly frequency assets and credit default swaps.

In summary, we can state that the adoption of FTT has both benefits as well as weaknesses for the economy. The assessment of the tax is described in the following table (KPMG, 2019).

Tab. 1: Benefits and drawbacks of FTT

Strengths	Weaknesses
<ul style="list-style-type: none"> - reduction in the volume of short-term speculative transactions - an additional source of public revenues - increasing the transparency of the capital market - reduction of fluctuations in financial assets 	<ul style="list-style-type: none"> - only negligible effect on economic growth - difficult to determine tax base - an increase of speculative transactions from short-term point of view - total tax revenues are dependable of real transaction volume
Opportunities	Threats
<ul style="list-style-type: none"> - protection against financial market fragmentation - improving the efficiency of capital market - compensation of public revenues due to the exemption of financial services from VAT - limitation of speculative investment activities 	<ul style="list-style-type: none"> - higher transaction costs and limited trading with derivatives instruments - higher risk of aggressive tax strategies - excessive tax burden on the financial sector - shifting the tax burden to final consumers

Source: authors' proceeding based on literature review

Except for the impact of transaction tax on the financial market, there is also an analysis of the relationship between tax and banking regulation. However, it is less often discussed in the literature. Banks, as market makers, are important economic entities whose activities are significantly affected by regulatory measures. Banking regulation requires minimum capital adequacy requirements to provide sufficient protection against the financial risks and market failures. Regulatory measures are primarily aimed at improving market discipline, increasing the transparency of financial intermediation, and protecting consumer interests. Based on US data, Schandlbauer (2017) empirically proves the role of taxes in capital structure and provides evidence that better-capitalized commercial banks increase long-term borrowing debt, and therefore they use more efficient benefits of the tax shield. Conversely, weaker capitalized banks with lower ability to provide loans have higher capital financing costs and thus higher tax liability. Andries et al. (2017) analyse in detail the function of corporate tax as an instrument for achieving and ensuring the stability of the financial sector. They evaluate how the tax system affects the financial statements of banks and confirm the hypothesis that taxes harm the financial statements in terms of stability and transparency. Increasing debt financing and the possibility of debt deduction promotes excessive indebtedness, which does not contribute to the bank's stability. Andries & Căpararu (2014) investigates the tax competition within the banking system in EU

countries and found that in the new Member States was competition significantly higher between 2001 and 2006 than in the old Member States. Studies such as Bartram (2017) or Giraldo-Prieto et al. (2017) evaluate the influence of transaction taxes on risk management and found statistically significant effect on hedging derivatives.

As the theoretical literature proves, the financial transaction tax is an important indicator that affects the economic processes in the country as well as in the internal environment of the companies. Therefore, it is in our interest to analyse the impact of this tax shortly after the introduction on the financial market and to draw conclusions for the Single European market.

3 Research and methodology

Our main goal is to explain the impact of the introduction of FTT on the European market and its impact on the behaviour of companies. To research the impact of FTT, we choose the method of regression analysis, expressed in the following form:

$$y(\text{FTT}) = \beta_0 + \beta_1 \cdot \text{GDP} + \beta_2 \cdot \text{Price} + \beta_3 \cdot \text{Volume} + \beta_4 \cdot \text{DFA} + \beta_5 \cdot \text{Debt short-term assets} + \beta_6 \cdot \text{Debt long-term assets} \quad (1)$$

where: Y – financial transaction tax (measured as a proportion of equity securities to total financial assets)

GDP (X1) – real economic growth, expressed in %

Price (X2) – development of French stock index CAC40 (log value)

Volume (X3) – market volume of CAC40 (log value)

DFA (X4) – derivative financial assets (log value)

Debt assets (X5, X6) – short-term and long-term debt financial assets held for trading (log value).

The relation to express FTT can be described as follows:

$$\text{Tax}_{it} = \text{FTT}_{it} / \text{TT}_{it} \quad (2)$$

where: TT_{it} – the volume of all securities on the French market;
 FTT_{it} – the volume of relevant taxed transaction with equity securities on the French market in the given year.

To achieve our goal, we have set two hypotheses in the following form:

H1: *The introduction of FTT in France supports the economic growth in the country and, and in the long run reduces the market volume of shares.*

H2: *There is a statistically significant relationship between FTT and hedging assets.*

In the first hypothesis, we assume that a transaction tax, as a fiscal instrument of economic policy, stimulates economic growth and ensures financial stability after a period of the debt crisis. The introduction of the tax limits high-risk short-term financial transactions, which cause market fragmentation, and thus limiting fluctuations in the prices of financial assets. In the long run, the tax harms the trading volumes of taxable instruments on the market.

In the second hypothesis, we assume that FTT has a significant effect on trading and hedging derivatives. As trading instruments are mainly used for short-term market activities, we assume that the tax will harm the volume of these instruments and reduce excess liquidity in the short term, which may distort the price of hedging assets.

We retrieved the data from the French stock exchange Euronext (i.e. data for the development of index CAC 40), from ECB Statistical Warehouse and Bank for International Settlement (i.e. data for derivative instruments) and from Eurostat (i.e. data for economic growth).

4 Results and discussion

Based on the results, GDP growth would fall by 0.1056% (if the other variables are equal), while the results are statistically insignificant. Our assumption of stimulating economic growth through FTT has thus not been confirmed. Results also showed a slight negative effect of market price and market volume of the index CAC40. The weaker strength of the test (79.61%) and the statistical insignificance (on the significance level $\alpha = 0.05$) for the volume of trading asset may indicate the fact that the FTT reform affects the volume of an asset only in the short-term period, i.e. shortly after the introduction of the tax, while in the long period the tax has negligible effect. This may also be explained by the fact that, under the French measure, intraday securities transactions are not taxed. For debt assets, results showed that FTT harms short-term transactions (-0.18), but in the long run, the tax effect on debt instruments is positive (0.23). For bond issuance, this may mean a decrease in the rate of return on the bond (especially in the case of government bonds) and an increase in the cost of debt.

Tab. 2: An impact of FTT: The results of regression analysis

Regression	df	SS	MS	F	Significance F	
Regression	6	0.00153	0.00026	8.1562	0.01797	
Residual	5	0.00016	0.00003			
Total	11	0.00169				
	Coeff.	St. Error	t-Stat	P-value	Lower 95 %	Upper 95 %
Intercept	1.1979	1.0976	1.0914	0.32	-1.6235	4.0192
X1	-0.1056	0.1569	-0.6727	0.53	-0.5091	0.2979
X2	-0.0589	0.0456	-1.2896	0.25	-0.1761	0.0584
X3	-0.0221	0.0335	-0.6583	0.54	-0.1083	0.0641
X4	-0.0827	0.0277	-2.9884	0.03	-0.1538	-0.0115
X5	-0.1797	0.0491	-3.6572	0.01	-0.3060	-0.0534
X6	0.2253	0.1024	2.2009	0.08	-0.0378	0.4885

Source: authors' calculation

Our results are in line with the conclusion achieved by Griffith-Jones & Persaud (2012), who emphasized that the negative correlation between FTT and GDP is due to different periods of holding financial assets. Also, several other studies explain rather a negative effect on economic growth (such as Campbell et al., 2011; Cappelletti et al., 2017; or Schandlbauer, 2017). However, Colliard & Hoffmann (2017) came to the opposite conclusion and based on regression they proved the positive correlation of the tax and GDP in France. In the original proposal of FTT at the level of the euro area, the European Commission predicts that an increase in the tax rate by 0.10% will lead to a long-term decline in GDP of 1.76%.

Eichfelder & Lau (2016) also analyse the French tax and conclude that trading of intraday activities was more sensitive shortly after its introduction in May 2012, but they found no significant effect on trading volume over the longer period. Also, they examined the effect on volatility and stated that asset prices are more volatile in intraday trading, and in the long run, the tax has a stabilizing effect and eliminates speculative transactions. The effect on volatility was based on our results negative. It can be explained that the tax rate is low (0.02% for equity assets) and the tax base of the French FTT is not very broad and includes only shares of companies with a market capitalization of more than EUR 1 billion. Becchetti et al. (2014) confirm a statistically significant effect on the reduction of short-term daily liquidity and daily trading, as well as a reduction in the volume of trading for shares of small-cap companies. The negative effect on the volume of asset trading is also known from several critical studies, which are against the introduction of a tax on financial markets. For example, Yongyang & Zheng (2010), based on an analysis of the Chinese financial market, confirmed that a 22-percentage point reduction in the FTT tax rate would lead to a 28% increase in market volume. Any changes in the tax rate will have a significant effect on market efficiency and asset price volatility.

In the second hypothesis, we assumed a relationship between FTT and hedging derivatives. Our goal was to point out that

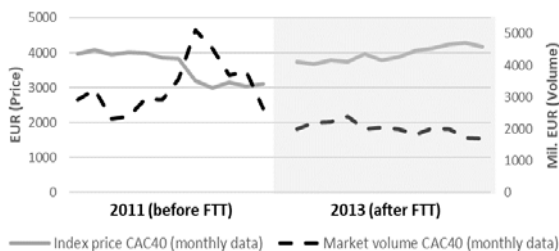
companies can achieve a significant competitive advantage when they use a risk management strategy. Companies that use hedging derivatives and hedge accounting have better market growth opportunities, lower transaction costs and less volatility in the accounting profit or loss. Hedging strategies represent an opportunity to reduce transaction costs and indebtedness. Our analysis showed that a 1% increase in the tax rate would lead to a decrease in derivative assets by 0.083%. It may indicate that hedging operations use predominantly daily and short-term trading. If derivative instruments were taxed, their trading volume would be reduced and the stability of cash flows and the protection of the accounting profit against market risks would be jeopardized. This area does not provide enough evidence in the literature. For example, Kalaitzake (2017), Davis et al. (2013) and Oxera (2011) examine the effect of FTT on the interest rate and currency risk in the financial sector and on the real economy. They state that a transaction tax increases transaction costs and limits the ability to effectively manage risks in the investment portfolio.

Debt financing can become more expensive for companies, which can lead to excessive speculative transfers of investments from debt to equity instruments (e.g. through convertible instruments), or to transfers of financial sources between the Member States that do not have these instruments taxed. The potential risk of tax avoidance on debt instruments may be that companies will use more financing through intermediaries and in the form of bank loans that are exempted from transaction tax. (PwC, 2013)

However, the tax base of the French FTT does not consider derivatives and operations with derivative instruments. In our opinion, in the case of taxation of financial transactions, derivatives should not be subject to this tax, as they improve the development of financial markets and contribute to the creation of liquidity. If derivative transactions were subject to FTT, the financial stability of companies' cash flows would be jeopardized on the one hand, and the tax would represent a risk of increasing transaction costs and restricting trading in derivative instruments on the other hand. Schäfer (2015) states that exemption of derivatives encourages traders to circumvent the tax through instrument arbitrage. Therefore, the FTT model including derivatives seems to be unsuitable for achieving the main objectives of the FTT.

Based on our analysis (Fig. 1), the real effect of FTT has increased the value of price and reduced market volume. Also, before FTT became effective, there was a higher fluctuation in the development of the French index, while after the tax introduction was the situation on the financial market stabilized. In comparison with studies, Colliard & Hoffmann (2017) found that after FTT, there was a decrease in trading activities with financial assets by 10%, affecting an overall drop in trading activities. Becchetti et al. (2014) focus on the impact of tax introduction on liquidity, intraday volatility, and volumes of stocks. They also state that FTT significantly reduces market volume comparing with non-taxed shares.

Figure 1: The real effect of FTT on trading volume and price of the French index CAC40 (a comparison of 2011 and 2013)



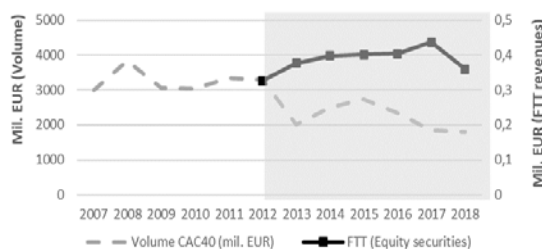
Source: authors' calculation

As FTT is associated with a market volume of financial assets, we assumed that a decrease in volume will reduce tax revenues

in the state budget (Fig. 2). However, after 2013 tax revenues rose even though a market volume reduction. We must emphasize that we compared the whole index, not only shares with a market capitalization above EUR 1 billion as the French measure required. To conclude, FTT can improve the stability of financial markets after the crisis and prevent against market fragmentation, but this relationship is necessary to examine in more detail.

Schäfer (2015) estimates the tax revenues for EU countries and based on results from France, Italy, and Germany states that FTT with a broad tax base can provide substantial revenues. The broad tax base can achieve considerable tax revenues even if the tax rates of FTT are lowered. This study also points out that small countries may lose significant amount of revenues because FTT is associated with the taxation of securities issued in residential country.

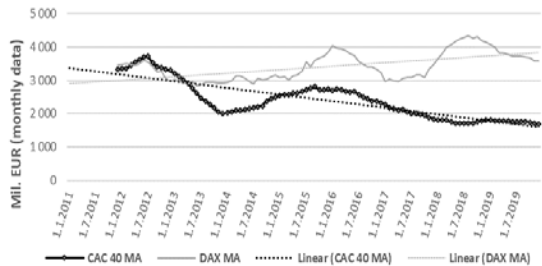
Figure 2: The relationship between FTT revenues and volume of CAC40 (2007-2018)



Source: authors' calculation

To show the real impact of FTT, we compare the French stock market with the German stock market, and we wanted to verify the effect of tax on taxed and non-taxed markets. The results showed (Fig. 3) that the FTT can influence market volume negatively. The trend of development of the French market is declining, while the trend of the German market without taxation is rising in the long-term horizon. So, financial transaction tax can lead to limitation of trading on the financial markets, but it is necessary to consider also other indicators, such as transaction costs, price efficiency, or market liquidity.

Figure 3: Volume in French market (CAC40) and German market (DAX) (moving average, mil. EUR; 2011-2019)



Source: authors' calculation

Based on regression analysis and empirical studies, we can summarize that the issue of FTT in the context of financial markets is important to evaluate for the following reasons:

- a) to develop risk management strategies and the ability of companies to hedge the stability of cash flows or fair value of financial assets, as well as to contribute to the overall stability of the financial sector.
- b) to identify the impact of the tax on debt financing, bond yields and transaction costs in the context of corporate indebtedness.
- c) to identify and understand the behaviour of companies in the market and the influence of market makers (e.g. financial institutions) on the microstructure of the capital and debt markets.

5 Conclusion

Our assumption why the FTT should be introduced at the level of EU was that it promotes economic growth and eliminates short-term speculative market activity that can cause instability in the economy. According to our results of the regression analysis, the positive relationship between FTT and economic growth was not confirmed, and the tax has only a negligible negative trend. However, taxing only equity instruments would increase the volatility of the stock index price in the short-term period and reduce the volume of market activities in the long-term period. Should FTT be introduced in the euro area, we consider modifying the original proposal from 2013, which included all transaction transactions on the market in the tax base, i.e. both equity, debt, and derivative instruments. In the proposal from 2019, the FTT only taxes transfers with shares, what is a better alternative. To maintain the competitive advantage of stock companies, it is more advantageous to keep derivative financial transactions untaxed, mainly due to the potential decrease in trading activities, as they are main instruments in the risk management strategy.

An opportunity for further research in the field of FTT is to analyse in more detail the economic impact of this tax, as current empirical studies provide conflicting conclusions or analyse the economic stability and FTT to a small context. The challenge is to identify the effect of the tax on the effectiveness of risk management, which can help a company achieve a significant competitive advantage. In the context of taxation of the banking sector and the effect on economic output, it is welcome to compare fiscal taxation of the financial and non-financial economic entities, or to examine the relationship between FTT and bank profitability, gross fixed capital formation or individual types of financial assets.

Literature:

1. Amafi.: *AMAFI - 19-03 - Financial transaction tax: Guidelines*. May 5, 2020. Retrieved from <http://amafi.fr/topics/en/documentation?page=8>.
2. Andrejovska, A., & Pulikova, V.: *Tax revenues in the context of economic determinants*. Vol. 14(1). Montenegrin Journal of Economics, 2018. 133–141 p. ISSN 1800-5845.
3. Andrejovska, A., Buleca, J., Drab, R.: *Impact of Macroeconomic Factors on Corporate Income Tax in the V4 Countries Using Regression Analysis*. Conference: Central European Conference on Finance and Economics (CEFE) Herlany, SLOVAKIA, 2015. 1-9 p. ISBN 978-80-553-2467-8.
4. Andries, K., Gallemore, J., & Jacob, M.: *The effect of corporate taxation on bank transparency: Evidence from loan loss provisions*. Vol. 63 (2-3). Journal of Accounting and Economics, 2016. 307-328 p. ISSN: 0165-4101.
5. Andries, M. A., & Căpraru, B.: *Competition and efficiency in EU27 banking systems*. Vol. 12(1). Baltic Journal of Economics, 2012. 41-60 p. ISSN: 1406-099X.
6. Baltagi, B. H., Li, D., & Li, Q.: *Transaction tax and stock market behavior: evidence from an emerging market*. Empirical Economics, Vol. 31(2), 2006. 393-408 p. ISSN 0377-7332.
7. Bartram, S. M.: *Corporate hedging and speculation with derivatives*. Vol. 57. Journal of Corporate Finance, 2019. 9-34 p. ISSN: 0929-1199.
8. Becchetti, L., Ferrari, M., & Trenta, U.: *The impact of the French Tobin tax*. Vol. 15. Journal of Financial Stability, 2014. 127-148 p. ISSN: 1572-3089.
9. Bodnar, G. M., Jong, A. D., & Macrae, V.: *The impact of institutional differences on derivatives usage: A comparative study of US and Dutch firms*. Vol. 9(3). European Financial Management, 2003. 271-297 p. ISSN:1468-036X.
10. Campbell, J.Y., Hilscher, J.D. & Szilagyi, J.: *Predicting financial distress and the performance of distressed stocks*. Vol. 9(2). Journal of Investment Management, 2011. 14-34 p. ISSN 2328-7713.
11. Cappelletti, G., Guazzarotti, G., & Tommasino, P.: *The stock market effects of a securities transaction tax: quasi-experimental evidence from Italy*. Vol. 31. Journal of Financial Stability, 2017. 81-92 p. ISSN: 1572-3089.
12. Colliard, J.E.; Hoffmann, P.: *Financial transaction taxes, market composition, and liquidity*. No. 2030. ECB Working Paper, 2017. European Central Bank (ECB), Frankfurt a. M. ISBN 978-92-899-2752-9.
13. Davila, E., & Walther, A.: *Does size matter? bailouts with large and small banks*. Journal of Financial Economics. 2019. ISSN: 0304-405X.
14. Davis, J., Smith, B., Wagner, M., & O'Kelly, R.: *The impact of the EU-11 financial transaction tax on end-users*. Oliver Wyman. 2013.
15. Dell'Éra, M.: *Financial Transaction Taxes and Expert Advice*. No. WP 10/2018. Bratislava : Research Department, National Bank of Slovakia. 2018. ISSN 2585-9269.
16. Eichfelder, S., Lau, M., & Noth, F.: *Financial transaction taxes: Announcement effects, short-run effects, and long-run effects*. No. 4/2017. IWH Discussion Papers. 2017. ISSN 2194-2188.
17. Giraldo-Prieto, C. A., Uribe, G. J. G., Bermejo, C. V., & Herrera, D. C. F.: *Financial hedging with derivatives and its impact on the Colombian market value for listed companies*. Vol. 62(5). Contaduría y Administración, 2017. 1572-1590 p. ISSN: 0186-1042.
18. Griffith-Jones, S., & Persaud, A.: *Why Critics are wrong about a financial transaction tax*. Vol. March 2012. European Voice, 2012.
19. Hvozdyk, L., & Rustanov, S.: *The effect of financial transaction tax on market liquidity and volatility: An Italian perspective*. Vol. 45. International Review of Financial Analysis, 2016. 62-78 p. ISSN: 1057-5219.
20. Chou, R. K., & Wang, G. H.: *Transaction tax and market quality of the Taiwan stock index futures*. Vol. 26(12). Journal of Futures Markets: Futures, Options, and Other Derivative Products, 2006. 1195-1216 p. ISSN: 0270-7314.
21. Kalaitzake, M.: *Death by a thousand cuts? Financial political power and the case of the European financial transaction tax*. Vol. 22(6). New Political Economy, 2017. 709-726 p. ISSN 1356-3467.
22. Kastner, L.: *Business lobbying under salience-financial industry mobilization against the European financial transaction tax*. Vol. 25(11). Journal of European Public Policy, 2018. 1648-1666 p. ISSN 1350-1763.
23. KPMG.: *EU: Amended financial transaction tax proposal*. Washington : KPMG. May 5, 2020. Retrieved from <https://home.kpmg/us/en/home/insights/2019/12/tmf-eu-amended-financial-transaction-tax-proposal.html>.
24. Li, H., Tang, M., Shang, W., & Wang, S.: *Securities transaction tax and stock market behavior in an agent-based financial market model*. Vol. 18. Procedia Computer Science, 2013. 1764-1773 p. ISSN: 1877-0509.
25. McCulloch, N., & Pacillo, G.: *The Tobin tax: a review of the evidence*. Vol. 2011(68). IDS Research Reports, 2011. 1-77 p. ISSN:2040-0217.
26. Mihokova, L.; Andrejovska, A.; Martinkova, S.: *Categorization of corporate taxation in the European Union countries using cluster analysis: a comparative study*. Vol. 160 (7-8). Economic Annals-XXI, 2016. 4-8p. ISSN 17286239.
27. Oxera: *What would be the economic impact on the EU of the proposal financial transaction tax? Review of the European Commission's economic impact assessment*. Oxford : Oxera. 2011.
28. Mura, L.; Havierníková, K.; Machová, R.: *Empirical results of entrepreneurs' network: Case study of Slovakia*. Serbian Journal of Management, Vol. 12(1), 2017. p. 121-131. ISSN: 1452-4864.
29. Pastor, D.; Glova, J.; Liptak, F.; Kovac, V.: *Intangibles and methods for their valuation in financial terms: Literature review*. Vol. 13 (2). INTANGIBLE CAPITAL, 2017. 387-410 p. ISSN: 2014-3214.
30. Pomeranets, A., & Weaver, D. G.: *Security transaction taxes and market quality*. No. 2011-26. Bank of Canada. 2011. ISSN 1701-9397.
31. PwC: *Financial transaction tax: The impacts and arguments: A literature review*. London : PwC. May 5, 2020. Retrieved from: https://www.pwc.fr/fr/assets/files/pdf/2013/11/pwc_ftt_literature_review.pdf.

-
32. Raisová, M.: *The supply perspective of economic growth during the last decades*. Vol. 32. *Procedia Economics and Finance*, 2015. 35-41 p. ISSN 2212-5671.
33. Rühl, T., & Stein, M.: *Discovering and disentangling effects of US macro-announcements in European stock markets*. Available at SSRN 2462515. <https://doi.org/10.2139/ssrn.2462515>.
34. Schandlbauer, A.: *How do financial institutions react to a tax increase?* Vol. 30. *Journal of Financial Intermediation*, 2017. 86-106 p. ISSN: 1042-9573.
35. Schäfer, D.: *Fiscal and economic impacts of a limited financial transaction tax*. Final report: No. 96. Research project conducted on behalf of the parliamentary group of the SPD, 2015. DIW Berlin: Politikberatung kompakt. ISSN 1614-6921.
36. Schulmeister, S.: *A general financial transaction tax motives, revenues, feasibility and effects*. No. 31819. WIFO, March 2008.
37. Solilová, V., & Nerudová, D.: *Financial transaction tax: Determination of economic impact under DSGE model*. Vol. 63(2). *Acta Universitatis Agriculturae et Silviculturae Mendelianae Brunensis*, 2015. 627-637 p. ISSN 1211-8516.
38. Yongyang, S., & Zheng, L.: *The Impact of the Securities Transaction Tax on the Chinese Stock Market*. München : Universität München. 2010.

Primary Paper Section: A

Secondary Paper Section: AH

DEGREE OF EXTROVERSION OF UNIVERSITY STUDENTS OF MARKETING COMMUNICATION

*PAVEL ROSENLACHER

Faculty of economic study, University of Finance and Administration, Estonská 500, 101 00, Prague 10, Czech Republic
*email: *pavel.rosenlacher@vsfs.cz*

Authors acknowledge the support of Research project IGA VŠFS Prague No 7429/2020/05 „Processing of visual stimuli by the consumer from the point of view of the eye tracking method.“ funded by the University of Finance and Administration, Prague.

Abstract: Eysenck's personality typology is based on a factorial personality survey. Eysenck was of the opinion that personality can be adequately described by two dimensions, introversion-extroversion and neuroticism-stability, and later, on the basis of further studies, added a third dimension called psychoticism-normality. This article deals with Eysenck's typology of personality, and above all to the personality trait of extroversion - introversion, which is characterized by certain characteristics, assumptions and skills that can be used not only during studies but also at work. Eysenck's typology was studied by university students in marketing communication, which is expected to have a higher representation of extrovert types due to the specialization. The results of the research showed that 65.4 % of extroverts are represented in marketing communication students, which is a higher proportion than other studies.

Keywords: Eysenck typology, extroversion, introversion, marketing communication, students, study.

1 Eysenck's theory of personality

The author of this typology is the German-British psychologist Hans Jürgen Eysenck (Kelnarová and Matějková, 2014), who published the questionnaire for this typology in the 1960s, and based the typology primarily on using objective, empirical and proven bases based on natural science orientation (Nakonečný, 1997). Eysenck's typology is based on a personality factor survey, and complicated mathematical calculations and experimental psychology results were used to create the typology (Cakirpaloglu, 2012). It should be noted that it was based on the concept of I. P. Pavlov's neural processes and the characteristics of the neurophysiological construct of excitement and depression, with extroverts having a lower level of excitement of the cerebral cortex than introverts and this genetic predisposition may be applied in the learning process (Nakonečný, 1997). In addition, Oseland and Hodsman (2018) add that extroverts therefore need more experience and more stimulation than introverts, for which such a higher level of stimulation would be rather worrying. Qanwal and Ghani (2019) therefore emphasize that Eysenck was known by experimental studies and initially considered that personality can be adequately described by two dimensions, introversion-extroversion and neuroticism-stability, and later added a third dimension called psychoticism-normality. Collectively, these factors were called dimensions as PEN, which is an acronym composed of the initial letters of each innate dimension (Cakirpaloglu, 2012). By combining two basic dimensions (introversion-extroversion and neuroticism-stability) it is possible to create a four-quadrant coordinate system presenting four basic types of personality called phlegmatic, melancholic, sanguine and choleric (Kelnarová and Matějková, 2014), the names and characteristics of these personality types Eysenck used Hippocrates' personality typology (Cakirpaloglu, 2012).

Although Eysenck's personality typology has been both criticized and accentuated, Eysenck's concept of biological conditionality is relatively accepted and, at the same time, introversion-extroversion is considered to be the best empirically documented factor of personality type (Nakonečný, 1997). Other typologies, such as the Big Five Inventory (BFI), include introversion-extroversion and neuroticism-stability factors (Oseland and Hodsman, 2018). Below, the individual factors will be characterized in more detail and the differences between them will be compared. The dimension of psychoticism-normality has not been investigated in the research because its use is more in clinical practice.

1.1 Factor introversion-extroversion

Duis Carl Gustav Jung was the first to introduce the concept and classification of personalities into extraverts and introverts in 1921 (Roslan et al, 2017). Extroversion is a human orientation to the external environment and refers to the relationship of the subject and the object that has a positive focus on the object, whereas introversion is a human inward orientation rather than an extrovert towards the external object, but back towards itself (Settineri et al, 2018). To put it simply, extroverts focus on the outside world, people or situations, while introverts focus on their inner world and ideas (Chigerve, Boudreaux and Ilkiw, 2019). Extroverts are predisposed to be social, impulsive, colloquial and like changes, while introverts tend to return to past events, are closed, reserved, controlled and trying to plan things (Meira et al, 2017). Sristava, Angelo and Vallereux (2008) report that sociability is one of the most prominent features of extroverts. Introverts can be characterized as being more self-centered, their thoughts and emotions, they are shy, quiet, reserved, pessimistic, tend to plan more, have only a few very close friends and appreciate ethical standards (Smith and Lovgren, 2018).

Since the 1970s it has been assumed that extroverts are better destined to learn foreign languages than introverts, mainly because they have more opportunities to practice the language in a collective. However, there are also studies showing that introverts have a better internal predisposition to language learning because they have a longer span of long-term memory (Qanwal and Ghani, 2019). Given the conditions in which learning can take place, it is found that extroverts are much better at cognitively challenging tasks, comprehension tasks, and mental arithmetic in a noisy environment, followed by introverts looking for quiet places in the library without noise and bustle, compared to extroverts (Oseland and Hodsman, 2018). Relaxation training is more suitable for introverts, because they prefer a quiet and peaceful environment, while extroversion is more suitable for thought skills training because they seek a more stimulating environment (O'Connor et al, 2016). Introversion and extroversion also have an impact on the creation of student communities in the first years of college because extroverts are ready to find or create a community faster than introverts (Smith and Lovgren, 2018). In economics courses, introverts performed better in self-learning than in group (Borg and Shapiro, 1996). At the same time, introverts are more hesitant during group discussions to share their ideas and solutions with others than extroverted students (Antonenko, 2014). This may result in introverts who may prefer to rework their solutions and ideas, while extroverts tend to give more contradictory ideas and be more confrontational (Roslan et al, 2017). Extroverts have an advantage over introverts especially in speaking and reading skills, while introverts have an advantage in listening skills (Zafar, Khan and Meenakshi, 2017), but differences in writing skills have not been confirmed (Alavinia and Hassanlou, 2014), albeit introverts may be more suited to written tests (Qanwal and Ghani, 2019). Nakonečný (1997) states that introverts at school are more successful, especially in difficult fields than extroverts. Furthermore, the author adds that in learning introverts are more and more effectively influenced by punishment, while extroverts by reward.

The extroversion rate also affects eye contact in interaction with others, with extroverts in personal communication maintaining longer and more frequent eye contact than introverts (Roslan et al, 2019). This is confirmed by other studies which mention that extroverts maintain eye contact more often and longer than introverts in conversation with others (Ağıl and Gündükbay, 2018).

It is assumed that the behaviour of a user on the Internet does not differ significantly from real life, and it is also possible to

characterize his personality in the online environment (Zhao et al., 2018). Less extroverted types prefer communication over the Internet, while more extroverted types prefer personal communication (Ebeling-Witte, Frank, Lester, 2007).

1.2 Factor neuroticism-stability

Duis Neuroticism is associated with lower stress resistance, insufficient concentration, and is accompanied by the lability of the vegetative nervous system in the form of increased sweating, heart palpitations, or digestive problems (Nakonečný, 1997). The opposite of neuroticism is emotional stability, with neuroticism being associated with affinity, sensitivity, and reactivity (Zhao et al., 2018). Neuroticism is associated with people who tend to be nervous, tense, moody and emotional (Qanwal and Ghani, 2019). Types with a higher degree of neuroticism are not emotionally stable and may more often experience negative emotions such as fear or anxiety (Farahi et al., 2019). High levels of neuroticism have been linked to some mental illnesses such as depression or anxiety (Rees et al., 2015). A high degree of neuroticism has been associated with a low degree of personality psychological resilience (Lu et al., 2014), where personality resilience refers to the body's resilience, its ability to mitigate the negative effects of stress, and its ability to adapt (Oshio et al., 2018).

Upon exposure to noise people exhibiting a higher degree of neuroticism gives less mental performance than emotionally stable types, and it was found that neurotic introverts are more susceptible to noise when performing tasks than emotionally stable extrovert. Emotionally unstable types are more focused on the source of unwanted noise, which can be stressful for them (Oseland and Hodsman, 2018), while emotionally stable introverts show better noise resistance. Neuroticism is also associated with typical brain activity, particularly in the limbic system, particularly in the amygdala and hypothalamus (Farahi et al., 2019). Neuroticism may be manifested by higher activity in the left hemisphere of the brain (Bono and Vey, 2007).

A negative correlation of neuroticism with the use of the Internet for educational purposes was found (Mark and Ganzach, 2014). Higher levels of neuroticism suggest the use of Facebook Wall in particular, while low levels of neuroticism (or emotional stability) tend to post photos on Facebook (Ross et al., 2009). However, neuroticism has a positive correlation with the time the user spends on Facebook (Ryan and Xenos, 2011). Neuroticism shows a negative correlation with the use of the Internet to search for information on products where trust and safety are less important aspects (Mark and Ganzach, 2014). Neuroticism as well as extroversion strongly positively correlates with confidence in false rumors (Lai et al., 2019).

2 Materials and methods

The main aim of the research was to find out the degree of extroversion and introversion among university students studying marketing communication. The focus and name of the field of study assumes that it will attract rather extroverted personality types. Eysenck's Personality Questionnaire (EPI) was used to measure the degree of representation of both personality factors (extroversion, neuroticism), which measures the degree of extroversion, neuroticism and the scale of lie (Yin et al., 2019) and consists of 57 questions (Roslan et al., 2019). The questionnaire was submitted to the respondents in printed form, while in order to ensure the accuracy of the data obtained, the questionnaire was submitted to the respondents twice within a time period of at least 14 days. As a result, results from both collections could be compared. Data were collected from the first week of November 2019.

2.1 Research Sample

Duis The basic group of respondents were bachelor and master students of marketing communication (University of finance and administration). The sample size was set at 110 respondents who will be selected throughout the bachelor and master study programs in marketing communication. A total of 224

completely completed questionnaires were collected from respondents who participated in both phases of the data collection. Respondents who submitted only one completed questionnaire were not included in the data processing, namely 18 persons. The sample of respondents who participated in both phases of data collection consisted of 112 respondents, namely 31 (27.7%) men and 81 women (72.3%).

2.2 Results

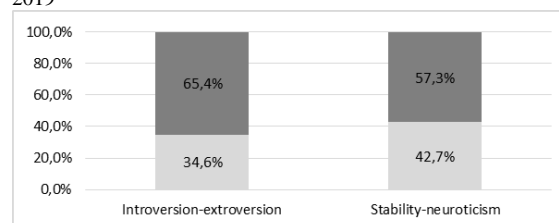
Data processing and evaluation were always performed according to individual personality factors, i.e. extroversion, neuroticism and a range of lies. The maximum achievable extroversion and neuroticism are 24, to the value of 12 is the introversion and neuroticism factor possibly it is the emotional stability. The maximum achievable lie value is 9 points, and the higher the values, the more questionnaire results may not reflect the real image of personality.

Table 1 shows descriptive statistics data for each personality factor measured in the test. The data show that among the respondents, the prevalence of extroversion rather than introversion prevails, although due to the standard deviation values it is evident that respondents with an extroversion rate below 12 points can be included in the sample, which is an introversion. In the case of the neuroticism factor, the data show that in general, neuroticism prevails in the respondents, even though the standard deviation shows that emotionally stable types are found in the selected sample of respondents (graph 1).

Tab. 1: Evaluation of personality factors in the sample of respondents, 2019

	Introversion – extroversion	Stability – neuroticism	L-Scale
Diameter	13,5	13,2	1,6
Median	14,0	13,0	1,0
St. Deviation	4,1	5,3	1,6

Graph 1: Overview of proportions of individual dimensions, 2019

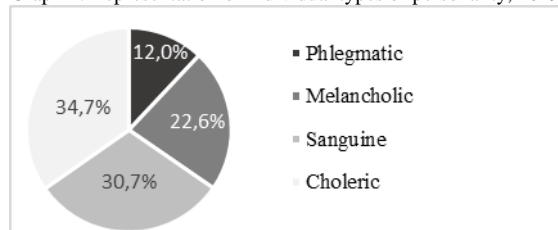


Personality factors for all respondents were processed in Table 1 and Chart 1, but data can also be processed after the classification of respondents among individual types of personality, i.e. phlegmatic (E = max. 12, N = max. 12), sanguine (E = min 12, N = max 12), melancholic (E = max 12, N = min 12) and choleric (E = min 12, N = min 12). Data after classification into individual personality types is shown in Table 2.

Tab. 2: Evaluation of personality factors by personality types, 2019

	Sample ratio	Diameter			Median			St. Deviation		
		Ex	Ne	L	Ex	Ne	L	Ex	Ne	L
Phlegmatic	12,0 %	8,7	6,9	3,0	9,0	7,0	2,0	2,4	3,2	2,7
Sanguine	30,7 %	16,7	8,0	1,9	16,0	8,5	2,0	2,9	2,4	1,5
Melancholic	22,6 %	8,6	17,1	1,2	9,0	17,0	1,0	2,0	2,8	1,2
Choleric	34,7 %	15,5	17,2	1,2	15,0	17,0	1,0	1,7	3,3	1,3

Graph 2: Representation of individual types of personality, 2019



Graph 2 and Table 2 show that the most numerous type of personality is choleric (34.7% of the sample of respondents), which is characterized by a higher rate of extroversion and neuroticism. The second most frequent type in the sample of respondents is sanguine (30.7%), which is characterized by a higher rate of extroversion, but emotional stability. The sample of respondents therefore represents 65.4% of extroverts. The lowest proportion is represented by the personality type of phlegmatics (12%), which is characterized by low extroversion (or high introversion) and emotional stability. The number of respondents with a higher rate of neuroticism is 57.3%.

3 Discussion

The Based on the data obtained and their comparison with other studies, it can be said that the selected sample of respondents contains a relatively higher proportion of extroverts of 65.4% compared to the study described by Settineri et al (2018), whose selected sample of respondents contained 46.5% extroverts and 53.5% introverts. Chigerwe, Bodreaux and Ilkiw (2019) conducted personality type surveys in veterinary medicine students, where the proportion of extrovert types was 46.7%, with introvert types slightly prevailing. Qanwal and Ghani (2019) report that 49% of the respondents were extroverted.

When comparing the results found in the research itself, there is a relatively greater prevalence of extroverted types of personality over introverted ones, which may be influenced precisely by the focus of the study field, which is more humanitarian oriented and the future graduate is expected to have regular contact with people. At the same time, the field of marketing communications places greater emphasis on the use of foreign languages, and as mentioned in the article above, extroverts may be better placed to learn foreign languages and at the same time have an advantage over spoken language (Zafar, Khan and Meenakshi, 2017) which can be considered as appropriate traits among marketing communication students. Furthermore, extroverts in teamwork can more effectively apply their communication skills and communicate in a more confrontational style (Roslan et al., 2017).

4 Conclusion and future work

This article deals with the degree of extroversion and neuroticism among university students in the field of marketing communication, which assume communication skills, language skills, but also the ability to work in a team and the ability to sociability. The data showed that the proportion of extroverts is higher than in the comparison studies and suggests that students (respondents) could have the necessary prerequisites for the given study and professional orientation.

In relation to the possible extension of the survey in the follow-up research, it is possible to propose to link the type of personality with the results achieved in the teaching of foreign students and extend the research to students of other branches.

Literature:

1. Ağıl, U. and GÜDÜKBAY, U., 2018. A group-based approach for gaze behavior of virtual crowds incorporating personalities. *Computer Animation and Virtual Worlds*, vol. 29, no. 5. doi: 10.1002/cav.1806.

2. Alavinia, P., and Hassanlou, A., 2014. On the viable linkages between extroversion/introversion and academic Iranian EFL learners' writing proficiency, *English Language Teaching*, 7(3), 167–175. doi: 10.5539/elt.v7n3p167.
3. Antonenko, I., 2014. Collaboration in a composition classroom: What do introverts have to say? Sacramento: California State University.
4. Bono, J. E., and Vey, M. A., 2007. Personality and emotional performance: Extraversion, neuroticism, and self-monitoring. *Journal of occupational health psychology*, 12(2), 177.
5. Borg, M.O. and Shapiro, S.L., 1996. Personality type and student performance in principles of economics, *The Journal of Economic Education*, Vol. 27 No. 1, pp. 3-25.
6. Cakirpaloglu, P., 2012. *Úvod do psychologie osobnosti*. Praha: Grada, Psyché (Grada). ISBN 9788024740331.
7. Chigerwe, M., Boudreaux, K.A. and Ilkiw, J.E., 2019. Is a veterinary student's performance on multiple-mini interviews affected by personality preferences?, *International Journal of Medical Education*, vol. 10, pp. 16-22. doi: 10.5116/ijme.5c39.c815.
8. Ebeling-Witte, S., Frank, M. L., and Lester, D., 2007. Shyness, Internet use, and personality, *Cyber Psychology & Behavior*, 10(5), 713-716. doi: 10.1089/cpb.2007.9964.
9. Farahi, SMM., Ebrahimabad, MJA., Gorji, A., Bigdeli, I. and Farahi, SMMM., 2019. Cortical brain activities related to neuroticism and extraversion in adolescence, *Neuropsychological Trends*. 39-60. doi: 10.7358/neur-2019-025-mosh.
10. Kelnarová, J. a Matějková E., 2014. *Psychologie: pro studenty zdravotnických oborů*. Praha: Grada, Sestra (Grada). ISBN 9788024736006.
11. Lai, K., Xiong, X., Jiang, X., Sun, M., and He, L., 2019. Who falls for rumor? Influence of personality traits on false rumor belief, *Personality and Individual Differences*, 152, doi: 10.1016/j.paid.2019.109520.
12. Lu, W., Wang, Z., and Zhang, Y. L., 2014. Resilience as a mediator between extraversion, neuroticism, and happiness, PA and NA. *Personality and Individual Differences*. 63, 128– 133. doi: 10.1016/j.paid.2014.01.015.
13. Mark, G., and Ganzach, Y., 2014. Personality and Internet usage: A large-scale representative study of young adults, *Computers in Human Behavior*, 36, 274-281. doi: 10.1016/j.chb.2014.03.060.
14. Meira Jr, C. D. M., Moraes, R., Moura, M., Ávila, L. T. G., Tosini, L., and Magalhães, F. H., 2018. Extraversion/introversion and age-related differences in speed-accuracy tradeoff. *Revista Brasileira de Medicina do Esporte*, 24(3), 225-229. doi: 10.1590/1517.
15. Nakonečný, M., 1997. *Psychologie osobnosti*. Vyd. 2. Praha: Academia, ISBN 8020012893.
16. O'Connor, P. J., Gardiner, E., and Watson, C., 2016. Learning to relax versus learning to ide- ate: Relaxation-focused creativity training benefits introverts more than extraverts, *Thinking Skills and Creativity*, 21, 97–108. doi: 10.1016/j.tsc.2016.05.008.
17. Oseland, N. and Hodsman, P., 2018. A psychoacoustical approach to resolving office noise distraction, *Journal of Corporate Real Estate*, vol. 20, no. 4, pp. 260-280. doi: 10.1108/JCRE-08-2017-0021.
18. Qanwal, S., and Ghani, M., 2019. Relationship Between Introversion/Extroversion Personality Trait and Proficiency in ESL Writing Skills, *International Journal of English Linguistics*, 9(4). doi: 10.5539/ijel.v9n4p107.
19. Oshio, A., Taku, K., Hirano, M., and Saeed, G., 2018. Resilience and Big Five personality traits: A meta-analysis, *Personality and Individual Differences*, 127, 54-60. doi: 10.1016/j.paid.2018.01.048.
20. Rees, C. S., Breen, L. J., Cusack, L., and Hegney, D., 2015. Understanding individual resilience in the workplace: the international collaboration of workforce resilience model. *Frontiers in psychology*, 6, 73. doi: 10.3389/fpsyg.2015.00073.
21. Roslan, N. S., Izhar, L. I., Faye, I., Saad, M. N. M., Sivapalan, S., and Rahman, M. A., 2017. Review of EEG and ERP studies of extraversion personality for baseline and cognitive tasks. *Personality and Individual Differences*, 119, 323-332. doi: 10.1016/j.paid.2017.07.040.

22. Roslan, N. S., Izhar, L. I., Faye, I., Amin, H. U., Saad, M. N. M., Sivapalan, S., and Rahman, M. A., 2019. Neural correlates of eye contact in face-to-face verbal interaction: An EEG-based study of the extraversion personality trait, *PLoS one*, 14(7). doi: 10.1371/journal.pone.0219839.
23. Ross, C., Orr, E. S., Sisic, M., Arseneault, J., Simmering, M., and Orr, R., 2009. Personality and motivations associated with Facebook use, *Computers in Human Behavior*, 25, 578–586. doi: 10.1016/j.chb.2008.12.024.
24. Ryan, T., and Xenos, S., 2011. Who uses Facebook? An investigation into the relationship of the Big Five, shyness, narcissism, loneliness, and Facebook usage, *Computers in Human Behavior*, 27, 1658–1664. doi: 10.1016/j.chb.2011.02.004.
25. Settineri, S., Frisone, F., Alibrandi, A., Pino, G., Lupo, N. J., and Merlo, E. M., 2018. Psychological Types and Learning Styles in Medical Education, *Mediterranean Journal of Clinical Psychology*, 6(3). doi: 10.6092/2282-1619/2018.6.2005.
26. Smith, K. and Lovgren, R., 2018. Empirical evidence of deep learning in learning communities, *Journal of Applied Research in Higher Education*, vol. 10, no. 3, pp. 311-321. doi: 10.1108/JARHE-11-2017-0141.
27. Srivastava, S., Angelo, K. M., and Vallereux, S. R., 2008. Extraversion and positive affect: A day reconstruction study of person–environment transactions, *Journal of Research in Personality*, 42(6), 1613–1618. doi: 10.1016/j.jrp.2008.05.002.
28. Yin Q., Wu L., Yu X. and Liu W., 2019. Neuroticism Predicts a Long-Term PTSD After Earthquake Trauma: The Moderating Effects of Personality, *Front. Psychiatry* 10:657. doi: 10.3389/fpsy.2019.00657.
29. Zafar, S., Khan, Z. A., and Meenakshi, K., 2017. Extraversion-Introversion Tendencies and their Relationship with ESL Proficiency: A Study of Chinese Students in Vellore, India. *Pertanika Journal of Social Sciences & Humanities*, 25(2).
30. Zhao, G., Ge, Y., Shen, B., Wei, X. and Wang, H., 2018. Emotion Analysis for Personality Inference from EEG Signals, *IEEE Transactions on Affective Computing*, vol. 9, no. 3, pp. 362-371. doi: 10.1109/TAFFC.2017.2786207.

Primary Paper Section: A

Secondary Paper Section: AN

SLOVAK ADOLESCENTS' VIEW OF THE PERSONS SERVING AN ALTERNATIVE SENTENCE

^aBEÁTA BALOGOVÁ, ^bMIRIAMA ŠARIŠSKÁ, ^cMARTIN HAMADEJ

*Institute of Educology and Social Work, Faculty of Arts,
University of Prešov, Ul. 17. novembra No. 1, 080 01 Prešov,
Slovakia*

Email:^a*beata.balogova@unipo.sk,*
^b*miriama.sarisska1@gmail.com,* ^c*martin.hamadej@gmail.com*

This paper is an outcome of the project Gapu 12/2019 Slovak adolescents' view of the persons serving an alternative sentence.

Abstract: OBJECTIVES. The authors examine the current state of adolescent university students' awareness of restorative justice in Slovakia, while focusing on the attitudes towards persons serving an alternative sentence (other than a custodial sentence). BACKGROUND. Presented research has background in theoretical concept of forensic social work which. Forensic social work generally focuses on the dimension of problem behavior, which in Slovak conditions falls within the competence of the Department of Social and Legal Protection of Children and Social Guardianship. Also this area of social work concentrates on the behavior of the social work clients in the context of delinquency to criminal activities. The present paper attempts to explicate the factors, including changeable and risky ones, affecting the attitudes of adolescent university students (from the fields of humanities and technical sciences) towards a shift from retributive to restorative justice by means of alternative non-custodial sentencing. METHODS. In present research, original questionnaire (consisting of 26 questions) was used in order to explore the students' attitudes to restorative justice and persons serving an alternative sentence. RESULTS. The findings of the study have revealed that social work students are more sensitive to restorative justice and alternative sentence. Furthermore, the present research has shown that attitudes can be changed through the level of knowledge and awareness.

Keywords: restorative justice, retributive justice, a victim, an offender, a sentence.

1 Introduction

The starting point for analyzing personal and social factors that affect the young generation's expectations and actual possibilities regarding their attitude and value formation is the theoretical reflection of students' attitudes to restorative justice and to persons serving an alternative sentence. The issue has been dealt with within forensic social work, which, as foreign and Slovak authors (Green, Thorpe, Traupmann, 2005; Barker and Branson, 2000; Balogová, 2016, 2017; Levická, 2017; Maschi and Killian, 2009, 2011; Munson, 2011; Roberts and Springer, 2007; Rome, 2011; Sinclair, 2002; Šarišská and Balogová, 2017, 2019) and the National Organization of Forensic Social Work argue, is a theoretical and practical framework addressing the issues of crime, justice, advocacy, etc. "Foreign historically built forensic practice in the social field focuses predominantly on the penitentiary issues (although the NOFSW states also other areas of interest) and on the client's problems related to it. At present, the areas and focuses of forensic social workers' activities are being defined and delineated, as this sphere of social work is being rebuilt and the interest in it is awakened" (Šarišská and Balogová, 2019, pp. 22-23; the authors' translation). Forensic social work has been primarily developed in Anglo-Saxon areas, while in Slovakia it is understood "as an area dealing with the entire spectrum of client behavior problems – from the first conduct disorders in social-legal protection and social guardianship, through the unacceptable behavior of juveniles referred to as misdemeanors and criminal offences, the impaired behavior of mentally disabled persons (as clients of clinical social work), to the behavior of persons facing a trial, sentenced persons and persons after serving their sentence, not forgetting the entire circle of people involved in the forensic social work client community" (Balogová, 2017, p. 82; the authors' translation).

2 Brief Literature Review

In the present context, we assume that restorative justice presents a significant humanist shift in the judiciary. Sotolář, Púry and Šámal (2000, p. 5; the authors' translation) argues that "the concept of restorative justice is a concept of treatment of offenders, different from the classical "retributive" sentence judiciary, based on the view that criminal justice is not an adequate response of society to the growth of crime, and does

not lead to the protection of individuals and society." This argument is also supported by Sotolář, Púry and Šámal (2000), who believe that the establishment of restorative justice is necessary because "traditional" criminal policy has already exhausted its possibilities and is unable to prevent crime growth or address the growing criminal justice problems, such as enormous burdens on courts, low efficiency of sentencing, and lack of protection for victims. The restorative approach to the resolution of the conflict with criminal law does not suggest that classical sentencing procedures and sanctions be rejected; rather, it represents their complementation, widened choice of response to crime, and the introduction of the possibility for a personalized approach to the offender. Consequently, it positively affects the effectiveness of criminal sanctions.

The authors further argue that "retributive justice or punishing justice is an approach that defines a criminal act as a conflict between the offender and the state. In this case, the state substitutes for the victim and applies sanctions on behalf of the victim, without the victim having to intervene in the criminal procedure concerned. The criminal procedure primarily focuses on the committed criminal act. Criminal liability of the offender is understood only formally and the aim is to punish the offender. The prevention of recurrence is ensured by causing harm to the offender. Restorative justice draws on the assumption that a crime is a conflict between two or more parties. It is a conflict between their value systems on the background of the normative systems of society" (Sotolář, Púry and Šámal 2000, s. 3-9). Therefore, they can only be effectively dealt with under the condition that all parties concerned are actively involved. It takes into account the actual personal responsibility of the offender for the unlawful act. A criminal act is perceived not only from a legal point of view, but from a whole complex of psychological, ethical, moral, social and economic aspects.

Drawing on the literature review and on the reflection of the available resources, it can be stated that a very important part of the sentencing itself is directing attention to the offender and the victim. Parolees, offenders released from their custodial sentence, or persons serving an alternative sentence have a variety of needs. They are not self-sufficient in fulfilling these needs, in particular the following ones: access to health care, including the treatment of addiction or other mental disorders; coping with social stigmatization; financial literacy education; financial stability assistance, including the assistance in overcoming social barriers during job search; retraining; assisting in establishing or strengthening healthy relationships (family, friends, predominantly relationship with children); assistance in providing housing; clear feedback from people around them on their expectations and needs, and their support in fulfilling those needs; people's willingness to support the offender in changing their value orientation, lifestyle, and in reintegration processes; assistance in developing personal and social skills, such as problem solving, leisure management; an opportunity to understand the victim's needs, etc. It is still important to emphasize that, in order to successfully reintegrate the offender into everyday life, assisting professionals involved in the reintegration and readaptation of offenders, a wider and closer family, colleagues at work (former or future), neighbors, friends, the community and/or whole society play an important role in this regard.

In the present research, we have primarily focused on identifying and analyzing university students' attitudes to custodial sentence and its alternatives that are part of restorative justice. We believe that restorative justice is a specific means of redressing the offender, while not contradicting the purpose of the sentence. Although its place in the society is invaluable, it is not discussed very much, and the public often does not have extensive information on the issue under question. We have decided to verify this statement; the subjects of the research were university technical sciences students who despite the absence of this type of training, consider the questions of alternative sentence up-to-

date. These students differ from the university humanities students in the depth of their awareness of the issue, and thus in the degree of positive attitude towards the offenders.

3 Purpose

Research on students' attitudes to restorative justice and to persons serving an alternative sentence.

The aim of the present research was to explore the humanities and the technical sciences students' attitudes to restorative justice and alternative sentencing (the former of the Faculty of Arts, University of Prešov; the latter of the Technical University of Košice). In particular, we were interested in the following? What are the attitudes of students, future professionals, to restorative justice – a positive substitute for retributive justice? What are the attitudes of students, future professionals, to persons serving an alternative sentence who are more likely to develop a positive change of behavior?

Partial research objectives:

1. The aim of the research was to find out whether the humanities students are more knowledgeable about the effectiveness of restorative justice than the technical sciences students.

2. The aim of the research was to find out whether the humanities students do manifest a more positive attitude to persons serving an alternative sentence than the technical sciences students.

3. The aim of the research was to find out whether the humanities students would be more inclined to support persons serving an alternative sentence than the technical sciences students if they had decision-making power.

4. The aim of the research was to find out if the students who know a person serving an alternative sentence do manifest a more positive attitude to them than the students who do not know one.

5. The aim of the research was to find out if more humanities students do regard the institution of probation trustworthy than the technical sciences students.

4 Research methodology

In the present research, we used an original questionnaire exploring the students' attitudes to restorative justice and persons serving an alternative sentence. The questionnaire consisted of 26 questions, three of which were closed questions and 23 questions used scales capturing the depth of the experienced reality. The objective of the questionnaire was to confirm or to refute the hypotheses and to achieve the research goal. Choosing individual alternatives within attitudes enabled us to determine the current state of affairs as well as the intensity of the attitude. By using pairwise comparison techniques based on the number of options, it was possible to identify the degree of the attitudes, thereby ascertaining the existence of attitudes (Švec et al. 1998), and consequently utilizing the obtained result in deliberately affecting the students of both humanities and technical sciences.

When analyzing the data, a two-step sorting was used in the SPSS 16.00 statistical program; the results were processed into contingency tables. The two-stage sorting was used for a more detailed statistical analysis of the data in order to validate the research aims. When testing the hypotheses, the results were processed in contingency or association tables, through which the investigated corresponding variables were compared; one variable always acted as an independent one – an explanatory variable, and the other one as a dependent variable – the variable to be explained. We investigated how the analyzed features were represented in both variables. The selected significance level was 0.05. When validating our hypotheses, we tested the bilateral statistical hypotheses because the bilateral hypothesis accounted for the fact that the investigated feature (in the dependent variable) may be more noticeable or less noticeable in the

variable under comparison than in the reference variable (independent variables). In order to adopt an alternative hypothesis or not to refute the null hypothesis, we compared the probability of calculated value Pearson χ^2 – square at the set significance level of 0.05. If the probability $p > 0.05$ was calculated, we did not refute the null hypothesis, and, subsequently, we adopted the statistical hypothesis.

5 The research sample

The research sample was obtained by deliberate quota selection and it included 80 university students. Out of those, 40 were humanities students (social work students from the Faculty of Arts, University of Prešov) and 40 were students of technical sciences (students of the Technical University of Košice, the external campus in Prešov). It was a deliberate selection because we wanted to verify the differences in the attitudes based on the students' knowledge and training. The questionnaire was personally administered to the students and the results were processed anonymously.

Tab. 1: The characteristics of research sample – study program

University	Gender		Total of
	Male	Female	
Humanities quantity	18	22	40
%	45.00%	55.00%	100.00%
Technical studies	20	20	40
%	50.00%	50.00%	100.00%
Total quantity	38	42	80
%	47.50%	52.50%	100.00%

Source: Compiled by the authors

The select cohort comprised eighty 2nd year Magister degree respondents, out of which thirty-eight were males (47.50%) and forty-two were females (52.50%) aged 22 – 40.

6 Results

In order to verify the first partial research aim, we used five questions in which we observed the following values: Pearson χ^2 – square = 4.94, $p = 0.047$; Pearson χ^2 – square = 6.27, $p = 0.023$; Pearson χ^2 – square = 3.164, $p = 0.126$; Pearson χ^2 – square = 33.88, $p = 0.000$ and Pearson χ^2 – square = 39.3 $p = 0.000$. Thus, it can be stated that the response values are significant with regard to the study program in which the students are enrolled.

1. partial research aim stating that, due to their vocational training, the humanities students are more knowledgeable about alternative sentencing than technical sciences students, was confirmed.

In order to verify the second partial research aim, we used five scaled questions for which we observed the following values: Pearson χ^2 – square = 12.3, $p = 0.001$; Pearson χ^2 – square = 39.3, $p = 0.000$; Pearson χ^2 – square = 34.14, $p = 0.000$; Pearson χ^2 – square = 17.28, $p = 0.000$; Pearson χ^2 – square = 23.7, $p = 0.000$ and Pearson χ^2 – square = 4.6, $p = 0.030$.

2. partial research aim stating that, due to their vocational training, the humanities students are more knowledgeable about probation and probation programs than technical sciences students, was confirmed.

When verifying the third partial research aim, we observed the following values: Pearson χ^2 – square = 7.4, $p = 0.019$. We found that there is a difference in awareness between the humanities students and technical sciences students. OR (Odds ratio) having the value of 8.3, indicated that the probability of higher awareness in the humanities students was 8.3 times higher than in the technical sciences students. 3. partial research aim stating that the humanities students, with regard to their training, are more knowledgeable about the correctional and educational effect of alternative sentencing was thus confirmed.

Six questions were used in order to verify the fourth partial research aim. The difference in students' attitudes towards a

person serving an alternative sentence, depending on whether they know such a person, was not confirmed at the selected level of significance. In other words, it is not possible to claim that students who know a person serving an alternative sentence will have a more positive attitude to them than the students who do not know such a person.

In the fifth partial research aim, we assumed that more humanities students will consider the institution of probation trustworthy than technical sciences students. The likelihood of considering the institution of probation trustworthy is 5.7 times greater for humanities students than for technical sciences students. Also this partial aim, with the values of Pearson χ^2 - quadrate = 6.154, $p = 0.019$, was confirmed.

7 Discussion

In the conducted research, we examined students' attitudes to restorative justice and to sentencing alternatives. Several authors (Lulei, 2011; Canton, 2011; Roberts, 2004) have dealt with a similar issue. Lulei (2011) conducted research on the implementation of social work in criminal justice. In his research findings, he argues that the preferred qualification for providing probation or mediation services is a university degree in social work, as the practice of probation and mediation requires knowledge from a number of scholarly disciplines. He states that a degree in the field of social work facilitates the necessary education and training for pursuing social work careers in the probation and mediation fields. Our research has also confirmed that humanities students, in comparison with technical sciences students, are more informed about sentencing alternatives, probation, probation programs, mediation, and the remedial and educational effect of sentencing alternatives. The research findings show that the former, in comparison with the latter, also tend to have a more favorable feeling towards people serving an alternative sentence.

Another finding by Lulei (2011), was that the general public was less informed about alternative sentencing than those working in the area were; therefore, he holds a view that sentences should be imposed upon criminals more strictly. The present research shows that undergraduate training affects the degree of how strict students would be in imposing a sentence in case they had decision-making power. We found out that humanities students, in contrast to technical sciences students, would prefer an alternative sentence over a prison sentence for committing petty crimes if they had decision-making power.

Similarly, Canton (2011) states that the public opinion on the degree of severity in imposing sentences relates to knowing the person serving an alternative sentence and to knowing the circumstances of the criminal case. He claims that the greater the public's insight into the details of the individual case is, the less punitive they become. The present research has also focused on determining whether knowing a person serving an alternative sentence affects the polarity of students' attitudes. The change in students' attitudes to a person serving an alternative sentence depending on whether they know him/her has not been confirmed. However, in the research, we did not focus on how much students knew about the circumstances of the case. We believe that future research will also include the insight in the circumstances of the case.

The Canadian Criminology Professor Roberts (2004), emphasizes the importance of public trust in the functioning of the criminal system, as well as in probation. A number of crimes is brought to the attention of the police as a result of information provided by the victim, the witness, or the wider public. If the public has low confidence in the police, this information comes in a lesser amount. The research findings show that a certain degree of confidence in the institution of probation can be seen in both humanities students and technical sciences students. However, based on the findings, the former express more trust in its credibility than the latter. It can therefore be assumed that this finding is important in terms of opinion-making, which is often influenced by professionals.

Based on to-date research and on its comparison with our findings, certain procedures can be predicted; namely, it is necessary:

- in the framework of preventive and awareness-raising activities, to ensure that public awareness is enhanced in terms of the needs of the offender, the victim, and the community in which the crime occurred; in terms of restorative justice, sentencing alternatives, and the activities of probation and mediation workers;
- in undergraduate training, to address the issue of students' attitudes towards restorative justice and towards persons serving an alternative sentence;
- within mass media communication, to support activities aimed at promoting restorative justice as a substitute of retributive justice, its advantages from humanistic or economic points of view;
- within particular penitentiary or post-penitentiary care, to improve activities aimed at mitigating the stigma, and to support the offender's or victim's reintegration into the society.

Regarding the present results, we consider it important to mention the educational dimension, which offers space for the implementation of the mentioned procedures. The university degree in social work provides for specialized courses focusing on the presently examined forensic social work issues, thus on bringing the knowledge closer to the students and increasing their awareness of the focal issue. In technical sciences students, this could be done in the form of lectures delivered by professionals, or through conferences or workshops.

8 Conclusion

The present research points to the necessity to identify factors and agents, including changeable or risky ones, that affect the state of restorative justice in Slovakia. The basic theoretical and legal definition of sentencing, its function and principles in its imposition is essential for a broader application framework of retributive and restorative justice. The comparing of retributive justice with restorative justice creates a prerequisite for the positive impact of restorative justice on the state, offenders, and victims. Being aware of sentencing alternatives can lead to a change in an attitude, and the individual (whether a layman or a punisher) has available more options, other than imprisonment, when it comes to protecting the society, repressing someone, preventing crime, while at the same time complying with the principles of sentencing.

We have searched for answers to questions concerning the offender and the victim, yet not forgetting the community to which the victim and the offender belong. We have pointed out the importance of choosing appropriate methods and techniques, but also the importance of social workers' proper attitudes to offenders and victims in terms of their successful reintegration into the society. We have researched the social work students' sensitivity to restorative justice and to persons serving an alternative sentence, and compared it to technical sciences students. We have found out that social work students are more sensitive to restorative justice and to person serving an alternative sentence than technical sciences students. At the basis of this intentional action is the finding that it is possible to change attitudes through facilitating knowledge and enhancing the awareness.

Literature:

1. Act no. 300/2005 Coll. Criminal Code as amended.
2. Act no. 301/2005 Coll. Code of Criminal Procedure as amended.
3. Act no. 550/2003 Coll. on Probation and Mediation Officers as amended.
4. Balogová, B.: Challenges and Limits in Forensic Social Work in Slovakia. In: Labor Socialis: Social Work in Changing Europe in the 21st Century: Proceedings of Scientific Conference with

International Participation, held at Constantine the Philosopher University in Nitra on September 21, 2016. Nitra: Faculty of Social Sciences and Health, 2016. pp. 12-14. ISBN 978-80-558-1134-5.

5. Balogová, B.: Spreads of Forensic Social Work in Theory and Practice. In: Levecká, K., Patayi, P., eds. *Res socialis: social work in changing Europe social work in changing Europe*. Trnava: Department of Social Work, Faculty of Health and Social Work, Trnava University in Trnava, 2017. pp. 81-86. ISBN 978-80-568-0060-7.

6. Barker, L. R., Branson, D. M.: *Forensic social work: Legal aspects of professional practice*. Binghamton, NY: Haworth Press, 2000. 280 p. ISBN 978-07-8900-868-8.

7. Canton, R.: Contemporary Probation in Europe - Some Reflections. In: *Euro Vista - Probation and Community Justice*. 1(1). 2011. pp. 2-9. ISSN 2042-7026.

8. Green, G., Thorpe, J., Traupmann, M.: The sprawling thicket: Knowledge and specialisation in forensic social work. In: *Australian Social Work*. 58 (2). 2005. pp. 142-153. ISSN 0312-407X.

9. Levecká, J.: Forensic Social Work - a New Field of Social Work? In: Levecká, K., Patayi, P., eds. *Res socialis: social work in changing Europe social work in changing Europe*. Trnava: Department of Social Work, Faculty of Health and Social Work, Trnava University, Trnava, 2017. pp. 73-80. ISBN 978-80-568-0060-7.

10. Lulei, M.: Social work in criminal justice and probation. Nitra: FZVZ UKF, 2011. p. 136. ISBN 978-80-8094-945-7.

11. Maschi, T., Killian, M. L.: Defining Collaborative Forensic Social Work with Diverse Populations. In: Maschi, T., Bradley, C. K., Ward, K., eds. *Forensic Social Work. Psychosocial and Legal Issues in Diverse Practice Settings*. New York: Springer Publishing Company, 2009. pp. 3-9. ISBN 978-0826-1185-85.

12. Maschi, T., Killian, M. L.: The Evolution of Forensic Social Work in the United States: Implications for 21st Century Practice. In: *Journal of Forensic Social Work*. 1 (1). 2011. pp. 8-36. ISSN 1936-9298.

13. Munson, C.: Forensic Social Work Practice Standards: Definition and Specification. In: *Journal of Forensic Social Work*. 1 (1). 2011. pp. 37-60. ISSN 1936-9298.

14. Roberts, A. R., Springer, D. W.: *Social work in juvenile and criminal justice settings*. Third Edition. Springfield, IL: Charles C. Thomas, 2007. p. 462. ISBN 0-398-07676-6.

15. Roberts, V.: *Public Confidence in Criminal Justice: A Review of Recent Trends 2004-05*. Ottawa: Department of Criminology, University of Ottawa, 2004. ISBN 0-6623-8625-6.

16. Rome, S. H.: Forensic social work. In: Mizrahi, T., Davis, L. E., eds. *Encyclopedia of social work*. 20th edition: D - I. NY: Oxford University Press, 2011. pp. 221-223. ISBN 978-0-19-531036-8.

17. Sinclair, S.: Sam Peckinpah's forensic social work blues: will the tin star keep shining? In: *The Journal of Forensic Psychiatry*. 13 (3). 2002. pp. 449-501. ISSN 0958-5184.

18. Sotolář, A., Púry, F., Šámal, P.: *Alternative solutions to criminal cases in practice*. Praha: H. C. Beck, 2000. ISBN 80-7179-350-7.

19. Šarišská, M., Balogová, B.: Possibilities of forensic social work in Anglo-Saxo and Slovak environment. In: Kardis K, Kardis M eds. *The world of cultures and traditions of the Slovak-Polish borderland. Increasing the competences of university educators in the field of intercultural education*. Prešov: Greek-Catholic Theological Faculty, 2017. pp. 339-373. ISBN 978-80-555-1932-6.

20. Šarišská, M., Balogová, B.: *Forensic social work - theoretical and practical background*. Prešov: Prešov University in Prešov, 2019. p. 99. ISBN 978-80-555-2189-3.

21. Švec, Š. et al.: *Methodology of education sciences*. Bratislava: IRIS, 1998. p. 300. ISBN 80-88778-73-5.

Primary Paper Section: A

Secondary Paper Section: AG, AO

SELF-REGULATION OF LEARNING IN THE NATURAL SCIENCE OF FUTURE TEACHERS

^aEVA SEVERINI, ^bMÁRIA KOŽUCHOVÁ, ^cMARTIN KURUC, ^dDUŠAN KOSTRUB

*Faculty of Education of Comenius University in Bratislava
Račianska 59, 813 34 Bratislava, Slovakia
e-mail: ^aseverini@fedu.uniba.sk, ^bkozuchova@fedu.uniba.sk,
^ckuruc@fedu.uniba.sk, ^dkostrub@fedu.uniba.sk.*

Processed within the project VEGA 1/0443/18 Analysis of self-regulatory learning styles of students in the field of Preschool and Elementary Pedagogy.

Abstract: In this article, we present the results and interpretations of our research, the aim of which was to create a certain picture of how the preparation is set, but also the motivation of students in the programs of Preschool and Elementary Pedagogy for science subjects. We focused on the area of self-regulation of learning and motivation for science education for future teachers. We start from the methodological approach rooted in the theory of self-determination. We consider the most important finding to be the positive motivation of students for science. Within science subjects we see an opportunity to use the student's portfolio as a means of his trajectory of development and self-regulation of learning.

Keywords: future teachers, motivation, natural sciences, self-regulation of learning.

1 Introduction

Learning about nature has been an essential part of education for many years. The aim of science education at all types and levels of schools is to develop science literacy. We identify with Roberts (2007) and Svobodová (2013) who include in science literacy the knowledge and skills that an individual needs to understand the natural influences on his life, to be able to explain the basic natural phenomena in his environment, to know terms, laws and methods of natural sciences, to be able to work with graphs, tables, diagrams, maps and finally to be able to form his own judgment about the credibility of knowledge. It is a lifelong process, not just learning at school. In this context, Janoušková, Novák and Maršák (2008, p. 129) state that "the issue of science education is currently given unusually high attention in the field of pedagogical research and practical educational policy in the states of the European Union." However, the teaching of science subjects in primary schools has been going through a stage of some search for identity for some time (Škoda, 2005). An important moment is the active and scholastic character of teaching, which allows students to gain a deeper understanding of the laws of natural processes. To create competencies in students that develop the ability, based on the observation of natural phenomena, objects and experimental activities, can evaluate and create theories (Příšová et al., 2011). Science education is currently an integral part of a comprehensive teaching process. This education begins in children before entering primary school. They get acquainted with their immediate environment, surroundings, nature, they observe, create ideas. They form a relationship with people and the environment which they live in. Children's attention is focused on exploring current ideas about objects, phenomena and situations. Part of the development of science literacy is the development of specific skills that give the child tools to orient himself in new cognitive situations, help him systematize experience and create meaningful knowledge about the functioning of the world (Uhrinová, 2019).

In the field of Preschool and Elementary Pedagogy, it is primarily a matter of preparing students for the profession of pre-primary and primary education teachers. Study programs in the field of Preschool and Elementary Pedagogy in Slovakia are implemented at the pedagogical faculties of seven Slovak universities in Bratislava, Trnava, Nitra, Komárno, Ružomberok, Banská Bystrica and Prešov. Within the department, bachelor's study programs are mostly implemented for the preparation of kindergarten teachers and educators of children's school clubs, which are followed by the master's study programs Teaching for Primary Education. (Rochovská, 2012).

The university training of future teachers of kindergartens and primary degree of elementary schools with a focus on science

education contains three components: vocational; pedagogical-psychological and didactic. Graduates are expected to have a thorough understanding of professional issues, the ability to make knowledge available to target groups, organize, monitor and evaluate educational activities. Although faculties strive to incorporate current scientific knowledge and current teaching approaches into the training of future teachers, to follow constant developments in science, pedagogy, psychology and to reflect on changes in the education system, the teaching profession requires constant supplementation and expansion of knowledge and skills. The professional personality of a teacher is the result of his own efforts to become a teacher, but at the same time it is formed already during undergraduate training, in which the future teacher begins to form his intuitive concept of teaching and also motivation for the teaching profession. It is therefore necessary to pay more attention to the area of motivation. At present, the role of the university teacher is fundamentally changing, which should mainly support the self-regulation of learning, but also stimulate students to acquire the meanings of technical terms and understand the context in science education.

Scientists, as well as practitioners, are currently wondering how a particular way of thinking creates space for a specific form of freedom and independence based on student-teacher relationships. The personal responsibility and self-sufficiency of the individual (student and teacher) is emphasized. On the other hand, the newly conceived freedoms oblige the subject (student and teacher) to inform about the various possibilities in order to make the best possible investment in one's own future and the future of society on the basis of active social integration. Social-constructive exchanges and interactions among students, joint problem solving and partnership - positive teacher interventions support the student's self-regulation of learning. This supports a quality learning process and the learning of others (better quality of communication between teachers and students and between them, gaining lasting and valid knowledge for society, as well as intellectual independence), etc. The process of self-regulatory learning is not based on "memory training", but on developing the ability to distinguish and think, more precisely the ability to ask questions and solve learning problems. Self-regulatory learning is based on taking an active attitude of the student, which is maintained by a didactically thought-out, deliberate strategy of the teacher. This strategy evokes the process of socio-constitution of knowledge and the emergence of the student's competencies regarding the goals, topic, content / curriculum, based on the application of transformative and supportive components.

In order for the goals of self-regulatory learning to be achieved, it is necessary for students to have a learning strategy at their disposal and the teacher to have a strategy for his teaching in order to meet his goals. Conditions for the construction, development and application of a didactic strategy that supports the self-regulation of learning, an emerging conglomerate of competencies and the acquired complex of knowledge of students in the field of Preschool and Elementary Pedagogy in Science Education represents:

- Consciously reflect the importance of the problems that will be presented to students, but especially reflect on the possible solutions in the internal dialogue of students.
- Situate the learning context, something that may be innovative on the one hand, but may not be on the other.
- Consider the creativity of the teacher as a constitutive element of maintaining a focus on the conscious development of students.
- Construct an appropriate learning environment based on adequate didactic situations, sequences, but in advance and in time it is necessary to visualize together with students learning scenarios in their design.

Postmodern thinking knows different forms of life, different aspects of reality. There is no longer only one and only absolute truth, which is predetermined, and therefore it is important that

the individual develops his knowledge on the basis of independent action in collaboration with other subjects in a particular society. Postmodern understanding of reality also considers feelings and intuition as important characteristics of the individual, with which the individual acquires real knowledge / knowledge about the real world (Gojkov, 2006). Emphasis is placed on the autonomy of the individual and on his critical thinking in order to know and be able to survive in everyday life. Brain is not only able to know, but it is objectified (it is the object of discourses) in science and philosophy, it becomes the highest instance in solving all problems of social and individual life of an individual in a socio-cultural context.

The paradigm of self-regulation of learning is to achieve such a status when the individual knows and is able to control himself, takes responsibility for his own development, becomes a self-regulatory individual. In the current discourse, self-regulation of learning represents the interaction of personal, behavioral and environmental triadic processes, it is mainly development through social representations, and it is understood as the disposition, quality (autonomy, competence and collaboration) of an individual's personality, being relatively independent, free to think, decide, to act and operate in the everyday socio-cultural environment (Bandura, 1977; Paterson, 1996; Ryan a Deci, 2017).

Humankind divided the actions and influence of the individual according to the activities carried out by him and their results, as well as generalizations in individual areas into various systems that form one whole - culture. By its nature, the field of science belongs primarily to the socio-cultural system of science and it uses means of communication for its existence and development, because people communicate about science and its achieved results and use various means. Scientists who constantly know the physical (environment surrounding us - nature, people, things, objects, etc.) and physical reality (phenomena, processes, etc.) provide newer, more elaborate theories and explain them. They express these theories in their own created scientific language (terminology) as well as in their own formal thought system. Science can be defined as an organized systematic (group and / or individual) initiative that integrates knowledge about the world and converts this knowledge into verifiable laws and principles, which can again lead to the emergence of new theories. Getting to know the physical and natural environment is part of one of the educational areas that create the school curriculum for kindergartens and primary schools. This educational area is called Human and Nature. The basic purpose of education in this area is to present the knowledge and interpretations of knowledge of the science so that learners understand science and they are able to apply them in their daily lives and further study (Jančaříková, 2019).

From the point of view of the educational goals of science education: to understand scientific and environmental texts; present scientific or environmental problems and be able to solve them; acquire vocabulary at a professional level; be able to independently discuss scientific or environmental topics; to develop thought procedures and ways of acting that apply scientific thinking in the natural sciences, it is necessary to develop students' pre-school and elementary pedagogy (future teachers) self-awareness, self-knowledge, conscience, self-criticism and will as a prerequisite for supporting self-regulation of learning and teaching of others students.

Strategies and methods to support self-regulation of learning in science education of children in kindergartens and primary school pupils Jančaříková (2019) states the following:

- Research teaching (method of learning by discovery).
- Problem-based teaching (problem-solving method).
- Project teaching (project method - project solution).
- Experiential teaching (experiential learning method).
- Cooperative and collaborative teaching (participation in the learning process).

2 Methodology

Based on information available in professional literature and websites of pedagogical faculties, as well as analysis of information sheets of science-oriented subjects, we briefly compared the degree of representation of science subjects in the content of education study programs Preschool and Elementary Pedagogy at three universities, where they primary focus on preparation of students for profession of teachers of pre-primary and primary education at PdF UK in Bratislava, PdF UMB in Banská Bystrica and PdF KU in Ružomberok. The reason for the research set follows from the project VEGA 1/0443/18 Analysis of self-regulatory learning styles of students in the field of Preschool and Elementary Pedagogy. Within the representation and scope of science lessons in bachelor's and master's degree education, there are significant differences in the training of future teachers of kindergartens and primary schools in the field of science education..

The bachelor's program at the Faculty of Education in Bratislava also includes the compulsory elective subject Natural Science Experiments (2C) and the compulsory elective subjects Natural Practice (2C) and Environmental Education (2S) are represented at the master's level. At the Faculty of Education in Banská Bystrica, the subjects are characterized by the fact that they are mostly integrated with technical education. It is not bad, because these objects have many features in common. Within the bachelor's degree, the compulsory elective subject Science Teaching Activities (2S) is represented. Within the master's study, it is a compulsory elective subject Elective Seminar for Didactics of Science and Technology subjects (2S), as well as an elective subject Science, Technology and Social Sciences (excursion). At the Faculty of Education in Ružomberok, a compulsory elective course is the Natural Science Interest Activity (1P + 1S). The master's study includes a compulsory optional subject of Natural Science Practicum (1S).

The results of the analysis of information sheets of science subjects in the field of study Preschool and elementary pedagogy at individual pedagogical faculties indicate that the specific goals of science-oriented subjects are based on the partial goals of the field of study. These goals set the requirements for the knowledge and skills of the student, which should be acquired after completing the subjects. In the information sheets of the mentioned science subjects, in the bachelor's study program, similarly to the master's study program, stated goals focused mainly on the acquisition of professional subject skills (such as theoretical preparation for teaching activities with a scientific focus mainly in the field of living nature). Also, the goals were focused on the acquisition of psychodidactic skills (eg didactically correctly analyze the curriculum). To a lesser extent, the objectives are aimed at developing the ability to plan and organize a specific teaching project with science content. To a very small extent, the goals are aimed at supporting the self-regulation of learning and the development of students' self-reflexive and diagnostic abilities. Exceptionally, there are goals for the acquisition of pedagogical and psychodidactic skills, as well as the ability to evaluate learners in the development of science literacy in pre-primary and primary education.

From the above it can be observed as stated (Rochovská, 2012) that the number of science-oriented subjects in the study programs of the Department of Preschool and Elementary Pedagogy at the pedagogical faculties in Bratislava, Banská Bystrica and Ružomberok is different. Somewhere are two subjects, somewhere are more science-oriented subjects. The education of kindergarten and primary school teachers does not have a uniform concept at individual pedagogical faculties, therefore not only the number of science subjects is different, but also their goals, content and means of teaching.

The aim of the research was to create a certain picture of how the preparation is set, but also the motivation of students of the programs of the Department of Preschool Elementary Pedagogy for science subjects. We carried out the research at three pedagogical faculties, namely in Bratislava, Banská Bystrica and

Ružomberok. We used the theory of self-determination by Richard M. Ryan and Edward L. Deci (Ryan and Deci, 2004), which provided important information about the internal and external factors of self-regulation (prediction, planning, monitoring and self-assessment). Based on the results, we developed a proposal for measures. Within the theory of self-determination by Richard M. Ryan and Edward L. Deci (also), a set of questionnaires was developed for various areas of human activity. Questionnaires assess individual differences in the types of motivation and regulation for a certain area - field of activity. We used the SRQ-Academic questionnaire (Ryan and Connell, 1989), which was standardized in 2017 for the Slovak environment (Kuruc, 2017). For our needs, we modified the questionnaire to record the nature of motivation in relation to science education.

We verified the reliability of the questionnaire in three ways. We implemented the first one by calculating the split-half reliability, which reached the value of 0.687. This value represents acceptable reliability. As the second method, we chose to verify the reliability using Cronbach's alpha, which reached a value of 0.845. This value also represents satisfactory reliability. This coefficient is typical for questionnaires in which the items are scaled (all items in the questionnaire have scales of the same value and length). It is used to assess the internal consistency of the questionnaire item scales. As a third method to verify reliability, we used Scott's homogeneity, which reached 0.647. This value is also acceptable. Based on these implemented processes, we were able to state that the research tool chosen by us reliably and accurately allows to evaluate what self-regulatory style prevails among the respondents.

The research set was compiled on the basis of deliberate selection. Our target group were students of programs in the Department of Preschool and Elementary Pedagogy. The selection criterion was the representation of all three pedagogical faculties, both at the bachelor's and master's level. Respondents at individual faculties were contacted at random. Regarding individual faculties, we perceive the selection as random. 1149 students were involved in the research, of which 467 students from Ružomberok, 444 in Bratislava and 238 in Banská Bystrica. There was a high return of questionnaires at the Faculty of Education in Bratislava and Ružomberok. In the case of the faculty in Ružomberok it is 98% and in the case of the faculty in Bratislava it is 77% return. We consider these two samples to be representative in relation to these faculties. The lowest proportion was the return from the faculty in Banská Bystrica. From the point of view of the overall scope of the sample, we can consider it as representative. Some caution is needed in the external form of study, where there is a significantly low representation of students in relation to the real distribution.

3 Interpretation of research results

We verified whether the collected data have a normal distribution by means of the Kolmogor-Smirnov and Shapiro-Wilk normality test. Based on the results of $D = 0.066$ at $p = 0.006$ and $W = 0.992$ at $p = 0.001$, it can be seen that both tests confirmed that the data do not come from the normal distribution, so we used nonparametric tests to further analyze the differences and relationships.

The descriptive statistics in Table 1 are calculated from the final RAI (Relative Autonomous Index) score. According to this index, the overall orientation of the respondent's motivation and regulation in relation to the specified domain is determined. The subscale scores in some SRQ questionnaires, regardless of their number, can be combined into RAI according to individual subject areas and pedagogical faculties. The Skew and Kurtosis values in each group confirm the results of the normality test. The overall sample was rather kurtosis and sloping to the left. Lower values predominate throughout the file, and most of the RAI values in the file are closer to the average. This is confirmed by the fact that the data do not come from a normal distribution, and therefore we used non-parametric tests to further verify the differences and relationships between the variables.

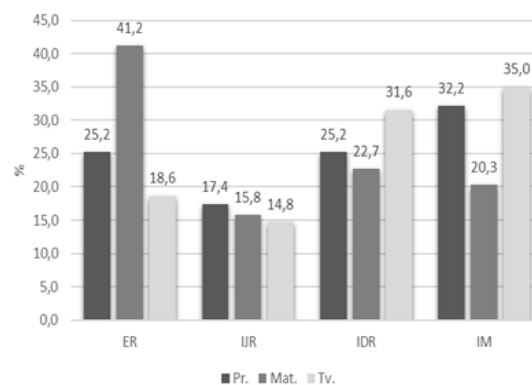
Table 1 Descriptive sample statistics.

	Natural science RK	Natural science BA	Natural science BB
Valid cases	221	167	100
Mean	0,459	-0,150	0,23
Std. Er.	0,168	0,161	0,227
Var.	6,267	4,345	5,164
Std. Dev.	2,503	2,084	2,272
Skew	0,130	0,187	0,225
Kurtosis	0,132	0,563	0,255

The determining value of the final score was the RAI value as defined by Ryan and Connell (1989). This index represents a measure of autonomous motivation / regulation - as a person regulates his learning or is motivated to do it by himself. The final score in the form of RAI for respondents ranges from +2 to -2. Our results show that internally oriented motivation and identified motivation predominate in science subjects when respondents are aware of the meaning and personal value of the subject.

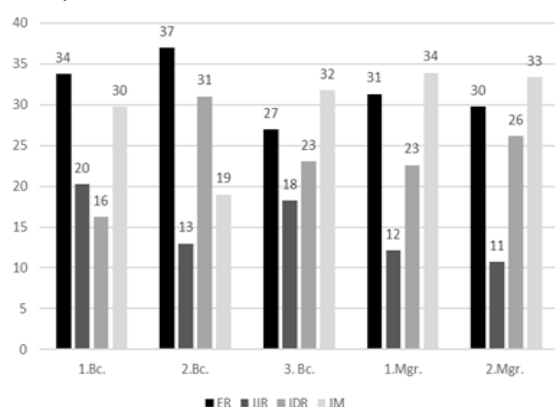
The first research question was: What styles of self-regulation of learning are prevalent among students in individual subjects (with a focus on mathematics, science and technology)? In comparison with mathematical and technical subjects, students showed a reasonable interest in science-oriented subjects (Graph 1). Students saw direct practical use. While in mathematics the external (motivation to learn on the basis of reward and punishment) and introjection (the motivation to learn is motivated on the basis of trying to avoid feelings of guilt and shame or conditional self-esteem) prevailed, in the case of technical education significantly prevailed identified style of regulation (the respondent sees a personal sense of the subject for himself) and internal motivation (the activity is associated with experiencing the joy of the activity). The science area is somewhere between these two areas of education. There is also a significant difference in how these subjects are represented in the study program in terms of scope.

Graph 1 Frequency of occurrence of self-regulatory style according the subject.



Another research question was: What are the differences in internal motivation between undergraduate and graduate students? In the case of natural sciences, internal motivation was statistically most significantly represented. This is followed by relatively equal occurrence of identified and external regulation. The least introjection style of regulation was present (Graph 2).

Graph 2 Frequency of occurrence of regulatory styles by degree of study – natural science.



On the graph above we can see that the value of the average RAI score in the 3rd year rose the sharpest. Remarkable is the more significant decrease in the average RAI score in the last year of master's studies. Testing the differences between the individual years showed that there are no significant differences between them. This fact may be caused by a relatively balanced occurrence of the identified style of regulation, which is an autonomous type of regulation classified as external motivation.

The third research question was: What are the differences between full-time and part-time students? We did not observe statistically significant differences between the individual forms of the study. Remarkably, in the external form of the study, there was a lower incidence of the external regulatory style and a higher incidence of the identified regulatory style. We assume that this difference may be because external students are of a higher age category than full-time students, there is the impact of a certain life experience. Also, the possible impact of the fact that they decided to study more voluntarily (without social pressure, which we perceive at full-time students as more significant due to social expectations). There is also a consideration associated with the financing of self-study for students of external forms of study, as well as greater responsibility for the success of studies.

In the fourth research question, we found out what the differences between the individual faculties are. In the case of subjects focused on science education, the most varied differences in the occurrence of individual regulatory styles between the faculties became apparent. In the case of the faculty in Ružomberok, internal motivation is significantly the most frequently represented (37%). In the case of the faculty in Bratislava, it is external regulation (34%) and in the group from the faculty in Banská Bystrica it was internal motivation (33%). Further testing confirmed that the differences in RAI scores among faculties are significant. More detailed testing showed that the difference in average RAI between the faculty in Ružomberok and Bratislava is significant. The difference between the faculty in Ružomberok and the sample from Banská Bystrica is insignificant. Finally, the difference between the faculty in Bratislava and the sample from Banská Bystrica is significant. Based on these findings, we can state that while at the faculty in Ružomberok and in the sample from Banská Bystrica, autonomy supporting the setting of motivation predominates, the control style of motivation predominates at the faculty in Bratislava. Despite these specifics provided by the analysis of the frequency of occurrence of regulatory styles, further testing between faculties of the average RAI score values showed us that there are no significant differences among the faculties in the field of science education. For better structuring, we relied on the method of SWOT analysis when framing observations and suggestions for research results. We use it as a tool to summarize suggestions, observations and other considerations related to the results of our research.

Table 2 SWOT analysis of results and recommendations of research findings.

STRENGTHS (characteristics that can help to achieve the goal)	WEAKNESSES (characteristics that make it difficult to achieve the goal)
Natural science	Natural science
Significantly higher representation of internal sources of motivation in the regulation of science learning.	Significant representation of external regulation of learning at the beginning of the study and associated more negative (more cautious) attitudes towards science subjects.
Autonomy is dominated by autonomy supporting the setting of the style of motivation to learn during their studies.	Low efficiency of the method of self-regulation of science learning at the beginning of the study.
OPPORTUNITIES (external conditions that may help to achieve the goal)	THREATS (external conditions that may make it difficult to achieve the goal)
Natural science	Natural science
Systemic guidance of students to create their own portfolio as a means of their trajectory of their own learning and development.	Not very positive attitude towards science subjects at the beginning of the study.
Analysis of the influences leading to the regrouping of regulatory styles in the third year of study.	The control style of motivation ranges from 60 to 40% of students throughout the study. In all years, the occurrence of external style prevails over introjection.
Also, an analysis of the causes of such a low incidence of identified regulatory style in all three years of study.	Internal motivation is maintained from the third year to the final year in the range from 33 to 37% and its increase in the third year no longer increases its occurrence.
Support for research-oriented education using elements of social constructivism. Less theory more practice (experiments). Use the interconnection of subjects in the style of Anglo-Saxon "sciences" and not the differentiated model that is typical for our education system (divided of subjects already at the primary level of education into natural science and geography).	The identified regulatory learning style tends to decrease with the higher year of study, still around 15%. It is a regulatory style in which the student has internally values of importance to learn a given subject.

4 Results and discussion

Based on the research investigation, we came to these answers in relation to the research questions:

- The most important research finding was found between the bachelor's and master's degrees. While at the beginning of the study the external style of regulation and controlling motivation prevails among the students, from the third year of the bachelor's and the last two years of the master's degree, the internal motivation to learn science subjects significantly prevails.
- Regarding science education, style of motivation supporting autonomy has been shown to prevail.
- In the field of science education, we found significant differences between the faculty in Bratislava and other faculties. The external style of regulation was statistically significantly more frequent than at other faculties. The identified regulatory style and internal motivation were significantly less frequent at the Faculty of Bratislava than at other faculties. No significant differences were found between the faculties in Banská Bystrica and Ružomberok.

As we can see in Table 2 from the point of view of scientific disciplines to the strengths in the third year of bachelor's study and in the last two years of master's degree we include a higher incidence of internal motivation as well as autonomous learning style, which we understand as requirement of regulation of self-behaviour in meaning of achieving requested science literacy. From the above we propose the creation of autonomy supporting environment in the first two years of the bachelor's degree and its further support in other years of study, as well as developing external motivation (identified regulation, which is a natural part of our environment and active student interaction with his environment) in both degrees at all monitored faculties. As a weakness in science education, at all monitored faculties, we consider a not very positive attitude towards science subjects at the beginning of the study. In order to achieve the goals of self-regulatory learning in science disciplines, it seems important to us that the teacher has a suitable strategy for teaching in order to

meet his goals, and students in turn have their own appropriate learning strategy. Within science, we see an opportunity to use the student's portfolio as a means of his trajectory of development and learning (as a basic idea to bring non-autonomous young people into a status of relative autonomy, which creates space for mutual cooperation in a learning group of students - an opportunity for learning collaboration). In terms of self-regulation of learning and learning on occasion, we also include the role of a teacher as a researcher (a teacher promoting an autonomous style of learning based on an examination of didactic reality, its subjects and components carrying out the reconstruction of professional experience, who seeks to know and recognize what he / she considers important, decisive and essential). The threats also include a not very positive attitude towards science subjects at the beginning of studies at all monitored faculties with a predominance of the external style of learning regulation, especially for full-time undergraduate students at the Faculty of Education, Charles University in Bratislava and the control style of motivation. By taking advantage of the opportunities arising from research on self-regulation of learning, we propose to minimize threats in science education.

Literature:

1. Bandura, A. (1977). *Social learning theory*. Englewood Cliffs, NJ: Prentice Hall.
2. Gojkov, G. (2006). *Didaktika i postmoderna. Metateorijska polazišta didaktike*. 1. izd. Vršac: Viša škola strukovnih studija za obrazovanje vaspitača.
3. Jančaříková, K. (2019). *Didaktické přístupy k přírodovědnému vzdělávání předškolních dětí a mladších žáků*. Praha: Univerzita Karlova, Pedagogická fakulta.
4. Janoušková, S., Novák, J., & Maršák, J. (2008). Trendy ve výuce přírodovědných odborů z evropského pohledu [Trends in the teaching of natural sciences from European perspective]. *Acta Facultatis Paedagogicae Universitatis Tyrnaviensis*, ser. D, 2(12), 1 pp. 29–132.
5. Kuruc, M. (2017). *Priručka pre používanie dotazníka SRQ-Academic v pedagogickej praxi*. Bratislava, Univerzita Komenského.
6. Paterson, C. C. (1996). Self-regulated Learning and Academic Achievement of nSenior Bilogy Students. *Australian Science Teachers Joüurnal*, 42, No. 2, pp. 48–52.
7. Pířšová, M., Kostková, K., Janík, T. et al. (2011). *Kurikulární reforma na gymnáziích – případové studie tvorby kurikula*. Praha: VÚP v Praze.
8. Roberst, D. A. (2007). *Scientific literacy/Science literacy. Handbook of Research on Science Education*. Available: <http://faculty.education.ufl.edu/tsadler/Roberts-SciLit.pdf>
9. Rochovská, I. (2012). *Formovanie prírodovednej gramotnosti študentov odboru predškolská a elementárna pedagogika*. Ružomberok: Verbum.
10. Ryan, R. M., & Deci, E. L. (2017). *Self-determination theory: Basic psychological needs in motivation, development, and wellness*. New York: Guilford Publishing.
11. Ryan, R. M., & Deci, E. L. (2004). Self-determination Theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist*, 55, pp. 68–78.
12. Ryan, R. M., & Connell, J. P. (1989). Perceived locus of causality and internalization: Examining reasons for acting in two domains. *Journal of Personality and Social Psychology*, 57, 5, 749–761.
13. Svobodová, J. (2013). *Perspektivy a koncepce přírodovědného vzdělávání*. Hradec Králové: European Institute of Education.
14. Škoda, J. (2005). *Současné trendy v přírodovědném vzdělávání*. Acta Universitatis Purkynianae no. 106. Studia paedagogica. Ústí nad Labem: UJEP.
15. Uhrinová, M. (2019). Přírodovedné vzdelávanie v materskej škole. *Predškolská výchova*, vol. 73, issue Máj/Jún, p. 3-6.

Primary Paper Section: A

Secondary Paper Section: AM

SELF-REGULATORY TEACHING IN INTERPRETATIONS OF SLOVAK TEACHERS

^aEVA SEVERINI, ^bBLANKA KOŽÍK LEHOTAYOVÁ,
^cMARTIN KURUC

*Faculty of Education of Comenius University in Bratislava
Račianska 59, 813 34 Bratislava, Slovakia
e-mail: ^aseverini@fedu.uniba.sk, ^blehotayova@fedu.uniba.sk,
^ckuruc@fedu.uniba.sk.*

Processed within the project VEGA 1/0443/18 Analysis of self-regulatory learning styles of students in the field of Preschool and Elementary Pedagogy.

Abstract: The presented study deals with the issue of cursive handwriting, which in Slovakia has not only a long tradition, but also cultural and historical value from the perspective of sample of primary education teachers. The theoretical part focuses on the cultural heritage and its forms, but also on the retrospective development of writing and the current form of self-regulation teaching writing in primary education. The research part of the study primarily focuses on identifying and analyzing the views of primary education teachers on the merits of cursive handwriting of primary school pupils. Based on the realized interviews we managed to interpret categories related to cursive, where not only the pedagogical (professional) side of the issue is declared, but also categories related to attitudes and values, which together create a comprehensive view to retain traditions of cursive handwriting in environment of primary education in Slovakia as a part of the possible cultural heritage of our country.

Keywords: cultural heritage, cursive handwriting, primary education, primary school teacher, self-regulation.

1 Introduction

"Culture research is an integral part of the processes of preserving national cultural identity, as well as integrating national culture into the further development of a common European cultural space." (The concept of focusing and supporting research in the field of culture for the years 2016 to 2020). Cultural heritage is a summary of both tangible and intangible components which is not only characteristic, but also important to society because it forms part of its own national identity. Since the cultural heritage is not a closed framework, several criteria need to be identified and assessed in terms of its protection. We believe that, in the interest of every society, the cultural heritage should be protected and preserved for future generations. The teacher as a mediator of the content of his own culture reflects the current challenges not only of the pedagogical but also of the societal dimension. Based on this, a high degree of self-regulation can be identified for a teacher who has ideas about his own work, solves the dilemmas of his own professional concept, but also the challenges of ongoing transformation and globalization changes (Kožuchová and Kuruc, 2019, p. 8). By teaching strategies, we mean the procedure that the individual chooses in his teaching (educational strategies), but also those by which the teacher encourages the student to learn certain cognitive strategies (teaching strategies). The strategies chosen by the individual have been discussed by Wolters and Rosenthal (2000). These are the following strategies:

- Considering the consequences when an individual has to finish work at home, even if he has the opportunity to engage in more enjoyable activities. He is considering a strategy to stay in the effort (to fulfill the required role).
- Environmental regulation. In case that an individual encounters an obstacle that prevents him from completing a task, he considers how to change the environment to complete the required task.
- Increased interest. When an individual encounters an obstacle in learning (while completing a task), he is looking for a way to change the task into a fun activity (while completing the task he is looking for a way that will increase his interest).
- Mastering internal speech. The individual is waging an inner struggle with himself. He speaks to himself and convinces of the reasons why it is important to stay in learning. For example, he wants to improve his learning because it is in line with his goal orientation.

- Doing internal speech. The individual speaks to himself and is convinced of the reasons why it is important to stay in learning.

The strategies that individuals chose to persevere in learning have influenced their motivation and emotions (Corno, 2008). Knowing own resources (one's own self) allows the individual to be able to control himself (he does not have to fight with himself). Self-awareness is a prelude to the self-regulation of each individual's behavior. The image we have of ourselves is created by a social mirror (people around us). These are projections of the life stories of people who talk about students, rather than precise reflections of what they really are. On the other hand, the individual is able to learn from his own experience and have an independent will. If a student knows what he or she attributes to the causes of success and failure, he or she can influence other situations in his or her life and act on the basis of his / her own self-awareness. In order for an individual to be able to manage his learning on his own, to work on himself and to improve, he needs to acquire a whole range of specific competencies, especially competences leading to self-regulation of learning, and thus started the lifelong learning process. Schunk and Ertmer (2005 In: Boekaerts et al., 2000) consider the most important skills that form the essence of learning self-regulation competence: setting learning goals; evaluation of own abilities; focus on study and strong will; appropriate learning strategy; be able to search for different sources when learning; efficient time management; monitoring the progress of learning; ability to overcome barriers in learning; monitoring progress; flexible change of learning strategies and their replacement by more effective ones; a positive image of oneself (belief in one's own abilities).

The basic aim of language teaching is to acquire script as a basic tool of literacy, communication and expression (Belešová a Szentesiová, 2017, p. 145). Writing is an integral part of human society created by writing a language of lasting character.

The currently valid form of continuous cursive handwriting, which is currently taught in primary schools in Slovakia, has undergone a long development. The font model from 1932 has not been modified since its introduction, except for a few minimal changes. In 2018, the event "Font for Schools" organized by the Slovak Design Center in Bratislava as part of the exhibition "100 Years of Design" was a unique example focused attention to the issue of writing. During the exhibition, the museum organized creative workshops for beginning writers - primary school pupils and a panel discussion about writing in historical and contemporary context, with an account of the advantages and disadvantages of cursive handwriting (Slovak Design Center). Representatives of graphic and writing designers, children's book designers and illustrators, together with a former primary school teacher, discussed the indisputable quality and aesthetics of cursive handwriting, but they emphasized the limitations, in the modern approach to teaching, encountered by barriers to pupils, teachers and graphic designers. The group of experts thus demonstrated the ambition to seek a solution in the form of a modernized cursive handwriting. It is not the only one discussion and challenge to explore changes in the form of teaching written scripts in primary school, because the issue of cursive handwritten scripting is a topic discussed in professional circles. This is mainly related to the existing proposals for modifying the shapes of the written Latin alphabet, which are currently accepted in the form of alternative Comenia Script and its teaching in primary schools.

According to several experts, the current typeface in the classroom does not meet the current needs of society, which is associated with the effort to change the font by introducing an alternate discontinuous Comenia Script that does not have a fixed shape, allowing pupils to adapt the letter shape to their own requirements. In connection with this issue there are arguments

about the appropriateness and inadequacy of teaching writing in the case of cursive handwriting or alternative script Comenia Script. Our aim was to find out and interpret the opinions of primary school teachers in elementary schools on the current type and its alternative.

2 Methodology

The methodology of qualitative research with corresponding design was chosen for the processing of the issue. The decision to realize a qualitative examination was based on the consideration that we are finding opinions and attitudes that cannot be calculated and expressed as a percentage. Qualitative research also suited us because it emphasizes individual understanding of the issue. The aim of the research was not to assess and evaluate, but to find out the opinions of research subjects (teachers of primary education) on the examined phenomenon.

The research problem arose from observing and analyzing specific cultural discussions in the school educational context. The main aim of the research was to find out, analyze and interpret the opinions of primary education teachers on the form of written script. Based on the above, our intention with regard to the title of the study was:

- To identify the positives of the current cursive handwriting.
- Identify the negatives of the current cursive handwriting.

Research questions:

- What aspects do primary education teachers consider as positive of cursive handwriting?
- What aspects do primary education teachers consider as negatives of cursive handwriting?
- What aspects do primary education teachers consider as positive of Comenia Script?
- Which aspects do primary education teachers consider as negatives of discontinuous Comenia Script?

The selection of research subjects was intentional, and the selection of specific teachers was conditional with at least five years of teaching experience at primary school. The inclusion of participants in the research was always preceded by a personal interview with a request for approval to record the interview, information about the objective of the research and clarification of the ways that each research informant will be anonymous. The research sample consisted of primary education teachers in amount of twenty subjects from Bratislava and Trenčín regions, aged 31 to 52 years. The exact number of informants that made up the research sample was determined during data processing when we reached the desired level of saturation.

The research tool used was an in-depth interview. An in-depth interview was realized as a non-standardized questioning to one researcher through several open questions (Švaříček, Šed'ová et al., 2007, p. 159). The reason for the selection was that it captures statements and words in a natural way, which allows data to be obtained in the form of information on the views and attitudes of research subjects. We conducted a unstructured interview. The questions in the interview met specific criteria by using direct questions that were wide enough, not describing the objectively given phenomenon, and focusing on the type of writing that teachers teach. We only realized a direct interview with both the written and the audio recording of the answers, on the basis of which we created the transcript.

The transcription of research data was the first step of a thematic analysis carried out by open coding. Open coding was a "process of disassembling, examining, comparing, conceptualizing, and categorizing data" (Strauss a Corbinová, 1999, p. 42). In the research data record, we wrote code names in the form of conceptual designations in parallel with the unit boundaries. Open coding was performed through successive and repeated analysis of data in individual paragraphs, lines and transcript

words. We understood coding as a procedure through which we specified variables related to the set research questions. We then moved on to a systematic categorization where the category names are related to the identified data.

After the end of open coding, we implemented another analytical method called "cards on the table", which is an extension of open coding. The choice of the research technique of cards on the table was favored over other research data processing techniques because all induced categories were interconnected and related to the research questions (Švaříček, Šed'ová et al., 2007, p. 226). An essential condition of this technique is just established link between the induced categories.

3 Interpretation of research results

In the following part of the study, we present research findings that constitute a repertoire of primary school teachers' opinions and attitudes about written script. This conceived theory was based on induced categories of relevance to the research objective of the study, which we present with samples of data units and codes identifying individual subjects of research.

Table 1 Gives an overview of the identified concepts and their respective categories. Source: own processing.

CATEGORY	CONCEPTS
WRITING IN THE ELEMENTARY YEAR	Central nervous system, cognitive functions, graphomotors, print hand, handwriting, writing practice, teacher and pupil motivation, selection of a written model.
STUDY PROBLEMS IN WRITING	Health indications, dysgraphia, attention deficit disorder, visual discrimination, visual memory problem, neurosis.
CULTURAL TRADITION	Conservatism, cultural heritage, protection of traditions, generational differences, globalization, lack of interest in society, refusal of change.

Writing in the elementary year - Part of the current typeface is a form of printed and written writing. The frequency of printed fonts in our society is much higher than the frequency of written fonts. The child gets in touch with the printed form from the earliest age of life and thus becomes natural for him. The nature of the printed script is presented by an interview sample: "I think the more natural is the printed script for them, it is easier. They have been encountering the printed alphabet from their childhood more in their everyday life, in shop signs and so on. Or in the newspaper, there is a printed font everywhere" [R11]. This is also described by the statement: "I think from the beginning the printed is more natural for them, because in kindergarten they also meet with printed capital letters" [R16].

A printed font is considered to be easier to imitate than a written font. Writing capital letters occurs to pupils at the first stage of primary school. "Pupils tend to use print hand. They connect it to such a whole ... basically they want to imitate each other. It's like an uniform, print hand is just like that" [R6]. The look at the script that pupils perceive and prefer is also related to the impact of technologies that are an integral part of our lives. "I think it is also this computer era and mobile phones, there are a lot of used mainly printed and discontinuous font" [R4].

When teaching Comenia Script with its innovative concept of contemporary didactics of writing, the emphasis is not on perfect typography and unnecessary difficulty, but primarily on the writer's interest in the content (Fasnerová, 2018, p. 53). "Unbound and simple scripts allow students to express themselves more quickly, making learning more interesting and efficient. But I do not want to say that the one who writes in cursive handwriting will not achieve the same goal, only the road is more difficult" [R14].

The cursive handwriting is linked differently than the print hand, it is flowing and runs from bottom to top. Teaching cursive handwriting is considered more difficult for the writer. "Cursive handwriting is more difficult than print hand script because there are several elements involved that participate in a demanding psychomotor process such as writing" [R5]. "When I compare the cursive handwriting with Comenia Script, the script is more

complicated. In fact, there are fewer things that pupils have to keep in mind when writing a Comenia Script, so it's easier for them. The opposite is cursive handwriting, when they have to remember the individual shapes and ways of linking" [R10]. Although cursive handwriting fonts are considered more difficult than printed hand fonts, they are still considered manageable. It declares the statement: "Cursive handwriting is not unmanageable. We have learned to write in this way for generations" [R2].

Writing by cursive handwriting with all its elements (continuity, arc, loops) is considered important from the psychological point of view, but also from the point of view of the development of fine motor skills. "They are very beneficial, because the writing is such a graceful movement of the writing and the children encounter it from a young age, it is a follow-up to the first circular movements" [R18]. Individual elements of arc and loops positively affect the memory of the writer, which declares the statement: "It also develops memory, I remember it from many previous brain exercises, that the different loops, eights I do with pupils and also before the dictate, so of course I find it beneficial" [R3].

The current concept of teaching is based on the directivity of the teaching of the script. If the school has a cursive handwriting as a typeface, the task of the pupils is to write it on all subjects with observance of its rules. By living in a modern technology society, we are in touch with a lots of printed scripts; pupils do not consider a cursive handwriting template which they have to use in the school environment as part of them. An example of the interview says this: "They only consider that as this is the script I use at school at the Slovak language subject or somewhere else, because I have to write it there, but they do not consider it as part of their life" [R4]. An exception to the directive is the object of a foreign language, which we declare in the data unit: "For example, when I teach English, where I give them a choice" [R12].

Current teachers would welcome the choice of writing in the educational process. The existence of the choice of fonts is recorded in one of the testimonies of the subject: "But perhaps at the school, the quality of teaching may be better. I personally would give it as an alternative to classical script. It can improve the quality of teaching, it may be faster, it may be easier for children, so they don't burden so much by writing and maybe have more time for other things. Because when it is written in cursive handwriting, it takes a lot of time. If the script is easier, they may have more time to read and do other things" [R20].

Problems of pupils in writing - The current typeface, the classic cursive handwriting typeface, is considered to be a challenging process, but a process manageable by the normal healthy population, which, according to pedagogical practice, presents the subject to the researcher: "Only pupils with some educational disorders have a problem" [R4]. For pupils with learning disabilities, the current typeface is often difficult. There are several writing problems associated with the complexity of the cursive handwriting for learners with learning disabilities. "Transferring the image into the written form is sometimes very difficult for these pupils. They have a problem both to remember the shape and to remember what they saw. Visual discrimination and memory, that is not sufficiently developed, can make a particular chart difficult for him. He / she cannot transfer it from one shape to another, either printed to written or written to printed" [R3]. As a result of the problems in writing these pupils, the script becomes unreadable. "We meet with this often, that children have problems with attention, memory and motivation. I think this affects readability" [R6]. In many cases, pupils often do not practice a certain shape of the letter, have a problem with the fixation of letters, at which time they tend to print hand letters. Children without a health problem use classical cursive handwriting letters. The testimony of the subject says: "Children many times do not finish the shape and it happens in those children who do not properly practice the written form and they do not know many times in the third, fourth class how the written form looks like. So, I would say that they have a problem

with the letter fixation. Those children who have no problem with learning know the letters, so they still write by cursive handwriting, but those who have some difficulties to learn and have some kind of disorder, or dysgraphia, dysortography, so for them print hand is simpler version. Because they don't even know how to connect it" [R1]. The form of cursive handwriting is considered more difficult eg. dysgraphers may have trouble writing it. "The scripture of such a student will never be readable and neat, which can be disincentive to further learning" [R11].

Comenia Script is easier for pupils with specific learning disabilities, dysgraphers, left-handers and for bilingual learners (Lipnická, et al., 2019, p. 169). Pupils are better at managing it and their writing is more neat and readable even in higher grades (Lencová, 2011, p. 39). "But if I see that the child has any problems, I have no problem using that font. I see it as a great benefit especially for those troubled pupils" [R4].

Cultural tradition - The view of the present script is largely influenced by the traditions of our culture. The form of preserving cursive handwriting as part of our history is a common argument for maintaining the current typeface and do not include an alternative font in the curriculum. "There are a number of reasons why students currently do not have to learn cursive handwriting, which we all learned and used. On the other hand, it is our cultural heritage. It is something that belongs to this country. I am probably very conservative and advocate of traditions that belong to our culture. I agree that pupils should learn what belongs to us, distinguishes us from others, so that we do not give up what is typical for our country" [R3].

The globalization of individual countries of the world and its associated English language, which is the most frequently learned foreign language in Slovak schools, also has an impact on the contemporary type of writing - cursive handwritten script. Typical of the English language is printed letters, which is used in most countries as the primary form of writing. With the introduction of the English language into the curriculum of the various levels of education, there is, in part, an incentive for the use of the printed form from school side, what caused also inclination from students to use it. "At English lessons, pupils automatically write in printed letters. English is mostly in printed or printed-written form without linking. I encountered the case that one student who went from Slovakia to study in England and used handwriting, had a huge problem in their schools. Because they couldn't decipher what she wrote, they didn't know the graphemes" [R13]. On the other hand, the current typeface contains both printed and written form, which enables pupils to know and master both types and can then use the form that is more appropriate in the context of international communication. "We are looking for our own way and adjust the font to the current requirements. We have the advantage because we know more options" [R2].

At present, only teachers of primary education are strictly committed to adherence to cursive handwriting script. "Twenty years ago, when I came to teach, everyone cared about writing, not just at school, but the parent also tended that you had to write nicely, because that's the first-class basis and now the automatic answer is, that it is never going to be necessary. Everyone thinks it's not needed. In general we don't really need it, but it is necessity. Overall, there is an opinion in society that in adulthood there is no need for written scripts, and each adult writes completely differently than he learnt in the first year of primary school" [R17]. As a rule, although everyone learns to write according to an identical written template in the first year of primary school, everyone writes differently in adulthood. Genetic predispositions as well as way of teaching writing cause the differences. In order to fulfill the socio-communicative function, written script must be readable, neat and reasonably fast written. Often cursive handwriting does not have this feature and especially the writing of older pupils tends to be unreadable and uncomely.

4 Conclusion

Based on the research data obtained through our realized qualitative research, we can evaluate the fulfillment of the objectives: Identify the positives and the negatives of the current cursive handwriting. Through research findings, we consider it important to point out a possible change in the written pattern that is related to the replacement of cursive handwriting script by its alternative form. The introduction of the alternative Comenia Script from the perspective of the research sample is not justified for all pupils except those with specific learning disabilities.

Research findings of a specific research sample of primary education teachers in Slovakia raise the question of preserving the form of cursive handwriting not only from a pedagogical and methodological-didactic point of view, but also from a cultural point of view (if we understand culture in two meanings, where the core of both contains ideas and values along with high self-regulation of the individual). From our point of view, we consider it important to accept the relationship between heteroregulation and self-regulation as necessary aspects that are, as far as possible, the most suitable for the primary school student himself.

The effort to preserve the tradition, which in our culture is also connected with the teaching of cursive handwriting, is an impulse to reflect on the cultural identity of our country, which currently does not belong to the attributes of cultural heritage.

Literature:

1. Belešová, M., & Szentesiová, L. (2017). Rozwój wczesnej nauki pisanja i czytania wśród dzieci w przedszkolu. *Pedagogika przedszkolna: szansą na świadome budowanie potencjału dziecka*. Toruń: Wydawnictwo Adam Marszałek, pp. 144-159.
2. Boekaerts, M., Pintrich, P. R., & Zeidner, M. (2000). *Handbook of Self-regulation*. Academic Press San Diego, New York, London, Sydney, Tokyo.
3. Corno, L. (2008). Work Habits and Self-Regulated Learning: Helping Students to Find a "Will" from a "Way". Zimmerman, B. J., Schunk, D. H. (Eds.) *Motivation and Self-Regulated Learning: Theory, Research, and Applications*. New York, London: Routledge, pp. 197-222.
4. Fasnerová, M. (2018). *Prvopočáteční čtení a psaní*. Praha: Grada.
5. Kožuchová, M., & Kuruc, M. (2019). Motivácia k technickému vzdelávaniu u študentov programov pred-primárne a primárne vzdelávanie. *Journal of Technology and Information Education*. vol. 11, issue. 2, pp. 1-17.
6. Lencová, R. (2011). Comenia Script jako výzva pro učitele, děti a rodiče. *Poradce pro ředitelky mateřské školy*. Vol. 12, pp. 38-41.
7. Lipnická, M., Babiaková, S., Lomenčík, J., Cabanová, M., Duricová, L., & Kováčová-Švecová, Z. (2019). *Rozvoj jazykovej a literárnej gramotnosti v predškolskej a elementárnej pedagogike*. Banská Bystrica: Belianum.
8. Slovak Design Center / Slovenské centrum dizajnu. Písmo pre školy-panelová diskusia. Available: <https://www.scd.sk/?ncd&sprava=pismo-pre-skoly-panelova-diskusia>.
9. Strauss, A., & Corbinová, J. (1999). *Základy kvalitativního výzkumu: postupy a techniky metody zakotvené teorie*. Boskovice: Albert.
10. Švaříček, R., Šedřová, K. et al. (2007). *Kvalitativní výzkum v pedagogických vědách*. Praha: Portál.
11. The concept of focusing and supporting research in the field of culture for the years 2016 to 2020 / Koncepcia zamerania a podpory výskumu v rezorte kultúry na roky 2016 až 2020. Available: <http://www.culture.gov.sk/posobnost-ministerstv-a/kulturne-dedicstvo-/vyskum-a-vyvoj-v-rezorte-kultury-25e.html> [cit. 2019-11-10].
12. Wolters, C. A., & Rosenthal, H. (2000). The relation between students' motivational beliefs and their use of motivational regulation strategies. *International Journal of Educational Research*, Vol. 33, No. 7-8, pp. 801-820.

Primary Paper Section: A

Secondary Paper Section: AM

QUALITY ASSESSMENT OF SELECTED RESTAURANT SERVICES USING THE MYSTERY SHOPPING METHOD: CASE STUDY OF PORTUGAL

^aIVICA LINDEROVÁ, ^bPETR SCHOLZ, ^cNUNO MIGUEL CASTANHEIRA ALMEIDA

*College of Polytechnics, Tolstého 16, 586 01 Jihlava, Czechia
Technical University of Liberec, Voroněžská 13, 460 01
Liberec, Czech Republic*

Polytechnic of Leiria, Rua do Conhecimento 4, 2520-614

Peniche, Peniche, Portugal

email: ^aivica.linderova@vsppj.cz, ^bpetr.scholz@tul.cz,

^cnunoalmeida@ipleiria.pt

Acknowledgements: This research was supported by the College of Polytechnics Jihlava.

Abstract: At present, the market development of accommodation facilities and restaurants accompanied by the growth requirements of the guests focus on the quality and structure of additional services. The paper pays attention to the quality of tourism services as an essential criterion for travel decision. The paper also focuses on tourism in two regions of Portugal and offers tourism overview in selected districts. The paper aimed to evaluate the quality of hospitality services in selected regions during the low season. The research evaluation categories were: place and important visible information, atmosphere and cleanliness, menu, order process, payment process, staff – delivery person. The research was realized in the Metropolitan Area of Lisbon and Central Portugal in October 2019 and used mystery shopping as a research method. We also used the analysis method (the Correspondence analysis), mathematical and statistical methods. For the evaluation of the results, Statistica 13 EN Program was used.

Keywords: Hospitality. Mystery shopping. Restaurant. Quality. Services.

1 Introduction

The purpose of the tourism sector is the provision of accommodation, food, drink and leisure activities. The industry is closely bound to ensure a high standard of guest service and quality visitor experience. The visitor is at the heart of the industry and further synergy is found in common vertical and horizontal ownership which means that many operators can be found in more than one industry (Jones & Haven-Tang, 2005).

At present, the market development of accommodation facilities and restaurants accompanied by the growth requirements of the guests focus on the quality and structure of additional services. Guests' satisfaction with services in tourism is, thus, one of the critical factors affecting the level of sales and profits, prosperity, position in the competitive environment, etc. The quality of accommodation facilities and restaurants is proportional to the satisfaction of the guests. Apart from the quality, service and professionalism of the staff are important factors. Professionalism, friendliness, and willingness influence the guests' perceptions (Scholz & Voráček, 2016).

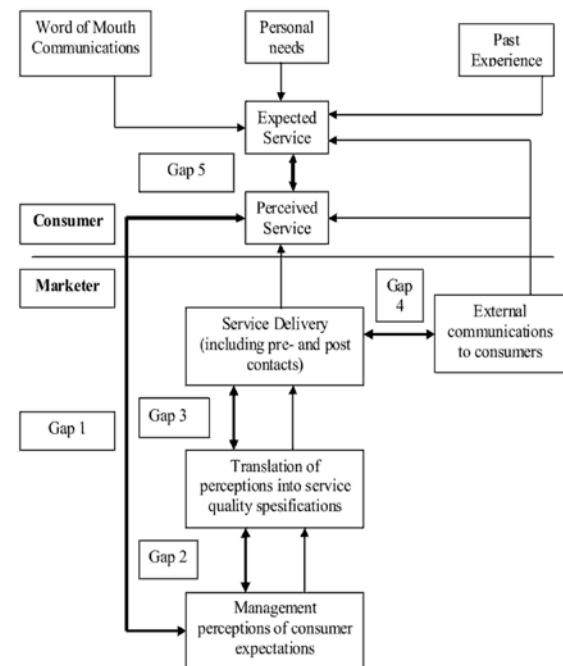
2 Literature Review

Quality and high-level services are concepts indissolubly associated with the tourism and hospitality industry. Quality involves consistent delivery of products and guest services according to expected standards (Kapiki, 2012). Simultaneous production and consumption make people the key to successful service delivery. The guest experience comprises a series of server interactions at the point of service (Hoque, 1999; Svensson, 2003; in Jones & Haven-Tang, 2005). Quality is meeting or exceeding guest expectations. To meet or exceed guest expectations, organizations must fully understand all service attributes that contribute to the guest value and lead to satisfaction and loyalty (Evans & Lindsay, 2010; in Kapiki, 2012).

In analyzing service quality, both employee and guest perceptions must be examined (Randall & Senior, 1996; in Jones & Haven-Tang, 2005). If employees and guests share the same values, then service quality expectations should be met. Where gap exists, for cultural and other reasons, producers need to be in place for employee development and training (Jones & Haven-Tang, 2005).

The gap model (also known as the five gaps model, figure 1) of service quality is an important guest-satisfaction framework, and it is used in research method SERVQUAL. Its primary building block is the so-called paradigm of conflict between the ideas of guests and thus what kind of service they will receive. Gap 1 is between consumer expectation and management perception; arises when the management or service provider does not correctly perceive what the guest wants or needs. Gap 2 is between management perception and service quality specification; this is when the management or service provider might not correctly understand what the guest wants, but may not set a performance standard. Gap 3 is between service quality specification and service delivery; may arise pertaining to the service personnel. It could occur due to there being inadequate training, incapability or unwillingness to meet the set service standard. Gap 4 is between service delivery and external communication; guest expectations are highly influenced by statements made by accommodation facilities and advertisements. The gap arises when these assumed expectations are not fulfilled at the time of service delivery. Gap 5 is between expected service and experienced service; this gap arises when the guest misinterprets the service quality (Parasuraman et al., 1985).

Figure 1: The Gap model



Source: Parasuraman et al., 1985.

To provide better service and value, it becomes increasingly important for hotels and restaurants to monitor guest perceptions of service quality. Employees in these facilities should follow the rules of guest care to prevent dissatisfaction rating: (1) Acquire a new guest is more complicated than to keep the existing one. (2) If the problem persists, then the guest will be lost forever. (3) Dissatisfied guests have a lot more friends than satisfied. (4) The guest is not always right and, therefore, depend on the employee how to explain the situation to the guest. (5) Hotels and restaurants should never forget that the guest always has a choice. (6) The complaint is a gift. Hotels and restaurants should receive complaints because they can improve. Hotel and F&B managers must listen to their guests to know what they want. (7) When the hotels and restaurants do not take care of their guests, somebody else will do (Scholz & Voráček, 2016).

Managing guest-server interactions is one of the most challenging but crucial tasks for tourism managers (Baum, 1197; in Jones & Haven-Tang, 2005). Employers must define service quality goals and achieve employee commitment to them, as well as ensuring employees have the appropriate skills, knowledge, attitude, authority and access to information necessary for providing high-quality guest service (Hoque, 1999; Evans et al., 2003; in Jones & Haven-Tang, 2005). Keith & Simmers (2013) state that many hotel and F&B managers choose comment cards as a method to measure guest satisfaction. However, the question remains as to whether comment cards are an effective evaluation tool and whether the appropriate service quality dimensions are being assessed.

Service quality is the key to competitive advantage. Long-term effects of service quality are more important than short-term ones (Jones & Haven-Tang, 2005). Kapiki (2012) states that quality assurance is a long-term commitment which represents a cost, but a welcomed and a lower one than that of non-quality. The managers should identify, record and weigh up the impacts of quality cost-profit and be in a position to prioritize towards quality improvement processes. The cost-benefit ratio of quality could be achieved through an equation of non-quality costs and quality assurance towards the benefits of operational cost savings, as well as guest return rate and word of mouth recommendation.

In many ways, defining and controlling the service quality is more complicated than the quality assurance of products. Unlike manufacturing, service industries share unique characteristics that make the process of quality control less manageable but not less important. Moreover, the level of quality expected is less predictable. Service company operations are affected by several characteristics, including the intangible nature of the output and the inability to store the output. Other distinguishing features include: (1) behavior of the delivery person, (2) image of the organization, (3) the guest present during the production process and performing the final inspection, (4) the measure of output is difficult to define, (5) variance and acceptance ranges may not apply, (6) adjusting the control system if the guest is present (Ross, 1999).

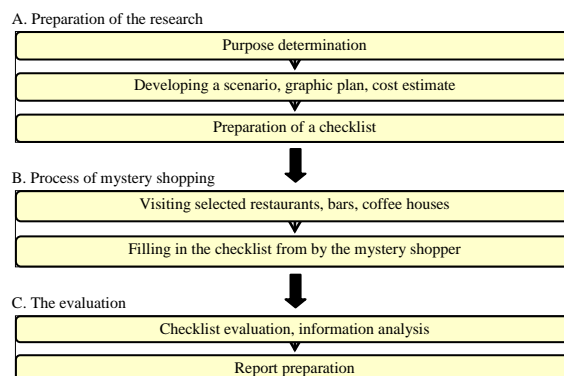
However, the most significant problem with the delivery of services is that it is typically measured at the guest interface – the one-on-one, face-to-face interaction between supplier and guest (Ross, 1999).

3 Materials and Methods

The paper aimed to evaluate the quality of hospitality services in Portugal during the low season. The research was realized during October 4-26, 2019. The area of study was Central Portugal and Lisbon District. Those regions are interesting for tourists during the low season considering good possibilities for golf tourism, surfing and cultural heritage. We used mystery shopping as a method to evaluate the quality of services in selected restaurants, bars, and coffee houses.

Mystery shopping (also called mystery guest research) is a research method that is based on the principle of the so-called secret shopping. Secret shopping is used to find out the level of sale and the readiness of individual shops or their staff members to cope with the arrival of the potential guest. During the research process, there is observed the seller's behavior. Also, the time spent waiting, form and the realization of the offer, interior, atmosphere, visage and the neatness of seller and other features which can influence the success of the selling process. The process of mystery shopping (figure 2) consists of three phases. The first phase is project preparation. The second phase represents the process of mystery shopping itself, and in the last phase, the evaluation process is finished (Staňková & Vaculíková, 2007).

Figure 2: Process of realized mystery shopping in Portugal



Source: Own elaboration, 2020.

The primary document for mystery shopping provider is the checklist. Through it, we can check in detail the sale process that is focused on the given topic and particular services. The checklist is a supplementary instrument of evaluation of the mystery shopping which evaluates especially following parameters, e.g.:

- the first impression, interior,
- behavior of staff workers, their neatness and appearance,
- the first contact, addressing, beginning of the communication,
- extent to what guest's needs were found out,
- communicative skills of the seller,
- scope of supply, advantages and discounts provided,
- realization of the selling itself, supplementary sale,
- providing information about after-sales service,
- send-off and acknowledgements.

The checklist contains a list of criteria (table 1). Our research evaluation categories were (1) place and important visible information, (2) atmosphere and cleanliness, (3) menu, (4) order process, (5) payment process, (6) staff – delivery person. Restaurants could receive a maximum of 39 points from all categories. Every category has some evaluating criteria which were surveyed.

Table 1: Control criteria

Category	Criteria	Points	Total
Place & important visible information	• name of the restaurant	2	11
	• opening hours	2	
	• payment possibilities	2	
	• other details (e.g. accessible for kids, disabled person)	2	
	• parking possibilities	3	
Atmosphere & cleanliness	• atmosphere	1	9
	• table	2	
	• cleanliness of the restaurant	2	
	• accessibility of condiments	2	
	• cleanliness of the toilet/restroom	2	
Menu	• visual effect, information about dishes	1	2
	• special offer (e.g. autumn offers, happy hours, etc.)	1	
Guest arrival	• greeting till 30 seconds	1	2
	• welcoming	1	
Order process	• salutation waiting time	2	9
	• order waiting time	2	
	• waiting time for beverages	2	
	• waiting time for dishes	2	
	• service of dishes and beverages	1	
Payment process	• waiting time for the bill, correctness of bill	2	4
	• send-off with guest	2	
Staff – delivery person	• visage	2	5
	• behavior	1	
	• professionalism	1	
	• direct marketing	1	
Total points			39

Source: Own elaboration, 2020.

We selected 15 restaurants for our research. The selection was made based on local inhabitant recommendations and according to TripAdvisor rating.

For the evaluation of the results, Statistica 13 EN Program was used. Further, we used the analysis method (also Correspondence analysis - CA), mathematical, and statistical methods. Using the graphic tools of this CA, it is possible to describe an association of nominal or ordinal variables and to obtain a graphic representation of a relationship in multidimensional space – for the readers; it is easier to understand. The analysis provides further evidence that dependencies exist between variables. Correspondence analysis (CA) is a multivariate statistical technique. It is conceptually similar to principal component analysis but applies to categorical rather than continuous data. In a similar manner to principal component analysis, it provides a means of displaying or summarizing a set of data in a two-dimensional graphical form (Zámková & Prokop, 2014).

All data should be non-negative and on the same scale for CA to be applicable, and the method treats rows and columns equivalently. It is traditionally applied to contingency tables - CA decomposes the chi-squared statistic associated with this table into orthogonal factors. The distance between single points is defined as a chi-squared distance. The distance between the i -th and i' -th row is given by the formula

$$D(i, i') = \sqrt{\sum_{j=1}^c \frac{(r_{ij} - r_{i'j})^2}{c_j}} \quad (1)$$

where r_{ij} are the elements of row profiles matrix R and weights c_j correspond to the elements of column loadings vector c^T , which is equal to the mean column profile (centroid) of the column profiles in multidimensional space. The distance between columns j and j' is defined similarly, weights correspond to the elements of the row loadings vector r and sum over all rows. In correspondence analysis we observe the relation between single categories of two categorical variables. The result of this analysis is the correspondence map introducing the axes of the reduced coordinates system, where single categories of both variables are displayed in graphic form. The aim of this analysis is to reduce the multidimensional space of row and column profiles and to save as far as possible original data information. Each row and column of the correspondence table can be displayed in c -dimensional (r -dimensional respectively) space with coordinates equal to the values of the corresponding profiles. The row and column coordinates on each axis are scaled to have inertias equal to the principal inertia along that axis; these are the principal row and column coordinates (Hebák et al., 2007).

For the correspondence analysis model, the degree of dispersion of points is defined, i.e., row and column categories, the so-called total inertia. The term inertia comes from mechanics, where it is defined as the sum of the product of mass and square distances from the centroid of all the object's particles. Geometrically, inertia expresses the degree of dispersion of points in multidimensional space and it can be understood as an analogy to the dispersion known from statistical modeling. In the correspondence analysis, the total inertia (I) is equal to the weighted average (with weights p_{+}) chi-square of the distance of the row profiles from their average/mean (vector c)

$$I = \sum_{i=1}^r p_{i+} (\mathbf{r}_i - \mathbf{c})^T \mathbf{D}_c^{-1} (\mathbf{r}_i - \mathbf{c}) \quad (2)$$

the same as the weighted average (with weights p_{+j}) chi-square of the distance of the column profiles from their average (vector r)

$$I = \sum_{j=1}^c p_{+j} (\mathbf{c}_j - \mathbf{r})^T \mathbf{D}_r^{-1} (\mathbf{c}_j - \mathbf{r}) \quad (3)$$

A significant part of the total inertia of the original table is usually explained by the first several axes. That is why it is generally sufficient for the result of the correspondence analysis to be represented in the space of the first two or three ordinal axes. Total inertia equals the sum of all eigenvalues of the matrix. Therefore, it is possible to specify how many ordinal axes it is reasonable to interpret. This can be decided in either of two ways: (1) we set the threshold value (e.g., 80%) and determine how many axes have the cumulative inertia higher than the set threshold value, (2) we interpret the ordinal axes whose eigenvalue is above-average, i.e., higher than the average of all eigenvalues.

The contributions of the row points to the inertia in the corresponding dimension are defined by the quotient

$$\frac{r_i f_{ik}^2}{\lambda_{(k)}} \quad (4)$$

where f_{ik} corresponds with the elements of the matrix F (the score of the i -th row category in the k -th dimension), r_i elements of the row loadings vector and $\lambda_{(k)}$ is inertia expressed by the k -th dimension (an eigenvalue of the matrix). A contribution of the row points to inertia expresses the relative degree of the effect of the given category on the final orientation of the main axes. In a similar fashion, the contributions of column points to inertia are expressed in the corresponding dimension

$$\frac{c_j g_{jk}^2}{\lambda_{(k)}} \quad (5)$$

For each row category, we can calculate the total row inertia, defined as

$$\sum_k r_j f_{jk}^2 \quad (6)$$

Similarly, for column categories, the total column inertia is defined as

$$\sum_k c_j g_{jk}^2 \quad (7)$$

The values of inertia for individual columns and rows give us an indication of the significance of the various categories on the resulting ordination.

4 Results and Discussion

Portugal is a country located mostly on the Iberian Peninsula in southwestern Europe. The border on the west and south is the Atlantic Ocean, on the north and east Spain.

The direct contribution of Travel & Tourism to GDP in 2017 was EUR 13.2bn (6.8% of GDP). It primarily reflects the economic activity generated by industries such as hotels, travel agents, airlines and other passenger transportation. The direct contribution of Travel & Tourism to GDP is expected to grow by 2.6% pa to EUR 18.0bn (8.2% of GDP) by 2028 (WTTC, 2019).

Travel & Tourism generated 401,500 jobs directly in 2017 (8.5% of total employment). It also includes, for example, the activities of the restaurant and leisure industries directly supported by tourists. By 2028, Travel & Tourism will account for 493,000 jobs directly, an increase of 1,6% pa over the next ten years (WTTC, 2019).

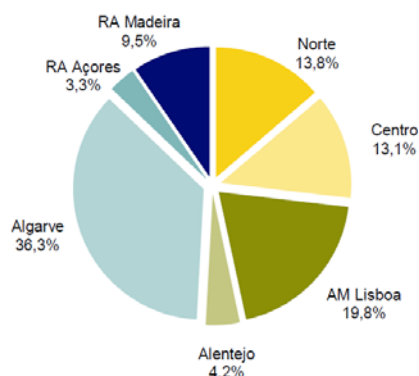
Visitor exports are a key component of the direct contribution of Travel & Tourism. In 2017, Portugal generated EUR 18.1bn in visitor exports. By 2028, international tourist arrivals are forecast to total 17,731,000, generating expenditure of EUR 26.4bn, an increase of 3.1% pa. (WTTC, 2019).

4.1 Tourism in Central Portugal and Lisbon

Portugal has five administration parts – Nord Portugal, Central Portugal, Metropolitan area of Lisbon, Alentejo district, Algarve district and two autonomous regions – Azores, Madeira (figure 3). Our research was conducted in regions of Central Portugal and the Metropolitan area of Lisbon.

In Portugal are located 6,868 accommodation facilities, i.e., hotels, apart-hotels, tourist apartments, tourist villages/resorts, farms, rural accommodation facilities such as camps, rural hotels, private accommodation, Airbnb etc. (INE, 2019b). Hotel industry concentrated 27.2% of total accommodation facilities and 75.9% of bed capacity (INE, 2019a). Central Portugal offers 1,175 accommodation facilities (60,646 beds), Metropolitan Area of Lisbon 908 accommodation facilities (84,184 beds, INE, 2019b).

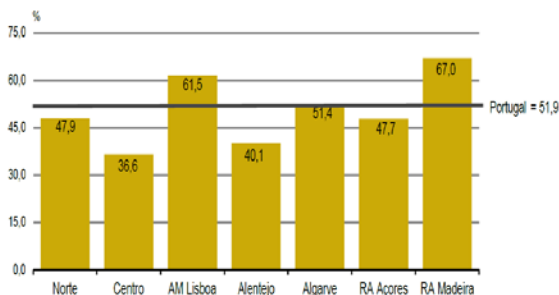
Figure 3: Capacity of beds in regions of Portugal



Source: INE, 2019a.

The net bed occupancy rate (figure 4) in hotel facilities was 51.9%. The net bed occupancy rate in Central Portugal was 36.6% and in the Metropolitan Area of Lisbon 61.5% (INE, 2019a).

Figure 4: Net bed occupancy in Portugal

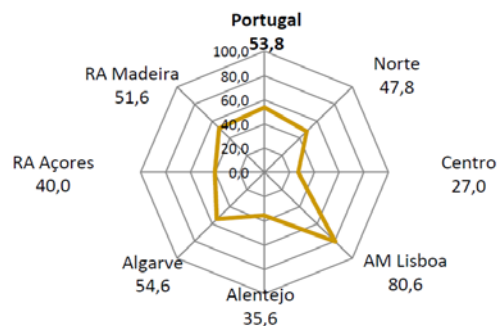


Note: Norte = Nord Portugal, Centro = Central Portugal, AM Lisboa = Metropolitan Area of Lisbon, Alentejo = Alentejo district, Algarve = Algarve district, RA Açores = Autonomous region Azores, RA Madeira = Autonomous region Madeira
Source: INE, 2019a.

The average stay in Central Portugal is 1.74 days, in the Metropolitan Area of Lisbon 2.32 days (INE, 2019a). The number of overnight stays was 67.7 million in Portugal. According to Statistics Portugal (INE, 2019), 19.9 million of overnight stays was in domestic tourism, and 47.7 million of overnight stays in incoming tourism (INE, 2019a).

The average income per available room (RevPAR, figure 5) in hotels was EUR 53.8 (data for the year 2018). The highest RevPAR was recorded in the Metropolitan Area of Lisbon (EUR 80.6), followed by the Algarve (EUR 54.6) and RA Madeira (EUR 51.6, INE, 2019a).

Figure 5: RevPAR in Portugal



Source: INE, 2019a.

In 2018, residents made 22.1 million of tourist trips. The main reason for travelling was “leisure and recreation”, justifying 10.3 million trips (46.5% of the total trips), followed by “visiting family or friends”, with 9.1 million trips (41.4% of total trips). Travel for “business” reasons (1.8 million) represented 8.3% of the total trips (INE, 2019a).

Central Portugal remained the leading national destination, with 5.9 million trips, concentrating 30.1% of the total trips. The main reason for travelling was “visiting family and friends” (54.6%). The Metropolitan Area of Lisbon covered 17.4% of national trips. The main reason for travel was “visiting family and friends” also (43.8%, INE, 2019a).

In 2018, the average expenditure per tourist on each trip was EUR 167.0. On domestic travel, residents spent on average EUR 121.5 per trip, while on abroad trips the average spending per trip was EUR 525.7 (INE, 2019a). The average daily expenditure of each resident tourist was EUR 42.0. While domestic travel corresponded to EUR 34.2 and international travel to EUR 71.6. Trips for “business” reasons reached the highest value of average daily expenditure per trip (EUR 4.6). The highest average expenditure on international trips reached “leisure and recreation” motivated trips. Those trips generated EUR 82.3 per trip (INE, 2019a).

4.2 Quality of Hospitality Services in Central Portugal and Lisbon

Quality of service is one of the factors in travel decisions. It is essential for tourist/guest return and also for company goodwill. Wu and Liang (2009; in Marković et al., 2011) stated that service encounter in restaurant settings consists of three main elements: environmental elements (e.g. design, music, lighting), employees (e.g. professional skills, reliability), and guests (e.g. interaction with other guests).

We focused on the quality of the restaurant, bar and coffee house services in selected Portuguese facilities. All researched facilities were located in the Metropolitan area of Lisbon and Central Portugal.

We researched 15 restaurants, bars and coffee houses. Mentioned facilities were chosen according to local inhabitant recommendations, and we also used the TripAdvisor rating. We evaluated restaurants 4 restaurants in Metropolitan Area of Lisbon (Saudade, Troppo Squisito, Lamassa, Upon Lisbon Prime Residence) and 11 restaurants in Central Portugal (Taberna do Ganhão, Praia del Rey Marriot Golf & Beach resort, Cantina de Ferrel, Wow Restaurant, Pausada do Castelo, Club House West-Cliffs Golf Resort, Legend Restaurant,

Pasteleria d'Avó Adélia, Entre Amigos, Jamón Jamón, Tasca do Joel, table 2).

The research was conducted in October 2019. Visits were held from Monday to Sunday in all daily interval (morning, lunch, afternoon, evening).

Table 2: Selected restaurants

Code of Restaurant	Type	City/Town	Region/District
R1	Family restaurant	Estoril	MA Lisbon
R2	Hotel restaurant	Lisbon	MA Lisbon
R3	Restaurant	Lisbon	MA Lisbon
R4	Coffee house	Sintra	MA Lisbon
R5	Hotel restaurant	Amoreira	Central Portugal
R6	Tavern	Baleal	Central Portugal
R7	Restaurant	Baleal	Central Portugal
R8	Canteen	Ferel	Central Portugal
R9	Hotel bar	Óbidos	Central Portugal
R10	Restaurant	Óbidos	Central Portugal
R11	Golf resort restaurant	Óbidos	Central Portugal
R12	Restaurant	Óbidos	Central Portugal
R13	Coffee house	Óbidos	Central Portugal
R14	Restaurant	Peniche	Central Portugal
R15	Restaurant	Peniche	Central Portugal

Source: Own elaboration, 2020.

a) *Place & important visible information.* This category evaluated criteria: (1) name of the restaurant, (2) opening hours, (3) payment possibilities, (4) other details (e.g. accessible for kids, disabled person), and (5) parking possibilities. In this category was important information which a guest can get before his/her entrance to the restaurant.

All restaurants had a visible name, and they were well labelled; apart from two restaurants that had small and poorly visible names and designations around the corner. Some of the restaurants did not inform at the entrance door about opening hours and payment possibilities. We suppose that the necessary pieces of information are important for guests. Majority of the examined restaurants had no information about other details, e.g., accessible entrance for disabled visitors, kids friendly, dog-friendly, etc. Parking places close to the restaurant are also important for visitors. Majority of restaurants disposes of with parking places (for free or paid). If the restaurant did not have a parking lot, the reason was a historical area location (table 3).

Table 3: Place & visible important information

Restaurant	Name	Opening hours	Payment possibilities	Other details	Parking	Total points
R1	2	2	0	0	0	4
R2	2	0	0	0	2	4
R3	2	1	1	0	0	4
R4	2	0	0	0	2	4
R5	2	2	2	0	3	9
R6	2	1	1	0	2	6
R7	2	0	0	0	3	5
R8	2	2	2	0	0	6
R9	2	2	0	0	3	7
R10	2	2	2	2	3	11
R11	2	2	2	2	3	11
R12	1	0	0	0	0	1
R13	2	0	0	0	1	3
R14	1	2	0	2	3	8
R15	2	0	2	0	2	6

Source: Own elaboration, 2020.

b) *Atmosphere & cleanliness.* This category focused on criteria: (1) atmosphere, (2) table, (3) cleanliness of restaurant, (4) accessibility of condiments, and (5) cleanliness of the toilet (table 4).

Table 4: Atmosphere & cleanliness

Restaurant	Atmosphere	Table	Cleanliness of restaurant	Accessibility of condiments	Cleanliness of toilet	Total points
R1	1	2	2	1	2	8
R2	0	2	1	1	2	6
R3	1	2	2	1	2	8
R4	0	2	2	2	2	8
R5	1	2	1	1	2	7
R6	1	2	2	1	2	8
R7	0	2	2	1	2	7
R8	0	2	2	0	1	5
R9	1	1	2	2	1	7

R10	1	2	2	2	1	8
R11	1	2	2	2	2	9
R12	1	2	2	1	1	7
R13	1	2	1	2	2	8
R14	1	2	2	2	2	9
R15	1	2	2	2	2	9

Source: Own elaboration, 2020.

Some of the restaurants did not evoke a good impression because of the crowded places, no people inside, and no welcoming atmosphere. Tables were generally prepared and clean. The cleanliness of the restaurant was sufficient; some small deficits caused by crumbs on table or floor, the tables were filled with leftover dishes from a previous meal, etc. Flavorings as salt, pepper or olive oil were available on the table, eventually on request. The majority of the restaurants was hygienic (with the cleanliness of toilets) by keeping the place spick and span and implementing hygiene standards and procedures. If there were some limits, they were caused by poorly visible labels, not by dirt or impurity (table 4).

c) *Menu.* The mentioned category evaluated the visual effect of restaurant offers, information about dishes and special offers (seasonal, signature dishes, the specialty of the district, etc.). All menu should inform the guest about the quantity of serving dishes, price and allergens. These pieces of information missed the majority of the restaurant's menu (table 5).

Table 5: Menu

Restaurant	Information about dishes	Special offer	Total points
R1	1	1	2
R2	1	0	1
R3	1	0	1
R4	1	1	2
R5	1	0	1
R6	1	0	1
R7	1	0	1
R8	1	0	1
R9	1	0	1
R10	2	0	2
R11	2	0	2
R12	1	1	2
R13	1	0	1
R14	1	1	2
R15	1	0	1

Source: Own elaboration, 2020.

d) *Guest arrival.* This category evaluated the behavior of the staff during the guest's entrance to the restaurant. Greetings and welcoming were asked. The staff, in some cases, did not see guest arrival. The main reason was the overcrowded eating area or the lack of interest. We have to state that the majority of waiters welcomed guests. Some of the surveyed restaurants had a special reception for arriving guests. The hostess welcomed them and showed them their table (table 6).

Table 6: Guest arrival

Restaurant	Greeting till 30 seconds	Welcoming	Total points
R1	1	1	2
R2	1	1	2
R3	1	1	2
R4	1	0	1
R5	1	0	1
R6	1	1	2
R7	1	1	2
R8	1	1	2
R9	0	1	1
R10	1	1	2
R11	1	1	2
R12	1	1	2
R13	0	0	0
R14	1	1	2
R15	1	1	2

Source: Own elaboration, 2020.

e) *Order process.* This category evaluated the behavior of staff during the guest's stay in the restaurant. All processes from salutation until serving dishes and beverages were assessed.

Generally, the order process in the selected restaurants was evaluated as an ordinary standard level. We have to state the

lack of serving coffee. More than 80% of restaurants served coffee without water; waiters did not use trays for serving dishes, etc. Beverage and food service was the full competence of the waiter, and there were no procedures and standards regarding serving (table 7). Probably, there was a reason why several times the orders were changed (different kinds of food) or forgotten (1 ½ hour waiting for a burger, 30 minutes waiting time for drinks).

Table 7: Order process

Restau- rant	Salutation WT	Order WT	WT for drinks	WT for food	Service	Total points
R1	2	2	2	2	0	8
R2	2	1	0	0	0	3
R3	2	2	2	2	0	8
R4	2	2	1	2	0	7
R5	2	2	1	2	0	7
R6	2	2	2	2	0	8
R7	2	2	2	2	0	8
R8	2	2	2	2	0	8
R9	2	2	2	2	0	8
R10	2	2	2	2	0	8
R11	2	2	1	2	1	8
R12	1	2	1	2	0	6
R13	0	2	2	2	0	6
R14	2	2	2	2	1	9
R15	2	2	2	2	0	8

Note: WT – waiting time

Source: Own elaboration, 2020.

f) *Payment process.* This category evaluated the behavior of staff after quest consumption. Waiting time for a receipt is one of the criteria. The average waiting time for the receipt was approximately 5 minutes. Two restaurants prepared the incorrect bills. They charged not ordered food or made other mistakes. Some of the waiters did not say „Goodbye“. In most cases, it was due to the overcrowded restaurant (table 8).

Table 8: Payment process

Restaurant	Waiting time for bill/receipt	Send-off with guest	Total points
R1	2	1	3
R2	2	2	4
R3	2	0	2
R4	0	0	0
R5	2	2	4
R6	2	2	4
R7	0	0	0
R8	2	1	3
R9	2	2	4
R10	2	2	4
R11	2	2	4
R12	2	1	3
R13	2	0	2
R14	2	2	4
R15	2	2	4

Source: Own elaboration, 2020.

g) *Staff – delivery person.* The mentioned category evaluated visage, behavior, professionalism of the waiter. Direct marketing was also observed.

If we focused on the uniform dress code for staff, we have to state that 50% of employees were identified with the corporate identity dress code (a nameplate was an exception). Some of the waiters wore casual clothes, not different from everyday guest clothes. Professionalism was not evaluated well. The majority of the staff did not know the basic rules of serving drinks and food. Direct marketing as a sales increasing tool was used in several cases. This type of offer is more common for hotel restaurants or family business (table 9).

Table 9: Staff – delivery person

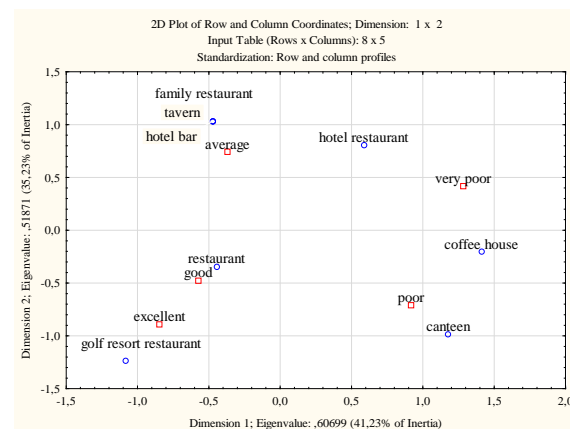
Restau- rant	Visage	Behavior	Professionalism	Direct marketing	Total points
R1	1	1	0	1	3
R2	2	1	0	0	3
R3	2	1	1	1	5
R4	1	1	0	0	2
R5	2	1	1	0	4
R6	1	1	0	1	3
R7	1	1	0	1	3
R8	1	0	0	0	1
R9	2	1	0	0	3

R10	2	1	1	0	4
R11	2	1	0	1	4
R12	0	1	0	1	2
R13	1	0	0	0	1
R14	2	1	1	1	5
R15	2	1	0	1	4

Source: Own elaboration, 2020.

According to our research, we can state that better results of mystery shopping evaluation had the resort restaurants. We guess the reason is precisely determined corporate quality standards (figure 6).

Figure 6: The research results (1)



Between 29 and 26 points had small restaurants with a unique concept, e.g., little family business with homemade product, surf restaurant, a tavern with local specialties. The restaurants that received less than 24 points, were generally overcrowded, sharing information for guests was confusing. The major problem was the non-professional staff.

The restaurants with the best evaluation in our rating get around 90% of maximum points. The worst evaluation was 49% of possible points (table 10). The guest satisfaction is principally influenced by the behavior of the staff and food quality (appearance, taste, size, shape, color, gloss, and consistency). Some specialized equipment is welcomed, and it can increase guest satisfaction and restaurant attractiveness. Such special services are kids' corner, seasonal food offers, local specialties, fresh fish, etc. We recognized the overcrowded place with noise as the greatest failure in worse evaluated restaurants. The guests could not feel the place genius loci in such an atmosphere.

Table 10: The research results (2)

Restau- rant	Total points	Note
R11	36	bad English
R14	35	daily menu
R10	35	beautiful place, friendly staff
R15	30	tables very close to one another
R5	29	nice staff
R6	28	unisex toilet/restroom
R3	28	very nice and friendly staff
R9	27	mislabelled toilet/restroom sign
R1	27	little family business delicious home-made pasta, nice authentic atmosphere
R7	26	no guests, drink forgotten, order changed without informing the guest
R4	24	overcrowded
R8	23	bad English, staff were not willing to help
R12	20	mislabelled restaurant sign
R13	19	overcrowded, self-service, no necessary information for guests (opening hours, accessibility, etc.)
R2	19	very slow service, confused order, waiting time for food more than 1 hour

Source: Own elaboration, 2020.

The restaurant service quality is difficult to evaluate because the assessments are made on both the service outcome and on the process of service delivery. Some researchers suggested that food quality, the physical environment, and service are the major components of overall restaurant service quality (Dulen 1999; Susskind & Chan 2000; Ryu & Han 2010; in Marković et

al., 2011). Among these attributes, food quality is the most important dimension of the restaurant experience (Sulek & Hensley 2004; in Marković et al., 2011). Although there is no consensus on the individual attributes that constitute food quality, the researchers focus on presentation, healthy options, taste, freshness, and temperature (Namkung & Jang 2008; in Marković et al., 2011).

5 Conclusion

We have to state that the results are average. On the other hand, we cannot generalize the results. Still, we can say that better results of mystery shopping evaluation had the resort restaurants, the least points received by restaurants, which were poorly marked, slow service, and language skills. However, we find the reluctance of the staff to be the most significant shortcoming. We recommend F&B managers to focus on this issue and thus contribute to higher guest satisfaction. It is also imperative to take an interest in the employees. Satisfied employees equal satisfied guests. Unhappy employees lead to unhappy guests. When employees are not happy at work, their interactions with the guests can, and almost always will, suffer.

Literature:

1. Hebák, P., Hustopecký, J., Pecáková, I., Průša, M., Řezanková, H., Svobodová, A., & Vlach, P. *Vícerozměrné statistické metody 3*. Praha: Informatorium, 2007. 272 p. ISBN 80-7333-039-3.
2. INE – Instituto Nacional de Estatística. *Estatísticas do Turismo 2020*. 2019a. ISBN 978-989-25-0497-1. <https://www.ine.pt/>
3. INE – Instituto Nacional de Estatística. *Quardos - Estatísticas do Turismo 2020*. 2019b. <https://www.ine.pt>
4. Jones, E. & Haven-Tang, C.: *Tourism SMEs, Service Quality and Destination Competitiveness*. Cambridge: CABI Publishing, 2005. 337 p. ISBN 0-85199-011-8.
5. Kapiki, S. T. Quality Management in Tourism and Hospitality: an Exploratory Study among Tourism Stakeholders. *International Journal of Economic Practices and Theories*. 2012, Vol. 2, No. 2, pp. 53-61. e-ISSN 2247-7225.
6. Keith, K., & Simmers, S. Measuring hotel service quality perceptions: the disparity between comment cards and lodgerv. *Academy of Marketing Studies Journal*, 2013, Vol. 17, No. 2, pp. 119-131. ISSN 1095-6298.
7. Marković, S.; Raspor, S., & Dorčić, J. What are the key dimensions of restaurant services quality? An empirical study in the city restaurant settings. *International Scientific Conference Tourism in Southern and Eastern Europe (ToSEE): Sustainable Tourism: Socio-Cultural, Environmental and Economics Impact*. 2011, pp. 235-249.
8. Parasuraman, A., Zeithaml, V. A., & Berry, L. L. A conceptual model of service quality and its implications for future research. *Journal of Marketing*. 1985, Vol. 49, No. 4, pp. 41-50. ISSN 0022-2429.
9. Ross, J. E. *Total Quality Management: Text, Cases and Readings*. Boca Raton: St. Lucie Press, 1999. 568 p. ISBN 1-57444-266-X.
10. Scholz, P., & Voráček, J. Organizational culture and green management: innovative way ahead in hotel industry. *Measuring Business Excellence*. 2016, Vol. 20, No. 1, pp. 41-52. ISSN 1368-3047.
11. Staňková, P., & Vaculíková, M. *Mystery shopping as an instrument of marketing research*. E+M Ekonomika a management. Liberec: Technical University, 2007, No. 1, pp. 108-113. ISSN 1212-3609.
12. WTTC. *Travel & Tourism Economic Impacts 2018 Portugal*. London: WTTC, 2019, 24 p. <https://www.wttc.org/>
13. Zámková, M., & Prokop, M. Comparison of Consumer Behavior of Slovaks and Czechs in the Market of Organic Products by Using Correspondence Analysis. *Acta Acta Universitatis Agriculturae et Silviculturae Mendelianae Brunensis*. 2014, Vol. 62, No. 4, pp. 783-795. ISSN 1211-8516.

Primary Paper Section: A

Secondary Paper Section: AK

VALUE ANALYSIS OF COMMUNICATION IN THE MYTHOLOGICAL SPACE OF A MULTIPOLAR WORLD

^aVIKTOR SIDOROV, ^bIGOR BLOKHIN, ^cSERGEY KURUSHKIN, ^dSVETLANA SMETANINA

*Saint Petersburg State University, Universitetskaya Emb., 7/9
Saint Petersburg, 199034, Russia
email: ^avsidorov47@gmail.com*

Abstract: The relevance of the present study is determined by the importance of mythologization in modern global processes the formation of a multipolar world presents an example of. Each of the forming "poles" requires a mythological basis comprising and establishing its specific historical mission and worldview uniqueness. The deployment of previous narratives and the creation of new ones spreading in the media space and applying for mythological quality presents an important argument in favor of the "pole". The axiological approach to the study of myths in modern media involves referring to value analysis as a method of studying journalism. The study is based on the world-systems methodology that includes cross-cultural analysis. A study of relevant political mythology is carried out on the example of media coverage of the help provided by Russia to Italy in the conditions of the COVID-19 pandemic. To obtain empirical data, the procedure of content analysis of media texts was used. The analysis of the state of media was performed on the empirical basis of materials provided by the InoSMI information and analytical portal and other leading Russian media. The following points are substantiated in the article: mythogenesis occurs in current political practice that can result in two mutually exclusive outcomes: further development of the myth of European solidarity, the cultural and historical community – the continuation of the historical myth, or its destruction – the realization of the operational myth. The analyzed texts demonstrate an apparent polarization of the forming mythological concepts fixating the images of Russia as an assistant selflessly helping those in need and a political actor seeking to realize their geopolitical interests at the expense of Italy. The semantic cluster groups of "Gratitude", "Independence", "Cultural interaction and solidarity", "Safety", and "Welfare" were identified based on mythological concepts. Materials of the present article present practical value to political functionaries and journalism theorists.

Keywords: myth, mass communications, values, concepts, journalism, identity, multipolarity

1 Introduction

A. Camus had an interesting assertion: "Myths are created to draw our imagination" [1, p. 306]. Here we will reflect on the content of that imagination. We will likely find there something a person lacks in their life currently, what they want to dispose of today and obtain tomorrow. In other words, the power of imagination activates the world of a person's values in mastering cultural and political reality in the process of mythogenesis based on personal mythological ideas. "These ideas create a unique historical and national tone of political culture and, in a sense, its peculiar internal quality" [2, p. 7]. In this way, a myth reflects reality, but here we should also agree with Iu. Lotman, "the world seen through the eyes of mythological consciousness must be seeming" [3, p. 526]. Thus, mythological constructions of an individual comprise two aspects one of which matches the experience of everyday perception of reality and the other corresponds to something imagined and even harmful to the human mind. In this reasoning, we return to the long-known interpretations of myth-making in human history. This appears to be no coincidence since in everything "concerning modern political mythology it becomes elusive as an object of analysis" [2, p. 19].

Nevertheless, in our study, we aim to identify not only the established facts of political mythology but also the process of mythogenesis itself. We shall derive from M. Eliade's formula – "A myth is not inherently good or bad <...> Its function is to <...> provide meaning to the world and human existence" [4, p. 139]. In periods of social crises, the need to "give meaning to the world" is particularly acute. This determines the fact that "political interests guide the cultural processes and set the version of humanity" [5, p. 17]. In turbulent times, a person follows the mythological constructions of the past exclusively instinctively, unconsciously, they do not go beyond the circle of their culture and its values; in a rational sense, an individual mostly reflects on the recently constructed political stereotypes as a platform for *contemporary* myths: "Although the tendency to consider the past as an important resource <...> can be considered a constant in modern politics, we cannot but admit that in the 20th century, especially in the second part of it, the

practices of handling this resource have significantly evolved. Recent history has become a significant part of personal experience for many people" [6, p. 12].

Modern mythogenesis have derived to a large extent from the new state of mass communication channels that came as a result of the technological revolution in mass information processes that took place at the turn of the century. This revolution has multiple sociocultural consequences. In this case, we will highlight the primary one – the opportunity to preserve even the smallest traces of media activity of a person in cultural memory. This opportunity was ensured by the mass application of the newest information carriers and the means of information distribution, the network organization of the media interaction of individuals, social groups, and communities, as well as the opening of gateways for their global inclusion in the information interaction in society as the subjects of mass communications. "Once created, a political text becomes a part of an almost infinite process of political communication <...> Due to the fundamental features of social communication both the author and the text recipients find themselves in a situation of constant cognitive and interpretative uncertainty and various situational factors not only do not distort but contribute in every way to the construction of meaning and its further interpretation, create the basis necessary for it" [7, p. 40]. In the logic of what has been said, we shall imagine the idea of how the emergence and functioning of a political myth in the current media field occurs.

When analyzed in the cultural space, a myth presents the point of concentration of values and meanings. Value presents a substantial component of the structure of a myth expressing a certain constant. Meaning can be defined as a societal structure that comprises values and determines the dynamics of culture and evolution of the myth. The speculative idea of media space as a separate phenomenon of modern culture also allows using the notion of a myth as a core component participating in its value structuring and impacting the dynamic processes of meaning circulation.

The relevance of the present study is determined by the significance of mythologization in modern global processes the formation of a multipolar world presents an example of. Each of the forming "poles" requires a mythological basis comprising and establishing its specific historical mission and worldview uniqueness. In relation to personality, the mythology of the "pole" creates special forms of identity that require media confirmations through corresponding means and channels and media support via stimulating the communicative activity of the carriers of such forms. The deployment of previous narratives and the creation of new ones spreading in the media space and applying for mythological quality presents an important argument in favor of the "pole".

2 Methods

We must highlight that here we consider the modern state of the information space, therefore, we will allow ourselves to indicate two types of mythological constructions functioning in it: 1) historical myths rooted in social memory and having a high cultural status due to its reproduction in the artistic environment of an ethnos; 2) operational myths to relevant sociocultural practice and primarily reflected in mass media and everyday consciousness of society. We, therefore, highlight myth-making related to the core of culture [8, p. 10-11] and the creation of myths based on modern life. The levels of mythogenesis are undoubtedly closely related to one another, however, the modern construction of myths will be examined as transient.

The detection of contemporary mythogenesis requires either the analysis of an extensive empirical field or the identification of a political and media situation where the various characteristics of the existence of political myths of the modern information space

can be detected in a relatively narrow segment of the media sphere. In the case of the present study, the authors preferred the second option of analysis.

The media space can be described as the totality of systematically structured elements (institutions, organizations, and statuses) and the media fields they produce (functions, roles, and effects) or as a sphere of values and meanings produced by the textual and contextual semiotic structures. What is proposed as the model of analysis is text as a system comprising values and meanings as its elements and the context as a set of communicative actions arising in relation to the text. The context, therefore, includes both the information sphere, the functions of media, and the effects provoked by the publication of the text.

The objective of our study is the identification of contextual contradictions emerging in the media space and the definition of value and semantic incompatibilities impeding effective communication based on these contradictions. The object of the study is presented by incompatibilities emerging in the process of identification and assimilation of values.

The theoretical sources of the research are primarily presented by the studies on axiology of journalism and mass communication [9-11]. To define the operating concepts and specify the methodological prerequisites we referred to the studies in the fields of myth theory [12-14] and structural semiotics [3, 15]. We also deployed the positions and ideas of theorists of the world-system approach related to the analysis of historical and social processes [16, 17].

The evolution of the notion of the "world-system" originates from the definition of "world-economy" [16, p. 14], the essence of which is found in the autonomy of and organic unity based on internal connections and exchanges. "World-economy" as a capitalist system was interpreted by I. Wallerstein and was included in the group of "world-systems" along with "world empires". According to Wallerstein, the world-system is a "territorial and time space comprising many political and cultural units but, at the same time, presenting a single organism the entire activity of which is guided by unified systemic rules" [17, p. 75]. Capitalist world economy with a claim for global dominance and sociocultural universalism historically became the first virtually alienated form of human existence. In the New Age period (which starts from the 18th century in Russia) world-empires also acquire the qualities of world-systems with their own unique virtually alienated forms (which include journalism). The issue faced by every world-empire in the process of its evolution into the state of a world-system lies in a double-sided conflict between tradition and modernity on the one side and global and universal world-economy and its own world-systemic periphery on the other. Currently, the world-system methodology is developing within the framework of the concept of multipolarity – an explanatory model of the transition from a unipolar world (the dominance of the world economy) to the coexistence of macro-regions (world-systems).

The global world economy is based on the myth of individual liberty of a person, which, in turn, presents a foundation of liberal ideologies and identity understood as personal autonomy. Every world-system is forced to produce (or historically reanimate) the myths ensuring its integrity and value consistency. Identity in world-systemic relationships is viewed as a form of membership of an individual in the community of a "pole" of the world-system. The formation of this identity type involves multiple agents among which is the world-systemic media that not only execute the myth translation function but are themselves based on the "attitude towards media as a national and cultural value" [10, p. 319].

The axiological approach to the study of a myth in modern media involves value analysis as a method of journalism research [18, p. 222-232]. The present study is based on the world-system methodology that includes the application of

cross-cultural analysis. To acquire empirical data, we deployed the procedure of content analysis of media texts.

Deriving from the statements described above, we referred to the study of a specific situation and chose the media coverage of Russian humanitarian aid provided to Italy for the fight against the coronavirus infection (COVID-19) in 2020. According to TASS, "from March 22 till the morning of March 25 15 airplanes transporting about 11 Russian military virologists and epidemiology specialists of the Ministry of Defense of the Russian Federation, eight medical and nursing teams, equipment for the diagnosis and disinfection landed in Italy. Russian specialists work in an area in North Italy that has suffered from the coronavirus pandemic the most – the city of Bergamo" [19]. An unusual situation has formed – Russian military transport aircrafts landed in a NATO country in close proximity to the important bases of this military-political bloc; moreover, the difficulty of handling this fact was caused by the fact that it was military rather than civilian epidemiologists who arrived to help, and the accusations of them previously working in Syria began to spread quickly [20]. As is widely known, the policy of Italy as a member of NATO regarding the internal conflict in Syria is diametrically opposite to Russian. Moreover, in the most significant European media and, consequently, in public opinion there is a long-established myth of a "dictator Putin" and the "authoritarian Russia". Therefore, the fact of Russian medical professionals' arrival to Italy served as a trigger for cognitive dissonance that became the core of political myths produced by this situation.

In the framework of world-system analysis, this case presents an object of special interests: a semi-peripheral (according to Wallerstein's understanding) country provides help to a capitalist core member country. Understanding of the sociopolitical situation prevailing in the world affected by the pandemic and the attempts of analyzing the countries' political strategies and specific actions as the stages of implementation of these strategies lead to the intensification of meaning flows circulating in the world-systemic media.

It can be concluded that there is a reflective transition from the first Ockhamian intentions (things existing reality) to the second Ockhamian intentions (concepts about these things) taking place. Along this transition, mythological concepts accumulate meanings and the generation of forms of spreading these concepts occurs. In an attempt of making sense of the role of an author in these processes, we inevitably conclude their transition from an intention as an orientation of consciousness towards a certain object towards a communicative intention contributing to the representation of specific concepts in the text.

Referring to the corresponding materials of the InoSMI¹ information and analytical portal allows us to analyze this non-standard media situation. The practice of this portal involves the systematic publication of fragments of articles from leading world media on relevant topics with an opportunity to access the original – the full text of the source, which allows identifying the predominant world press tendencies in covering political, economic, cultural, and sports events. We must note that the InoSMI portal presents a project of RIA "Novosti" and is therefore not free in its conceptual focus on the search for various materials about Russia in world media. However, the sample of materials about Russia is representative in this way: foreign publications about Russia selected by InoSMI for publication contain information allowing analyzing the conditions of political mythogenesis.

We also selected 74 pieces of material from Russian media ("Meduza", "Izvestia", "Delovoi Peterburg", "Novaia gazeta", "Vzgliad", RIA "Novosti", "Gazeta.ru", "Lenta.ru", RBK, "Tsargrad", TASS, "Rossiiskaia gazeta", "Moskva24",

¹InoSMI is a portal of analytical reviews undertaken on an ongoing basis. It is owned by the Russian Information Agency (RIA) "Novosti" and financially supported by the Federal Agency on Press and Mass Communications of the Russian Federation (Rospechat).

"Kommersant", "RussiaToday", "Ekspert", "Vesti", "Rosbalt", "Moskovskii komsomolets", "Komsomolskaia pravda", "Pervyi kanal"). The choice of media was shaped by the need to exclude the ideological and genre bias from the analysis of publication texts. Therefore, our sample comprised news agencies, actual online media, online versions of traditional media, print media, television channels, as well as media with a pronounced liberal ideological orientation (for instance, "Novaia gazeta"); state-owned media ("Rossiiskaia gazeta"); Russian media based abroad ("Meduza"), conservative ("Vesti"), religious ("Tsargrad"), and business ("Delovoi Peterburg", "Kommersant") media.

The chronological scope of the study: March 21, 2020 (first reports indicating Russia was going to send humanitarian aid to Italy to combat COVID-19) – May 1, 2020.

Content analysis was organized in the following manner. In analyzing the pre-selected texts, we identified the appearing lexemes in semantic clusters corresponding to a certain mythological concept. We then attempted to evaluate the degree to which the mythological concept affected the state of the myth in the Russian media sphere and ultimately the formation of contextual contradictions arising in Russian media space.

3 Results and Discussion

We will mark the publications selected from the InoSMI portal as media episodes composed of articles by regular authors of newspapers in Italy, Great Britain, France, Poland, China, Egypt, Germany, Finland, Denmark, the USA, etc., responses/reviews of the responses of readers of these publications, and "comments" of InoSMI readers. (However, in one part of the study of materials of the portal the most recent materials of Russian origin were not taken into account due to being incompatible with the conditions of the objective of researching mythogenesis in the countries of the EU).

In the period ranging from March 21, 2020, to April 21, 2020, the authors of the InoSMI portal located 280 media episodes there publicists, correspondents, and politicians discussed the help provided to Italy by Russia:

- 1) in every second publication of the sample (taken as the general population according to the object of the study) the fact of humanitarian aid is used as a media event to build the author's conception of the political state of modern Russia on;
- 2) in one-third of the sample of publications the "example of Italy" serves as an argument in the discussion of the future of the EU after the pandemic.

In the first case, mythogenesis can only be identified as the continuation of political myth-making about Russia, the authors of such publications are typically the largest actors in the media sphere; in the second case, the political agenda of the day is examined mostly based on already existing myths about the history of Europe. This part of mythogenesis appears to be primarily linked to the core of cultures of countries where the examined newspapers and publications are posted.

In the context of resolving the next ensuing objectives of the study a sample of 15 media episodes (5% of the general population) obtained through secondary sample analysis and compiled using the search function of the InoSMI portal by "help", "coronavirus", and "Italy" keywords presents the most interest. The sample included only those articles and reader opinions that accentuated the political views/values of their authors related directly to the participation of Russian military doctors in the fight against the Apennines pandemic. Compilations of readers' opinions that demonstrate the contradictory structure of the audience's values and presents a base of operational mythogenesis of current political practice present special significance.

We compiled the opinions of readers of newspapers published in Italy [21], Poland [22], and Bulgaria [23, 24]. The statements'

authors simultaneously belong to the general European audience and the audiences of particular EU member countries. In accordance with this gradation, it was found that the fact of cooperation of Italy and Russia in the fight against coronavirus lead to the emergence of a range of relevant mythologemes based on a certain interpretation of European solidarity values. We conducted a new analysis of the selected opinion compilations focused on the research questions allowed to identify 32 typical reader statements of readers who belonged to the EU member countries and related to the declared European solidarity values.

Not the most significant portion of these statements was composed of phrases where solidarity in the time of hardship was interpreted in a wider sense – both within and outside the EU. The image of Russia accompanied by confidence in the ideas that "Together we will win", "Help is better than inaction", "There are facts in favor of the Russians" [21], "A noble gesture of Russia" [22], "Reciprocity is needed" [23; 24] was only found in nine reader statements (7% of the whole sample of reader responses). In contrast, we identify 11 statements combined into these most clearly expressing anti-Russian rhetoric:

- distrust of Russian doctors is expressed – "their identity cannot be established, they fought in Syria" [21];
- confidence in the aggressive nature of Russia and its leadership is demonstrated – "Putin cheats" [21], "Putin is a criminal" [23], "Russia is an aggressor" [24].

However, the number of readers' opinions following the political myths of the history of the united Europe that have been forming for the past two decades is also symptomatic – there were only five of those (4%). This finding can indicate that in pandemic conditions the voices of dedicated supporters of the EU are heard more rarely than usual which is consistent with Noelle-Neumann's theory suggesting that a person can experience "fear of isolation" when they find themselves in conditions where they seem to be in the minority. This presents "the driving force unwinding spiral of silence" [25, p. 36]. This assumption can be supported by the fact that half of the positions expressed by the readers are extremely difficult to qualify strictly in any way. Again, in full accordance with the "spiral of silence" theory, this part of the readers has yet to go through a stage Noelle-Neumann characterizes as "the last-minute shift" [25, p. 68]. The conditions for this shift, however, are not present yet.

The adherence of the thinking part of the readership to the political myth of European solidarity could not but unfold in their expression of concern/critique of the slowness of Western leaders in the context of medical assistance to the people of Italy coming from Russia, China, and Cuba: "What did the Germans or French do for us?", "The EU deviates from the solidarity principle" [21]; "Russia is helping and where is the USA?" [22]; "The EU may end up at the graveyard of history" [23]; "The EU is compromised" [24]. As expected, there are few critical statements – 8% of the entire sample.

Finally, in statement compilations, we indicate diametrically opposite positions originating equally from the myth of solidarity of the European countries. In the first case, there are calls for media actors to "temper the anti-Russian paranoia" [21]; "Those who write about spies rather than help are idiots", "The world needs reciprocity" [24]. In the second case, adherence to the myth of solidarity leads to aggressive conclusions: "Russian doctors in Italy are "the little green men"" [22]; "Exterminate Putin's aggressors!", "Medical assistance is a hybrid war" [24]. Characteristically, no aggressive statements were observed in the Italian audience.

Verdicts expressed by the audience of readers primarily derive from social reality and, naturally, from the political views cultivated in the mass media, in this case – the ones related to the ideology of the EU. The range of identified media episodes includes a certain number of newspaper publications written by regular employees of well-known newspapers. Their political views are familiar to readers and their evaluations of the current

events are predictable. Thus, the articles of these authors are within the formed mainstream of the "publisher – author – reader" media symbiosis. Examining the content of articles included in the study sample, we can easily identify the outlines of the ideological link between the newspaper and its audience.

For instance, the Italian "La Stampa" and the Swiss "Blik" are convinced that the doctors who arrived in Italy previously worked in Syria and no help can be expected from them, as they can be unable to save patients due to being experts in biological weapons [20; 26]. The Danish "Jyllands-Posten" states ironically: Putin "took on the role of savior of the world and sent aircraft with aid in the form of medical equipment to Serbia, Italy, and the USA 'from Russia with love'. <...> But the grim reality has caught up with the authors <...> of aid campaigns intended as a goodwill campaign on behalf of Putin and his sanctioned country" [27] and "La Stampa" clarifies that today "Russia, being in an emergency situation due to coronavirus, helps us guided not at all by the extremely limitless kindness of its people and the traditional friendship connecting the two countries, therefore, the fate of Italy is at stakes" [20]. "Putin is invading", "Medical equipment supplies from Russia are useless" [28], the Russian military "is two steps away from the NATO military bases" [26] – those are the anxieties shared by many European media.

A Russian politologist O. A. Belykh notes that "the direct relationship between the tendentiousness of an article and the growth of emotionality and aggression in its discussion" [29, p. 41]. The positions of authors of newspaper articles and the opinions of their readers on the help of Russia to Italy in the fight against the pandemic are directly affected by the dominance of the political myth of the union and mutual help of the EU countries. While the mythologeme itself is not questioned, the evaluations of its stability vary greatly. Therefore, the mythogenesis takes place in current political practice, which can result in two mutually exclusive outcomes: either further development of the myth of European solidarity, the cultural and historical community – the continuation of the *historical* myth, or its destruction – the realization of the *operational* myth. It is possible that, instead of the operational myth, a bifurcation will emerge within the mythogenesis – either the historical convergence with Russia in the renewed world or the inevitable geopolitical confrontation with it. The final answer will probably be provided by half of people that have not made their decision yet, the one we discovered during the analysis of readers' responses. However, the "last-minute shift" is only prognosed at the moment.

In the process of analyzing the Russian media, we identified the following groups of semantic clusters and mythological concepts (Table 1). We must note here that the repetition of lexemes responsible for the formal illustration of the concept is determined by the varying interpretations of it by different authors. Therefore, the attribution of a certain lexeme to a semantic cluster and a mythological concept was performed at the contextual level and the level of semantic relation of a lexeme to other lexemes in the text under examination. The overall number of materials exceeds the number of examined texts since many of them contained more than one concept ("Russia as a rescuer and a friend", "Russia as a political actor and a tormentor", "Russia as a friend and an economic partner", etc.). The manner in which the concept unfolded forms the poetics of the myth in its narrative nature.

Table 1: Groups of semantic clusters and mythological concepts

Semantic cluster/mythological concept	Tone	Concept deployment lexemes	Number of materials containing mythological concepts
Gratitude/"Russia as a rescuer"	Positive	Italians, help, magnanimity, generosity, upscale, flag, betrayal	27
Cultural interaction and solidarity/"Russia as a friend"	Positive	Italians, the European Union, borsch, home, victim, friends, respect, Russophobia	18

Welfare/"Russia as an economic partner"	Neutral	Italy, the European Union, money, sanctions, value (material), crisis (economic)	11
Independence/"Russia as a political actor"	Negative	Italy, the USA, the European Union, benefits (political), resentment, indignation, trust, trick, geopolitics, diplomacy	24
Safety/"Russia as a tormentor"	Negative	Italy, media, LaStampa, futility, insolvency, useless, profit, discontent	17

The first two clusters ("Gratitude" and "Cultural interaction and solidarity") contribute to the formation of a positive image of Russia, reinforce positive assessment attitudes in the audience, and have a positive tone. The "Welfare" cluster can be labeled as contextually neutral: in the analysis of statements related to gratuitous or beneficial nature of the help provided by Russia we encountered various evaluations ranging from the justification of the principle of reciprocated assistance to the demonization of Russia as an open rival of the EU in general and Italy in particular. Finally, the last two clusters ("Independence" and "Safety") contribute to the formation of a negative image of Russia and its reinforcement in the media discourse. Further on, we will examine these clusters in greater detail.

The analyzed texts demonstrate an open polarization of the forming mythological concepts fixating either the image of Russia as an assistant selflessly helping those in need or the image of Russia as a cunning political actor seeking to realize their geopolitical interests at the expense of weakened Italy. An observation important to note here is that in the formation of a positive image of Russia the authors typically use the "Italians" lexeme, while the negatively toned mythological concepts are predominantly formed with the lexeme of "Italy". A concept contributes to the deformation of the unity of a state and its people in the consciousness of the audience, there is a sharp distinction between the people who are positive towards Russia and the government that is negative towards it. A comparison can be made: "Italians thank Russia for help and scold the EU" [30] versus "Italy demands apologies from Russia" [31].

Aside from the "Italians" lexeme, the "Gratitude" cluster contains several unexpected variations of positive image formation. A positive image of Russia is often built at the expense of a simultaneously forming negative image of the EU that did not come to the aid of Italy at a difficult moment. This aspect is highlighted through the incorporation of mentions of state symbols into the concept: "As a token of gratitude, Italians remove the EU flags from the streets and hang Russian flags in their place" [32].

In the "Cultural interaction and solidarity" cluster, it is worthy to highlight several materials telling about borsch cooked by Italians for Russian doctors: "Italians tried to thank their foreign colleagues and cooked borsch as well as they could. Beside it, they put a sign saying 'Sorry, it's our first time'" [33], "Many users considered the Italians' move touching. In the comments, borsch was called a sign of respect and a beautiful gesture" [34]. We must note, that the "Italians" lexeme is actively used here as well.

The "Welfare" cluster is attributed to the neutral type since it contains both the diametrically opposed assessments of Russia's economic interests in Italy and a wide range of neutral materials without pronounced evaluations. Moreover, the formation of this cluster and the corresponding mythological concept was promoted by Vladimir Putin himself who said the following about Russian help to Italy: "This is not a one-way street. In Italy, we purchase pressure sensors without which the production of ventilators in Russia would be impossible" [35].

The mythologization of Russia as a political actor aggressively standing up for its interest is still common in Russian media discourse – especially in its online part. The actively used

lexemes include the names of countries and supranational entities (Italy, the USA, the EU): "In her interview to the Tgcom 24 news channel on March 26, Simona Viola, the president of the pro-European liberal party +Europa, noted it is difficult for her to imagine Russia simply helping without any secret motives. Why the military? Why not civil assistance? <...> The politician noted that Russia wants to destroy the EU" [36].

Finally, the Russian media actively spread the word of the Italian newspaper "La Stampa" that, referring to anonymous sources in the Italian government, called Russian help 80% useless. This largely contributed to the formation of a mythological concept that can be indicated as a continuation of the previous one: here Russia is viewed not just as a political actor who actively stands up for its interests, but as a tormentor that provided no actual help to Italy. Russian media either use the "Italy" lexeme, or directly state the source of the information – "La Stampa" newspaper as if attributing the responsibility of the formation of this concept either to the country as a whole or to the specific organization.

It is necessary to add that the nomination dominant in all the analyzed publications was the one that served as a media event – the help of Russian military doctors. It is quite apparent that the background/context for the mythologization of Russia as a political actor was formed by the stable myth of the aggressive foreign policy of Russia. However, while the foreign press, as cited above, ask a rhetorical question of why the provided help was military rather than civil reinforcing the provocative meaning of the situation, Russian media are also focused on the demythologization strategy. This is the way in which materials on partnership in the fight against the dangerous virus appear: phone conversations between the Russian Defense Minister Sergei Shoigu and his Italian counterpart Lorenzo Guerini, a consultation in Rome with the chief of the interspecific operational command of the General Staff of the Armed forces of Italy, Lieutenant General Portolano on the issue of participation of Russian military specialists, machinery, and equipment in the fight against the infection [37], the period of practice for Russian military doctors working in Bergamo that would allow them to "compare the approaches, treat patients in accordance with Italian laws and regulations, draw up documentation" beforehand [38]. The purity of intent is emphasized by the details from the stories of the doctors themselves about their completely peaceful life: buying yogurts, juices, vitamins in a pharmacy to maintain strength after hard work. Each of these "sorties" into the city is accompanied by emotional remarks from Italians who recognize Russian doctors by their military uniforms: "Grazia, Russe!" [38].

In general, the real event of humanitarian aid to Italy from Russian military doctors became an impetus for the formation of an intense dissonant media narrative. Having turned into text, this event "became available for experiencing multiple times – for participation on the part of those people who were not its direct executors" [39, p. 23]. The uniqueness of this narrative is found in the fact that it is "patchworked" from the individual experience of people who apply their own evaluation criteria for the assessment and mastery of political reality sometimes being captivated by imagination as a constant companion of every mythologized consciousness.

Appealing to the value consciousness as "a certain horizon of consciousness that allows a person to establish their value relations with the world and become a subject of learning the value qualities of existence" [40, p. 66], a mythologized concept executes its function of destination: it is directed towards a particular portion of the audience forming and reinforcing its cognitive distortions expressed, in particular, in the formation of subjective beliefs (as well as prejudices and stereotypes) in relation to "other" and "alien" world-systems.

A mythological concept is realized through its continuous (extended in time) representation in multiple forms and, at the same time, remains unstable and easily abolished under the effect of historical processes, which is promoted by its open

nature. As was rightly noted by Roland Barthes, a concept is "in no way an abstract, sterile entity, but rather a condensate of unformed, unstable, foggy associations; their unity and coherence depend primarily on the function of the concept" [13, p. 82].

I.V. Erofeeva suggested using the concept of "mediatext axiosphere" to describe the space accumulating spiritual (mental) values: "the construction of this sphere should be examined <...> at three levels: the pragmatics of axiosphere, the syntactics of axiosphere, and the semantics of axiosphere. The problem of mediatext axiosphere that includes the issues of the functioning of major concepts and archetypes of a national worldview in the media is directly related to the genre (postmodern) specifics of the existence of the spiritual sphere, the structural (ritual) components of its organization, and the technological instruments of affecting" [11, p. 278]. The interpretation of substantial values and the myth itself as a communicative system or a message is expressed in the definition provided by R. Barthes: "From here it follows that it can be neither a thing nor a concept or idea; it is a form, a way of designating" [41, p. 265]. In Barthes's description, a myth contains a form of the "designated" and the meaning of the "designating" which are in constant playful interaction. A world economy that, aside from the dominant myth of the individual liberty of a person, declares the right for mythological interpretation prioritizes the external, the formal, and the aesthetic. Such an interpretation forms the structure of a myth fixating its fluctuation, temporality, and conditionality. This relation to a myth and its value core presents a significant communicative advantage of the global world economy as it allows to destroy myths and devolve world-system values based on personal representations and the denial of absoluteness per se.

In journalism, as a virtually alienated form of a world-system, the contradiction of mythological interpretation is expressed in the problem of the objectivity of an author's statement and their product in general. O. F. Smaznova identifies two forms of the modern mythological: the "big" (or the native) myth as an ideally typical model of worldviewing and "a mythoid as a mythical story or image endowed with an exclusively personal philosophical meaning, created in an individual mythological impulse, but capable of acquiring a sociocultural, supra-individual meaning – a phenomenon that is not comprehended ideally typically, but rather biographically" [14, p. 319]. In a journalistic text, this contradiction is resolved through achieving conformity between content and genre forms and in context this issue is settled through coordination of social and individual meaning. The problem of objectivity acquires a certain shape for a communication researcher: "it is obvious that the true essence of a myth can be seen through 'getting used' to the forms of the mythological activity of consciousness, but then the myth is lost as an object and appears as existence" [15, p. 192].

The dense circumnuclear sphere of the world presents an integrated individual reality of images of reality based on personal ancestral experience, experiences, and memories. The essence of a myth as the reality of the world, the object of direct perception is most clearly expressed in its circumnuclear structures [12, p. 121]. The external sphere of a myth in the media sphere encounters the totality of virtual flows impacting the dense sphere and the core with the goal of correction or destruction. One of the authors of the article describes such a communicative process through the categories of the opposition between a value and an anti-value: "The moral alienation of a person and even entire social groups is not so much of a basis for abandoning the production of values rather than a favorable environment for replacing it with anti-values. For this reason, it must be said very clearly: openness and democracy of the press can no longer be a filter preventing the media sphere from being penetrated by both the explicit denial of values and the meanings that appear under the guise of their reinforcement" [9, p. 36]. In the structures of world economy, the cultivation of openness and democracy creates the conditions for the devaluation of the dominant myth about the freedom, which inevitably falls into its own trap of relativism, is questioned, criticized, and ridiculed.

4 Conclusions

Appealing to the values of their audience, the world-systemic media use mythological concepts that, in turn, are formally represented through the use of corresponding lexemes. The identifies clusters and the corresponding mythological concepts indicate the significance of the value of society polarization reflected in media. These concepts may co-exist and even interact but are also capable of hindering effective communication through the creation, fixation, and promotion of conflicting political myths in the media sphere.

The key issue of impact is acquiring communicative compatibility allowing the effective modification of mythological structures. The process of achieving communicative compatibility results in the structuration of world-systems into "ours", "other" and "alien" ones occurring as a result of the process of achieving communicative compatibility reflects in the media reproduction of mythological concepts engraved in the texts by authors and activating the sequence of value associations.

The world-systemic media establish connections between myths creating unified and consistent mythology, informationally support the myths that are already present in the public consciousness and participate in the structuring of culture. The space of a myth includes a core of the myth-making process that presents the world as meaningful, – the structure and periphery where communicative interactions take place, including the reflection of aggression that destructs the integrity of the world-system of elements. Preservation of integrity is a primary objective of the world-system, and the execution of this objective presents the key function of the world-systemic media ensuring the accumulation of values and the circulation of meanings.

Literature:

1. Camus, A.: Mif o Sizife. Esse ob absurde [The myth of Sisyphus. An essay on absurd]. In: *Sumerki bogov* (pp. 222-318). Moscow: Politizdat, 1990.
2. Shestov, N.I.: *Politicheskii mif teper i prezhd. [Political myth now and before]*. Moscow: OLMA-PRESS, 2005.
3. Lotman, Iu.M.: Mif – imia – kultura [The myth – the name – the culture]. In: *Semiosfera* (pp. 525-543). Saint Petersburg: "Iskusstvo-SPB", 2000.
4. Eliade, M.: *Aspekty mifa [Aspects of a myth]*. Moscow: Akademicheskii proekt, 2014.
5. Eagleton, T.: *Ideia kulture [The idea of culture]*. Moscow: Higher School of Economics publishing house, 2019.
6. Malinova, O.Iu.: *Aktualnoe proshloe: Simvolicheskaia politika vlastvuiushchei elity i dilemmy rossiiskoi identichnosti. [Relevant past: The symbolic policy of the ruling elite and the dilemmas of Russian identity]*. Moscow: Politicheskaiia entsiklopediia, 2015.
7. Fidria, E.S.: Faktory i logiki rekonstruirovaniia smysla politicheskogo teksta v usloviakh kognitivnoi i interpretativnoi neopredelennosti [Factors and logics of reconstructing the meaning of a political text in the conditions of cognitive and interpretative uncertainty]. *Polis* 2019; 4: 40-56.
8. Kantor, M.K.: *Istoriya protiv progressa: opyt kulturno-istoricheskoy genetiki [History vs. Progress: The Experience of Cultural-Historical Genetics]*. Moscow: Nauka, 1992.
9. Sidorov, V.A.: Mediasfera kak tsennostno obrazuiushchaia substantsiia [The media sphere as a value-forming substance]. *Nauchnye vedomosti. "Gumanitarnye nauki" series* 2015; 18(215): 31-37.
10. Korkonosenko, S.G.: Problema tsennostnogo potentsiala sovremennoi otechestvennoi zhurnalistiki [The problem of the value potential of modern Russian journalism]. *Vestnik of the Lobachevsky University of Nizhny Novgorod* 2012; 1(2): 318-325.
11. Erofeeva, I.V.: *Aksiologiia mediateksta v rossiiskoi kulture (tsennostnaya refleksiiia zhurnalistiki nachala XXI veka) [Axiology of media text in Russian culture (value reflection of journalism at the beginning of the 21st century)]*. Chita: Transbaikalian State Humanitarian and Pedagogical University, 2009.
12. Losev, A.F.: *Dialektika mifa. [The dialectics of a myth]*. Moscow: Mysl, 2001.
13. Barthes, R.: Mif segodnia [Myth today]. In: *Izbrannye raboty: Semiotika. Poetika* (pp. 72-130). Moscow: "Univers", "Progress" publishing group, 1994.
14. Smaznova, O.F.: *Vremia i etos mifa. Dialektika mifotvorchestva v russko kulture XIX–XX vekov. [Time and ethos of a myth. The dialectic of myth-making in Russian culture of the 19th – 20th centuries]*. Velikiy Novgorod: Yaroslav-the-Wise Novgorod State University, 2007.
15. Baryshnikov, P.N.: *Mif i metafora: Lingvofilosofskii podkhod. [Myth and metaphor: Linguophilosophical approach]*. Saint Petersburg: Aleteia, 2010.
16. Brodel, F.: *Materialnaia tsivilizatsiia, ekonomika i kapitalizm. XV–XVIII vv. Tom 3. Vremia mira. [Civilization and Capitalism, 15th–18th Century. Volume 3. The Perspective of the World]*. Moscow: Progress, 1992.
17. Wallerstein, I.: *Mirosistemnyi analiz: Vvedenie [World-systems analysis: an introduction]*. Moscow: "Territoria budushchego" publishing house, 2006.
18. Sidorov, V.A. (ed.): *Zhurnalistskaia Obshchestvo. Tsenosti: Kollektivnaia monografiia [Journalism. Society. Values: Collective monograph]*. Saint Petersburg: Petropolis, 2010.
19. Rossiiskie voennye mediki vylechili v Bergamo vosem patsientov s koronavirusom [Russian military doctors have cure eight patients with coronavirus in Bergamo]. *TASS* 14.04.2020. Retrieved June 1, 2020 from: <https://tass.ru/obshchestvo/8235477>
20. Agliastro, G., Mastrolilli, P.: Soedinennye Shtaty i Rossiia: sopernichestvo v oblasti gumanitarnoi pomoshchi radi ukrepleniia geopoliticheskogo vliianiia v drugikh stranakh [The United States and Russia: humanitarian aid competition for strengthening geopolitical influence in other countries]. *La Stampa* April 21, 2020. Retrieved June 1, 2020 from: <https://inosmi.ru/politic/20200422/247305680.html>
21. Moskva otpravliaet v Italiu virusologov, voennykh vrachei i meditsinskoe oborudovanie [Moscow sends virusologists, military doctors, and medical equipment to Italy]. *La Stampa* March 22, 2020. Retrieved June 1, 2020 from: <https://inosmi.ru/social/20200324/247111446.html#comments>
22. Koronavirus v Italii: Rossiia obeshchaet pomoshch [Coronavirus in Italy: Russia promises help]. *Interia (Poland)* March 22, 2020. Retrieved June 1, 2020 from: <https://inosmi.ru/social/20200323/247108028.html>
23. Putin ne priachetsia ot virusa, kak lidery ES [Putin does not hide from the virus, unlike the EU leaders]. *Fakti (Bulgaria)* March 23, 2020. Retrieved June 1, 2020 from: <https://inosmi.ru/politic/20200323/247111158.html>
24. Rossiiskaia pomoshch Italii — gibridnaia ataka [Russian assistance to Italy – a hybrid attack]. *Dnevnik (Bulgaria)* March 3, 2020. Retrieved June 1, 2020 from: <https://inosmi.ru/politic/20200324/247118109.html>
25. Noelle-Neumann, E.: *Obshchestvennoe mnenie. Otkrytie spirali molchaniiia [Public opinion. Discovery of the spiral of silence]*. Moscow: Progress-Akademiia, Ves mir, 1996.
26. Müller, M.: Rossiiskie voennye otpravilis na front borby s koronavirusom [The Russian military went to the front of the fight against coronavirus]. *Blick* March 27, 2020. Retrieved June 1, 2020 from: <https://inosmi.ru/politic/20200327/247138467.html>
27. Ullerup, J.: Koronavirus mozhet prevratit Moskvu v novyi Niu-Iork [Coronavirus can transform Moscow into a new New York]. *Jyllands-Posten* April 16, 2020. Retrieved June 1, 2020 from: <https://inosmi.ru/social/20200421/247297606.html>
28. Iakoboni, I.: Telefonnyi razgovor mezhdru Konte i Putinyim o koronavirusse vstrevozhil pravitelstvo: "Vmesto pomoshchi v Italiu priezhaiut rossiiskie voennye" [A telephone conversation between Conte and Putin about the coronavirus alarmed the government: "Instead of help for Italy, the Russian military is coming"]. *La Stampa* March 3, 2020. Retrieved June 1, 2020 from: <https://inosmi.ru/politic/20200326/247137810.html#comments>
29. Belykh, O.A.: *Russkii vopros v zapadnoi internet-periodike: monografiia [The Russian question in Western internet periodicals: a monograph]*. Irkutsk: Irkutsk State University publishing house, 2014.

30. Sharapov, A.: Italiantsy v sotssetiakh blagodariat Rossiiu za pomoshch i rugaiut ES [Italians thank Russia for help and scold the EU in social media]. *Moskovskii komsomolets* March 3, 2020. Retrieved June 1, 2020 from: <https://www.mk.ru/politics/2020/03/22/italyancy-v-socsetyakh-blagodaryat-rossii-za-pomoshh-i-rugayut-es.html>
31. V Italii trebuiut ot Rossii izvinenii [Italy demands apologies from Russia]. *Ekspert* April 8, 2020. Retrieved June 1, 2020 from: <https://expert.ru/2020/04/8/italiya-trebuuet-ot-rossii-izvinenij>
32. Krasulin, A.: Nastoiashchaia solidarnost: italiantsy blagodariat RF za pomoshch v borbe s COVID-19 [True solidarity: Italians thank the Russian Federation for help in the fight against COVID-19]. *Vesti.ru* March 24, 2020. Retrieved June 1, 2020 from: <https://www.vesti.ru/doc.html?id=3250850>
33. Italiantsy popytalis svarit borsch dlia rossiiskikh vrachei. Oni ochen, ochen staralis [Italians attempted to cook borsch for Russian doctors. They tried really, really hard]. *Meduza* April 2, 2020. Retrieved June 1, 2020 from: <https://meduza.io/shapito/2020/04/02/italyantsy-popytalis-svarit-borsch-dlya-rossiyskikh-vrachey-nichego-ne-vyshlo-no-oni-ochen-staralis>
34. Blagodarnye italiantsy prigotovili rossiiskim vracham borsch i poseiali razdor v seti [Grateful Italians prepared borsch for Russian doctors and sowed discord on the Internet]. *Lenta.ru* April 2, 2020. Retrieved June 1, 2020 from: <https://lenta.ru/news/2020/04/02/soup/>
35. Putin obiasnil otpravku pomoshchi SShA i Italii vygodami dlia Rossii [Putin explained sending aid to the US and Italy by benefits to Russia]. *RBK* April 20, 2020. Retrieved June 1, 2020 from: <https://www.rbc.ru/society/20/04/2020/5e9da3fd9a79476b2d339775>
36. Tumanova, A.: Borba protiv ES, a ne s virusom. SMI Italii otsenivaiut rossiiskuiu pomoshch [A fight against the EU rather than coronavirus: Italian media evaluate the assistance from Russia]. *Delovoi Peterburg* April 5, 2020. Retrieved June 1, 2020 from: https://www.dp.ru/a/2020/04/04/Borba_protiv_ES_a_ne_s
37. Eksperty raskryli obiemy rossiiskoi pomoshchi Italii v borbe s koronavirusom [Experts revealed the volume of Russian assistance to Italy in the fight against coronavirus]. *Moskovskii komsomolets* March 3, 2020. Retrieved June 1, 2020 from: <https://www.mk.ru/politics/2020/03/23/eksperty-raskryli-obemy-rossiyskoy-pomoshhi-italii-v-borbe-s-koronavirusom.html>
38. Perevezentsev, A., Novikova, M.: "Eto bezumie – nakhoditsia pered vyborom, komu dat podyshat" ["It is insane to be faced with the choice of whom to let breathe"]. *Kommersant* April 3, 2020. Retrieved June 1, 2020 from: <https://www.kommersant.ru/doc/4314218>
39. Smirnov, I.P.: *Tekstomakhia: kak literatura otzyvaetsia na filosofiiu. [Textomachia: how literature echoes with philosophy]*. Saint Petersburg: Petropolis, 2010.
40. Miroshnikov, Iu.I.: Tsennostnoe soznanie i ego struktura [Value consciousness and its structure]. *Antinomii* 2003; 4: 66-83.
41. Barthes, R.: *Mifologii [Mythologies]*. Moscow: Akademicheskii Proekt, 2008.

Primary Paper Section: A

Secondary Paper Section: AA, AJ

NATIONAL INTERRELATIONSHIPS FROM THE VIEWPOINT OF BIOLOGIST

^aALEXANDER V. SIROTKIN

Constantine the Philosopher University in Nitra, Tr. A. Hlinku 1, 949 74 Nitra, Slovak Republic
 email: *asirotkin@ukf.sk*

Abstract: This review presents an original hypothesis, which explains the existence of current nationalism in the modern globalized society by biological rules of hierarchy and competition between the genotypes. Due to its innate character, it cannot be completely deleted from the social life, but the understanding its biological origin can avoid its negative expressions in the multinational communities.

Keywords: Globalization, Nationalism, National culture, Language, Genes, Hierarchy, Competition, State

1 Introduction: Nationalism is a ubiquitous phenomenon

The objective needs of life and economics force the modern world to deeper and deeper integration. Globalization is visible for everyone. The people of different colors in different parts of the world are proclaiming the similar moral values, watching the same films, enjoying the same music hits, admiring the same heroes, crying by the same love stories and smiling the same animated cartoons. In the shops they are buying the same goods. For international communication they are learning and using the same English language. The human mobility has made real Babylon from some Western countries. Therefore, the objective needs of co-existence of different nations seems should sent the ethnic problems to the far past of the tribal conflicts of aborigines. In addition, the multiethnic states, to maintain their integrity, are trying to reduce their ethnic tensions by its national politics, education and integration.

Unfortunately, the reality is sometimes quite different. Up to date national and ethnical problems are discussed in each pub, each blog, each political talk, each newspaper and TV channel. Usually both the essence and conclusion of these discussions are usually consisting in the statement that "ours" should defend against the growing pressure of "they". Origin of these "theirs" and the cause or motivation of conflicts with they may be quite different – from invasion of Mexicans, Arabs, Russians etc... up to resistance against the pressure from Washington, Moscow, Brussel etc... But "our" always try to dominate over "they" independent of its position. A characteristic historical illustration. In the former Austrian-Hungarian empire the Hungarian people devotedly battled against Austrian dominance and introduction of German language in Hungary. As soon as they have get independency, to ensure power and unity of the state, they hungarized the non- Hungarian majority of the country, which in turn induced separatism of this non-Hungarian population. Later in the countries established at the territory of broken Great Hungary (Rumania, Slovakia, Croatia, Serbia and other countries), the Hungarian, as well as German, Bulgarian and other national minorities were banned, their ownership was confiscated, and even their villages were renamed [1]. Deportation of Jewish minority from these countries was finished by its holocaust [2]. Therefore, the suppressed nation, immediately after getting freedom, tended to suppress other minorities [3-4].

There is no country without problems with its minorities or other nations. If the country would like to be stable, it must solve these problems. But their solution first requires the understanding of their origin. These problems are principally similar in each country independently of origin, mentality, age, education of its population and even on its economic and political system. Politics, according to their current interests, could only either suppress the national instincts of their countryman's or on the contrary to use they to promote tensions and even patriotic war between the nations. But none country was able to eliminate national problems completely yet. It indicates, that the primary causes of these problems are not economic, social, educational, moral or political, but they have deep, probably biological roots.

The source of indestructible national instinct is difficult to explain rationally. Nevertheless, it is necessary to do because its existence and expression can jeopardize the interrelationships between people and even peace and existence of whole country and even humanity.

2 Nationalism is based on hierarchy and competition of genes

As a biologist, I should state, that we are more animals than we have learn in the school and church, whose have try to refuse or to suppress the expression of our animal instincts. To decline their existence means to tell a lie to ourselves concerning origin of our behavior. Each living being has two basic characteristics whose are well documented [5,6] – (1) hierarchic organization of the social interrelationships and (2) favor and guarding of his genes in competition with other ones. I believe, these two features could explain still unexplained expression of the national instinct.

3 Hierarchy of nations and languages

The human social and national hierarchy is the expression of general hierarchy of all living beings, which is a basis of Darwinian natural selection. This hierarchy enables recognition, dominance and surviving of the successful individuals, their groups, genotypes and way of life. Each individual (including us) subconsciously respects and try to mimic or to use other individuals, whose he finds successful and spit upon individuals whose he considers as not successful. That's why many Americans find amazing English accent or French language, but not African languages. People emigrated to USA or Germany from the poorer countries learn English or German gladly and successful, but only few US or German people working in these countries try to speak domestic language. Hierarchy of languages is especially good visible by contacts of three and more cultures. This hierarchy could be illustrated by languages used in Abkhazia, the former autonomic republic of Georgia, which in turn was a part of Soviet Union with Russian as an official language. Each Abkhaz was able to communicate Abkhazian, Georgian and Russian. Georgian ignored Abkhazian but learned and used Russian. Russians did not learn any domestic language [8]. Therefore, acceptance and respect to other culture and language depend on its hierarchical position in human imaginations, whether it is considered as more advanced (dominant) or less advanced (subordinated and therefore not useful) as the own culture.

Language is only one of the possible tools for communication, and the selection of particular tool does not influence too much its final usefulness. Latin, German or Japanese language is not poorer than the English one. Languages of smaller nations are not poorer than the dominant languages. For example, language of Eskimos has more synonyms for indication of the snow color than any other language [9]. But why language is so important for people or national self-determination and self-evaluation?

The majority of the modern, even multinational, multicultural, states are formed at the basis of one dominating language. The minorities should either fight an autonomy and independency or lose their language. Despite visible benefits of integration, a number of states was disintegrated on smaller states with their own languages. Assyrian, Egyptian, Persian, Greek, Roman, Mongolian, Spanish, Portugal, French, British and Soviet empires, Yugoslavia, Czechoslovakia and other multinational states provided more stability and wealth for all their inhabitants under the governance the dominant culture, than the forthcoming smaller, weaker and poorer states. But despite their benefits, these empires belong to history now. Trend to disintegration and national independency we can watch not only in Africa, where the formation of nations and national states has not been completed yet, but also in stable Europe (Belgium, Russia, Spain, UK...).

4 Competition of languages reflects the competition of genes - a biological basis of nationalism

Human history is full of bloody wars between the nations although the writer F.M. Dostojevsky claimed, that any, even very right and noble idea is not worth of even one teardrop of the child [10]. Why so much bloodshed for national idea? Is national culture and language being really worth of so much toll of life and material losses? What is the sense of these victims?

I believe, the people don't fight for language and national customs *per se*. The role of national language and culture is much more important than the instrument of communication. They are the external indicators and symbols of common origin and genetic relatedness of particular group of individuals.

It is a time now to turn to the next biological rule – necessity to protect and to defend the own genes in competition with foreign genes. People, like other living beings, aware or not aware are following dictate of the own genes to protect and to defend they. The normal women would do everything to save the own child. She would like to scarify less for child of far relatives and even less – for not related child. Did you think why? Each large multinational city has visible or invisible Harlem, Brighton beach, Chinatowns etc. whose are characterized my immigration and concentration of one particular nation or race and gradual emigration of other inhabitants. Such enclaves are usually relatively homogenous from the viewpoint of origin, religion, traditions, although their basic values and way of life cannot be different from those of the major population. Did you think why?

To my opinion, the answer is simple – what previously was named as “call of blood” and today – genetic relationships. We are not able to watch genes, but we can recognize “ours” according to their language, looks, behavior and national traditions. In addition to language and culture, sometimes parents, politics and mass media help to distinguish “ours” and “foreigners”. It is to note, that the competition not only of genes, but also of memes (ideas, customs, traditions) occurs [11]. One of example of such competition is the competition of religions, which sometimes can be expressed in a form of bloody religious wars. Memes are closely associated with genes. Therefore, the people can recognize “ours” and discriminate they from “others” not only according to their language, but also according to their confession, points of view, outfit etc.

Anyways, nature has encoded us first to take care to our own family, then to families of relatives, then to your nation and country, thereafter – to rest of humankind and sometimes only thereafter – to other unknown living beings, ecosystems and whole Earth. This hierarchy of values is forced by self-protection of our genes and their preference over the “foreigners”. Furthermore, genes try to expand themselves and to use the available natural resources as much as possible. Furthermore, they try to prevent the use of these resources by the concurrent “foreign” genes.

On the other hand, not all “foreign” genes could be concurrent: some successful genes and individual could be useful for “us”. In this case our genes would not fight against such successful “foreigners”, as it was mentioned in part concerning hierarchy. Sometimes it is more helpful to use “foreigner”, to learn from him the secrets of his success and to take from him everything, what could be useful for “ours”. Sometimes living under governance of more developed and successful can bring visible benefits – no need to develop himself, to manage his life, to take responsibility. If something would go worse, you may complain not to yourself, but to the “foreign” leader. And when he will not be required more, you may ban him and to confiscate his ownership. Genetic competition.

5 Is nationalism good or bad?

National spirit and his positive and negative consequences – love to family, patriotism, nationalism and xenophobia are difficult, but necessary to control. I believe, the two biological laws,

hierarchic organization of the social interrelationships and favor, guarding and protection of his genes in competition with other ones, can help to understand the source of national instinct. These conclusions could not be always pleasant for the reader and for myself. Nevertheless, the nature does not require our understanding and agreement with anything what it makes by means of us. For it is all the same, whether its efforts correspond our moral, social and geopolitical imaginations, interests and conventions. For it is important to maintain reliable and efficient the permanent cycle of life. This process requires expansion and competition of genes. That's why he provided us with numerous instincts including the national one.

What can we do with this instinct, which is not rational and sometimes makes so much problems and crimes? Nothing at all. As with any other instinct. One should understand and accept it as each natural law. To take it into account, if it makes good for family and motherland and not jeopardize other genes, people and nations. Try to be objective, not xenophobic, tolerant and empathetic to everybody. Everything is returning to us, both good and bad thoughts and actions. Nationalism is usually assumed to be a dirty word and a phenomenon not acceptable from humanistic and moral viewpoint. On the other hand, it can be considered as a foundation of democratic self-government and of international peace [12]. Therefore, nationalism, as each phenomenon, has two sides, which should be taken into account and regulated (in a limited extend) according to social needs. But what about national historical rightness? A number of Slavonic workers have done their best to build Empire State Building, but nobody remembering they now, and all the glory belongs to its architect, Anglo-American William Frederick Lamb [13]. Let's be satisfied, that without cooperation between Slavs and Anglo-Americans this building would not stay, and now a whole world knows it.

Taken together, the existence of current nationalism in the modern globalized society can be explained by biological rules of hierarchy and competition between the genotypes. Due to its innate character, nationalism (like a love to the family) cannot be deleted from the social life, but the understanding its biological origin can avoid its negative expressions in the multinational communities.

References

1. Mva, I, Segeš, V. : *Dejiny Uhorska a Slováci*. Bratislava: Perfect., 2012, 398 p. ISBN 978-80-8046-586-5.
2. Vrzgulová, M. : *Nevyroprávane susedské histórie: Holokaust na Slovensku z dvoch perspektív [Untold Neighbours' Histories: The Holocaust in Slovakia from Two Perspectives]*. Bratislava: VEDA, Institute of Ethnology SAS, 2016. 139 p. Ethnological Studies no. 25. ISBN 978-80-224-1542-2.
3. Kralik, R Lenovsky, L., Pavlikova M: *A few comments on identity and culture of one ethnic minority in central Europe*. Eur. J. Sci. Theol., 14(6), 2018. p. 63-76.
4. Kocov, P., Kondrila, P., Kralik, R., Roubalova, M.: *St. Clement of Ohrid and his activities in Macedonia*. Konstantinove Listy, 10(2), 2017, p.88-97.
5. Weinstock, D.M. *Is there a Moral Case for Nationalism?* *Journal of Applied Philosophy*, 13, 1996, p. 87-100.
6. Plavcan, J.M. *Sexual size dimorphism, canine dimorphism, and male-male competition in primates: where do humans fit in?* *Human Nature* 23(1), 2012, p. 45-67.
7. Rico-Guevara, A., Hurme, K.J.. *Intrasexually selected weapons*. *Biological Reviews of Cambridge Philosophical Society*, 2018, 94(1), p. 64-101.
8. Beissinger. M.R. *Nationalist Violence and the State: Political Authority and Contentious Repertoires in the Former USSR*. *Comparative Politics*, 1998, 30, p. 401-422.
9. Berge, A. *Origins of linguistic diversity in the Aleutian Islands*. *Human Biology*, 2010, 82, p. 557-581.
10. Dostoevsky F. *The Karamazov Brothers (Oxford World's Classics)* Oxford University Press, Oxford, 2008, 1054p..

11. Wilkinson I. *Dollar\$ & \$en\$. Part IV: Measuring the value of people, structural, and customer capital*. Clin Leadersh Manag Rev. 2001, 15(1), p.45-49.
12. Lowry, R. *The Case for Nationalism: How It Made Us Powerful, United, and Free*. New York, Broadside Books, 2019, 288p.
13. https://en.wikipedia.org/wiki/Empire_State_Building

Primary Paper Section: A

Secondary Paper Secretion: AC, AD, AN, AO

HOW TO LEAD THE TEAM THROUGH THE CRISIS – COMPARATIVE STUDY BETWEEN BUSINESSES, SELF GOVERNANCE AND HEALTHCARE FACILITIES

^aZUZANA SKORKOVÁ, ^bNADEŽDA JANKELOVÁ,
^cZUZANA JONIAKOVÁ, ^dJANA BLŠTÁKOVÁ, ^eKATARÍNA
 PROCHÁZKOVÁ

*University of Economics in Bratislava, Faculty of business
 management, Dolnozemská cesta 1, Bratislava 852 35, Slovakia*
 e-mail: ^azuzana.skorkova@euba.sk,
^bnadezda.jankelova@euba.sk, ^czuzana.joniakova@euba.sk,
^djana.blstakova@euba.sk, ^ekatarina.prochazkova@euba.sk

Supported by the Scientific Grant Agency of the Ministry of Education of Slovak Republic and the Slovak Academy of Sciences VEGA Project No. 1/0017/20 Changes in application of management functions in the context of 4.0 industry era and its adaptation processes – 50% and by VEGA No. 1/0412/19 Systems of Human Resources Management in the 4.0 Industry Era – 50%.

Abstract: The onset of a COVID 19 pandemic has created a general need for appropriate crisis management. The aim of our paper is to compare the degree of crisis management competencies in three different types of organizations - businesses, health care organizations and self-government organizations. Degree of crisis management competencies was determined by the following factors - quality of crisis communication, the leadership style, the quality of decision-making in times of crisis, team performance and teamwork and the information sharing. The highest level of crisis management competencies was achieved by crisis management in business, which we proved on a sample of 122 companies. The leadership is weakest link of crisis management in all the organizations surveyed.

Keywords: crisis management, crisis communication, COVID-19, team work

1 Introduction

The Covid-19 pandemic caused an unexpected and global crisis, which will most likely lead to permanent changes in organizational management. The whole society was hit by the COVID-19 crisis rapidly and unexpectedly. The crisis management and change management are currently part of every single company, organization or institution. Every individual had to adapt in his ordinary work life to a large extent to the crisis, which came unexpectedly and caught many of us off-guard. A great deal of uncertainty is evident throughout society. Hotels, restaurants, retail stores, sports facilities, theatres and cinemas remained closed during the acute stage of the crisis without a prospect of future activity.

On the other hand, these facts appeal to the need of quality management competencies, which would be stable and established long-term in the environment of leaders in all kind of organizations, and which in non-standard conditions may develop into higher management skills, and thus allow the leaders to operate on a principle other than by trial and error (which could have fatal consequences for all stakeholders). The aim of our paper is to compare the degree of crisis management competencies in three different types of organizations - businesses, health care organizations and self-government organizations.

The research results will help to identify the weak spots of crisis management in each of above mentioned institutions. Our findings can guide responsible managers from these organizations to improve critical areas of their crisis management. We consider it important to examine the level of key crisis competencies in companies, thus identifying the strengths and weaknesses of the management of individual institutions. Leaders should invest their time in improving the level of weaknesses, which will be significantly reflected in the quality of crisis management of their institution.

1.1 Crisis management competencies

To manage a crisis is to manage the change (Hutchins & Wang, 2008), whereby the human factor plays a significant role in the management of changes, which is the determinant of success/failure in the implementation of decisions,

communication strategies, team work performance and the reach of leadership in crisis.

The more lives that are governed by the value(s) under threat, the deeper the crisis goes (Boin et al., 2005). For this exact reason the Corona crisis is perceived more intensely, since it caused a feeling of uncertainty and concerns for the health and lives of people and their loved ones.

Crisis management creates pressure on using transformational leadership with a focus on charismatic leadership (Johnson, 2020; Johnson & Riggio, 2004), however, with an emphasis on maintaining strength and unity of leadership tools (Jacobides, 2020). At the same time, it creates pressure on higher and top management, which should focus on transparent provision and immediate sharing of information, open communication and acceptance of non-conforming solutions (Gardner & Peterson, 2020).

Several studies show that in the context of effective crisis management, especially during the acute stage of the crisis, major factors of its successful management include especially effective communication (Kim&Lim, 2020; Clementson 2020), use of suitable people management style (Richardson, 2019; Grant-Smith&Colley, 2018), ability of adequate decision-making (Savi & Randma-Liiv, 2015) and the establishment of an effective crisis team and sharing of information within (Uitdewilligen & Waller, 2018; Lee, Woeste, & Heath, 2007). Significant factors for crisis management, especially during its acute stage, are efficient and effective communication (especially internal), selection of suitable management style, flexibility of decision-making, establishment of an effective crisis team and sharing of information within it (Pearce et al., 2020; Bhaduri, 2019; Bowers et al., 2017; Comfort et al., 2020).

Communication is the most important tested variable in the effect of competent crisis management on performance. Communication becomes a strategic element to maintain the reputation of the business (Flores et al., 2019). As the authors of this study argue, the commitment of the employees to the company is reinforced by communication taking place in the form of constant and honest dialogue. The author of the normative crisis communication emphasizes that true and relevant information is its foundation and that information overflow is harmful (Clementson, 2020). Although research in the field of crisis communication has recently developed mainly in the field of external crisis communication, internal communication in times of acute crisis in terms of exchange of information between managers and employees for effective decision-making and performance, has been neglected compared to external. The internal dimensions of crisis communication are insufficiently researched also because the results of crisis management are directly related to the perception of co-workers, the creation of feelings, reactions and actions. As an organization enters an acute phase of a crisis, the need for information increases dramatically among co-workers. Collaborators act on how I understand the situation and at the same time discuss the crisis with all stakeholders, especially patients. Johansson & Ottestig (2011) found that managers overestimate their external legitimacy over internal legitimacy, and this is reflected in insufficient communication skills in relation to employees. Coombs (2007) states that communication by management should be perceived by employees as honest, honest, trustworthy, and transparent and open.

Tourish (2020) objects that the Covid-19 pandemic is also a crisis of *leadership theory and practice*. Author compared the decision-making process to gambling, where the leadership has weak knowledge unproven by research. The crisis situation we are currently facing often creates an environment especially for populist (Schneiker, 2020) and destructive leadership (Brandebo, 2020) and he also draws attention to the fact that the crisis

managers are not always equipped to manage relations, which may have negative consequences from the long-term perspective. James et al. (2011) point to the formation of effective leadership styles under the influence of the expectations that employees have from their managers. This is especially important in times of crisis, as employees are key stakeholders in crisis management. In times of crisis, employees expect the leader to successfully manage it, easy to overcome through difficult obstacles. They want to be supported by him, they demand support from him, they want to feel his interest and empathy, and subsequently they want to help him through cooperation and shared leadership (Pearce et al., 2020).

Coombs (2007) points out the fact that the members of the crisis team have to have *decision-making authority*. Olaniran and Williams (2001) and Jehn & Techakesari (2014) state that human factors and team processes play the key role in the improvement of reaction speed, accuracy and effectiveness of team members. Olaniran and Williams (2001) state that crisis management is a process of collective decision-making. Crisis decision-making is associated with a high degree of uncertainty, which increases in the event of a Covid-19 pandemic with a low degree of control over this new type of virus. Hirsch, Mar, & Peterson (2012) state that the adoption of clear goals and structures helps to bring certainty to the great uncertainty that is characteristic of acute times of crisis. An important prerequisite for making the right decision is the ability to think critically, to perceive information in context and to be oriented in a problem (Higgins & Freedman, 2013). In times of crisis, management needs to be able to analyze different solutions, learn on the fly, respond from situations that are actually going on, flexibly to them, related to the existence of effective crisis management in the run-up to the crisis (Reeves, 2020).

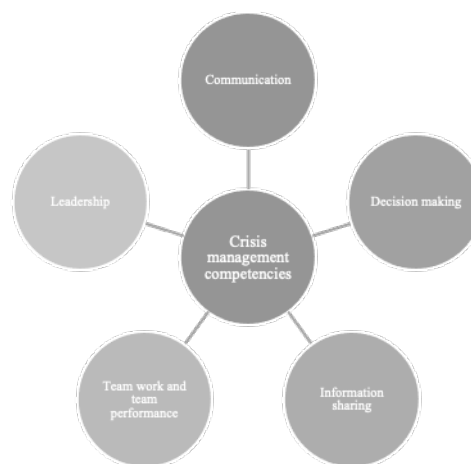
The sharing of information in the form of providing information and creating an environment for the sharing of information explain, based on the results, the greatest effect of crisis management on employee performance in teams. As pointed out by Netten et al. (2018), in reality, the employees often encountered information oversaturation or incomplete information during the crisis, or the combination thereof, which led to reduced quality of decision-making and subsequently lower performance. Given the internal focus of crisis management, crisis managers in the acute phase of a crisis should ensure that their teams perform better by sharing information across the organization to the right extent, quality, time (Vainieri et al., 2017). Important aspects of information sharing are also the comprehensibility, regularity and timeliness of informing about current problems and facts, which in turn lead to team performance (Vos & Buckner, 2015).

Teamwork is a relentless topic in the scientific literature (Manser, 2009; Weller et al., 2014). Kunz et al. (2018) also point to the importance of the existence of team standards that determine expectations about the appropriate behavior of individual team members. The key role in their formation is played by the middle management of organizations, whose importance in managing the crisis should also be recognized by top management. According to Manser (2009), this is also crucial for effective teamwork, especially in environments that face high levels of uncertainty and complexity. The results of the research confirmed that teamwork in organizations was a supporting element in coping with the initial stage of the crisis, the respondents acknowledged high value in their statements, autonomy, a sense of security, the opportunity to learn a lot and pride in their work.

Our research is situated in the acute stage of the Covid-19 pandemic crisis. The question arises about how much the organizations (companies, self-governments and healthcare facilities) were prepared for this situation, if they were prepared at all? How were they capable of effectively handling it under the extreme conditions and with existing resources? What proven tools and techniques implemented during the current crisis management can they implement also during the latter, post-pandemic operation? The studies published so far have not

focused on comparing the level of key crisis competencies between different types of organizations during the first acute phase of the COVID-19 pandemic. It is this research gap that we will try to cover with our research. We assume that the quality of crisis management is linked to the crisis management competencies. Based on the knowledge presented above, we assume that crisis management competencies are following: communication, decision making process, information sharing, leadership and teamwork – this is illustrated in figure 1. The joint effect of said factors is the precondition for the successful management of difficult conditions and the preparation for new, often changed, post-crisis operations. We further assume that the crisis management competencies positively affects the employees' attitudes to work and their performance. We have therefore measured the level of each of crisis competencies above and we provided the comparison data obtained in three types of organizations – businesses, self-governments and healthcare facilities.

Figure 1: Factors affecting crisis management in organization



Source: Own processing.

2 Methodology

Design and Procedure

Based on the current knowledge and identification and definition of the gap in the research of crisis management during a pandemic crisis, we have formed the research design for the purposes of this study.

Research question: What is the level of crisis management in acute stage of COVID-19 in three different types of institutions – businesses, self-governments and healthcare facilities?

Main research goal: Measure and compare the level of crisis management competencies in three different types of institutions – businesses, self-governments and healthcare facilities.

Partial research goals: Identify crisis management weaknesses for each of these institutions.

We have used a questionnaire survey to collect data. The questionnaires were sent electronically to the managers of businesses, self-government organizations and healthcare facilities. For the objective assessment of management skills of crisis managers during the stage of acute crisis, the questionnaires were sent and collected during the first months of the crisis (during March and April 2020), whereby the first Covid-19 case in Slovakia was confirmed on March 6, 2020. The research sample consisted of 122 businesses, 207 self-government organizations and 216 healthcare facilities. The respondents were managers at different levels with different amounts of management experience (team leaders, middle management, and higher management).

Crisis management competencies were tested by 61 items, which are scaled using the 5-point Likert-type scales (1='strongly

disagree' and 5='strongly agree'). The list of tested items are included in following table 1. The internal consistency of all questionnaire scales was very good, which is confirmed by the Reliability test in all examined categories.

Table 1: Items Used to Measure Selected Variables

N.	Crisis Communication
1.	The leadership provides a credible explanation of what has happened.
2.	The leadership provides directives to manage the spreading of the virus.
3.	The leadership instills hope by emphasizing the positive aspects and positively presents the likelihood of a successful solution to the problems.
4	The leadership expresses empathy to employees, their families and others affected by the health crisis.
5	The leadership is in control of the situation, emphasizes its own responsibility and takes appropriate action to overcome the crisis situation.
6	During the crisis, the leadership supports two-way communication.
7	During the crisis, I see communication on the part of the leadership as honest, sincere and I trust it.
8	During the crisis, I see communication on the part of the leadership as transparent.
Leadership style	
1.	During the crisis, the leadership is an example to its employees.
2.	During the crisis, the leadership shows confidence in its employees even in cases where they face failure.
3	During the crisis, the leadership gives the necessary support to the employees.
4	During the crisis, the leadership empowers employees and gives the space for decision-making and acting, if they have the necessary skills.
5	During the crisis, the leadership expresses support of other entities (for example, communities, self-government, etc.).
6	During the crisis, the leadership places the good of the team above its own interests.
7	During the crisis, the management considers the moral and ethical implications of its decisions.
8	The leadership speaks positively of the future.
9	During the crisis, the leadership critically re-evaluates its expectations in relation to their suitability and accuracy.
10	During the crisis, the leadership helps others to develop their strengths.
Decision-Making During the Crisis	
1	During the crisis, the leadership is oriented in the problem.
2	During the crisis, the decisions of the leadership are still in line with the strategy / vision / values.
3	During the crisis, the decisions of the leadership are fast and the leadership takes responsibility for them.
4	During the crisis, the leadership is capable of critically evaluating information.
5	During the crisis, the leadership is capable of viewing information in context.
6	During the crisis, the leadership is capable of analyzing different possible solutions.
7	During the crisis, the leadership is capable of learning on the go from situations.
8	During the crisis, the leadership is cautious and it is prepared for worst-case scenarios.
Team Performance	
1	This company/organization is a good place to work even during a crisis.
2	I am proud of our company/organization for how it handled the crisis situation.
3	Working in our company/organization is like being part of a big family even during these times of crisis.
4	During the crisis, the morale in our company/organization is high.
5	I do my job with enthusiasm even during the crisis.
6	Currently, my work provides me with enough autonomy.
7	I get useful feedback in the current situation.
8	The work environment in our company/organization is safe during the crisis.
9	The working conditions are satisfactory during the crisis.
10	The company/organization deals constructively with the issues of its employees during the crisis.
11	The employees need to be less controlled in the performance of their tasks during the crisis.
12	The employees help and support each other in their work in the current situation.
13	The employees are willing to work with greater commitment during the crisis time.
14	It matters to me, how successfully the company/organization manages the crisis situation.

15	Despite the crisis situation, my work in our company/organization is a source of energy for me.
16	I learn a lot at my work during this crisis period.
17	All team members may ask questions during the crisis, if there is something they do not understand.
18	During the crisis, the employees receive support they need from other employees in the performance of their work.
19	During the crisis, it is difficult to express oneself critically at this workplace, if I see problems in fulfilling obligations.
20	During the crisis, disputes at the workplace are addressed appropriately; it is not important who is right, but which solution is the best.
21	During the crisis, all employees work together as a well-coordinated team.
22	During the crisis, the corporate culture supports learning from the mistakes of others.
23	Professional mistakes do happen during the crisis and are addressed appropriately.
24	During the crisis, my colleagues encourage me to express possible concerns I might have in relation to the fulfillment of obligations.
25	During the crisis, I receive adequate feedback.
Information Sharing During the Crisis	
1	I am informed about the procedure for solving the crisis situation.
2	The information I get during the crisis is useful to me.
3	I get information during the crisis on time.
4	The information I get during the crisis is understandable to me.
5	During the crisis, I have enough information for my work.
6	During the crisis, I constantly get updated information.
7	The amount of information during the crisis is excessive.
8	During the crisis, I have an overall picture of the situation (not only selected new information).
9	I am informed about the results of the crisis solutions.
10	The communication channels used during the crisis suit me.

Source: Own processing.

4 Results and Discussion

The results are included in table 2. The internal consistency of all questionnaire scales was very good, which is confirmed by the Reliability test in all examined categories.

Table 2: Mean by tested items

N.	Healthcare facilities Mean	Self-government Mean	Businesses Mean	
1	3.74	4.20	4.34	Crisis Communication
2	3.96	4.33	4.44	
3	3.53	3.72	4.06	
4	3.54	3.97	4.09	
5	3.65	4.08	4.37	
6	3.38	3.87	4.11	
7	3.53	3.93	4.18	
8	3.39	3.82	4.26	
Total Mean	3,59	3,99	4,23	
1	3.55	3.82	4.21	Leadership style
2	3.50	3.64	4.07	
3	3.47	3.97	4.13	
4	3.38	3.77	4.13	
5	3.31	3.13	4.14	
6	3.19	3.21	3.96	
7	3.56	3.75	4.11	
8	3.43	3.87	3.80	
9	3.34	3.54	3.94	
10	3.16	3.02	3.64	

Total	3,39	3,57	4,01	Decision making
1	3,62	3,98	4,28	
2	3,51	4,34	4,40	
3	3,68	3,72	4,06	
4	3,53	3,85	4,09	
5	3,60	3,95	4,17	
6	3,60	3,77	4,06	
7	3,78	4,03	4,17	
8	3,81	3,87	4,22	Teamwork and performance
Total	3,64	3,94	4,18	
1	3,64	4,41	4,38	
2	3,67	3,87	4,14	
3	3,28	2,82	3,03	
4	3,49	3,59	3,89	
5	3,81	3,67	4,03	
6	3,60	3,59	4,00	
7	3,58	3,59	3,97	
8	3,52	3,46	3,92	
9	3,41	3,61	3,92	
10	3,59	4,08	4,26	
11	3,68	4,02	4,42	
12	3,48	3,74	4,07	
13	3,60	3,89	4,15	
14	3,70	3,72	4,18	
15	3,74	4,00	4,18	
16	3,44	3,46	3,99	
17	3,75	4,11	4,29	
18	3,60	4,21	4,32	
19	3,28	3,70	4,07	
20	3,03	3,33	3,24	
21	3,65	3,92	4,05	
22	3,54	3,33	3,88	
23	4,26	4,16	4,59	
24	3,69	3,51	3,95	
25	3,92	3,70	4,30	
Total	3,60	3,74	4,05	
1	3,76	4,10	4,32	Information sharing
2	3,76	3,95	4,32	
3	3,44	3,82	4,10	
4	3,68	4,02	4,22	
5	3,49	3,98	4,06	
6	3,66	3,84	4,19	
7	3,46	2,95	3,76	
8	3,66	3,72	4,04	
9	3,41	3,39	3,99	
10	3,46	4,10	4,06	
Total	3,58	3,79	4,11	

Source: Own processing.

The results presented in Table 2 confirmed that the highest quality of crisis management competencies was achieved by businesses, the highest score for each of the crisis competencies

is evident. In the area of crisis communication, even the mean value in all indicators for businesses is more than 4. The weakest values are achieved in the area of healthcare facilities. The differences are striking - e.g., in the category of transparent communication - (8th item of Crisis communication) the difference between healthcare facilities and business is up to 0.8.

There are also big differences in Leadership style. For item number 5 (*During the crisis, the leadership expresses support of other entities - for example, communities, self-government, etc.*), the businesses reached mean 4.14, while the healthcare facilities have a value of 0.83 lower, self-government even of 1.01 lower. During a crisis, the employees expect their leader to successfully master the crisis and easily overcome difficult obstacles. They want to trust in him, they need his support, they want to feel his interest and empathy and consequently they want to be helpful through cooperation and shared leadership (Pearce et al., 2020). At a time of crisis, it is necessary for the leadership to be able to analyze different solution possibilities, learn on the go from situations that are actually happening and flexibly respond to them, which is related to the existence of an effective crisis management in the time before the crisis (Reeves, 2020). What is surprising in item 8 in Leadership style (*The leadership speaks positively of the future.*) is the highest score for self-government institutions - 3.87, whereas 3.8 in businesses. In the area of decision making, the differences are again large - in item 2, the businesses level reaches 4.4, while healthcare facilities only 3.51, which represents a difference of 0.89. In the area of teamwork and performance, we see the biggest difference in item 1 - where businesses reach mean 4.38, self-government institutions even 4.41 but healthcare facilities only 3.64. In the area of Information sharing, there is a marked difference in item 3 where businesses reach 4.10, while healthcare facilities only 3.44.

In all monitored items, businesses reached the mean higher than 4 - Communication 4.23, Leadership style 4.01, Decision making 4.18, Teamwork and performance 4.05 and Information sharing 4.11. Neither self-government intuitions nor healthcare facilities achieved above 4 in any of the key crisis competencies monitored.

According to the PwC study (Global Crisis Survey 2019), 7 out of 10 managers have experienced managing a crisis in a company over the past 5 years. Therefore, in general, it is not necessary to think about whether a crisis will happen, but when it will happen and we can say that most business managers have already encountered some form of crisis. 42% of businesses in said study state that after overcoming the crisis they see their position as better than before the crisis 36% of the companies said that they defended and stabilized the position they had before the crisis. As business managers are most often exposed to crisis situations, this will probably be the reason why business managers in our study proved to be prepared the best to face the crisis. As stated by da Silva & Costa (2018), every crisis has its positive aspects, which include especially improvements of control processes, responsibilities and organizational structures. Therefore, all managers of the institutions we examined should approach the crisis as an opportunity to change the way of management in a positive way.

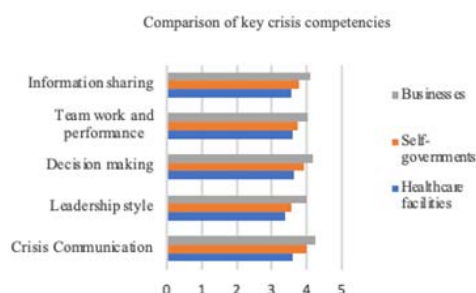
5 Conclusion

The Corona crisis is a source of threats and opportunities for all the institutions and their management. It is important for the organizations to be prepared for the future and to be able to effectively manage their processes, people and the whole system, in the context of resistance and sustainability in a turbulent and changing environment.

Experts have assumed during the first wave of COVID crisis another wave of this pandemic and they also confirm a very high likelihood of a similar type of pandemic happening again in the near or distant future. Therefore, we emphasize preparation of all organizations for such crisis situations as the only effective tool.

As it is illustrated in figure 2, the difference between all organizations is evident.

Figure 2: Comparison of key crisis competencies in businesses, self-governments and healthcare facilities



Source: Own processing.

Our results confirmed that the highest quality of crisis management competencies was achieved by businesses, where we see the highest score for each of the crisis competencies – mean was more than 4 for all of them. Self-government organizations were placed in second place, while in none of the indicators they reach the mean above 4. Among the analyzed organizations healthcare facilities are facing the biggest challenges in crisis management. All organizations in our research sample reached the lowest values in the key competence of leadership style. In times of crisis it is especially important, because the employees are the key stakeholders in crisis management, therefore this is the crucial key competence to be improved in all surveyed organizations.

Research Limitations

The research carried out has several limitations, in particular in the form of other aspects of crisis management, the consideration of which would contribute to a better informative value of the results. A larger and better composition of the research sample would contribute to a higher validity of research results and conclusions for crisis management for individual types of organizations. Another limitation of the research interpretation is the local nature of the research and the limited research sample (122 businesses, 216 healthcare facilities and 207 self-government organizations) in Slovakia. From a regional point of view, the results are relevant; their generalization would require an extension of the sample. Given the fact that the crisis had the same global cause, interpretations of research can be considered important regardless of borders.

Literature:

- Bhaduri, R.M.: Leveraging culture and leadership in crisis management, *European Journal of Training and Development*, 2019. Vol. 43 (5/6), pp. 554-569. <https://doi.org/10.1108/EJTD-10-2018-0109>
- Boin, A., Hart, P., Stern E. & Sundelius B.: *The Politics of Crisis Management*, Public Leadership Under Pressure. Cambridge University Press, 2005.
- Bowers. M. R., Hall, J.R. & Srinivasan. M. M.: Organizational culture and leadership style: the missing combination for selecting the right leader for effective crisis management. *Business Horizons*, 2017. 60 (4), pp. 551-563.
- Brandebo, F. M.: Destructive leadership in crisis management, *Leadership & Organization Development Journal*, 2020. Volume 41 (4), pp. 567-580. <https://doi.org/10.1108/LOD-J-02-2019-0089>
- Clementson, D. E.: Narrative persuasion, identification, attitudes, and trustworthiness in crisis communication, *Public Relations Review*, 2020. Volume 46 (2)
- Comfort, L., Kapucu, N., Ko, K., Menoni, S. and Siciliano, M.: Crisis Decision Making on a Global Scale: Transition from Cognition to Collective Action under Threat of COVID-19.

2020. *Public Administration Review*, Accepted Author Manuscript. doi:10.1111/puar.13252
- Coombs, W. T.: Protecting organization reputations during a crisis: The development and application of situational crisis communication theory. *Corporate Reputation Review*, 2007. Volume 10 (3), pp. 163–176.
- Da Silva B. R., Costa H. A.: Crisis management in the public sector and its influences on the administration: the case of the Voucher Operation in the Ministry of Tourism, *Revista Do Servico Publico*, 2018. Volume: 69 (2), pp. 89-115.
- Flores, H. G. H, Hernández, V. S., Villanueva, A. E.: Government responsible communication in crisis situations: Frida Sofia's case, *Perspectivas De La Comunicacion*, 2019. Vol. 12 (2).
- Gardner, H. K, Peterson R. S.: Executive and Boards, avoid these Missteps in a Crisis. *Harvard Business Review*, April 2020
- Grant-Smith, D. Ch. C., Colley, Katurah, L. Of "Strong" Leadership, Crisis Communication, and Pooper Scoopers: Change in the Queensland Public Service Under Newman, *Australian Journal Of Public Administration*, 2018. Volume: 77 (2), Pages: 236, DOI: 10.1111/1467-8500.12311
- Higgins, G. & Freedman, J.: Improving decision making in crisis. *Journal of Business Continuity & Emergency Planning*, 2013. 7(1), pp. 65–76.
- Hutchins, H. M., & Wang, J.: Organizational crisis management and human resource development: a review of the literature and implications to HRD research and practice. *Advances in Developing Human Resources*, 2008. Volume 10 (3), pp. 310-330, doi: 10.1177/ 1523422308316183
- Jacobides, M. G. Good Leaders can overcome Institutional Inertia in Crisis. *Harvard Business Review*, May 2020
- James, E. H., Wooten, L. P. & Duskek, K. Crisis management: informing a new leadership research agenda. *The Academy of management Annals*, 2011. Volume 5 (1), pp. 455-493.
- Jehn, K.A., & Techakesari, P. High reliability teams: new directions for disaster management and conflict. *International Journal of Conflict Management*. 2014. 25 (4), pp. 407-430.
- Johansson, C. & Ottestig, A.T.: Communication executives in a changing world: legitimacy beyond organizational borders. *Journal of Communication Management*, 2011. 15 (2), 144-164.
- Johnson, S. K. How CEOs can lead selflessly through crisis. *Harvard Business Review*, May 2020
- Johnson, S. K., Riggio, R. E.: Charismatic Leadership in Crisis Situations A Laboratory Investigation of Stress and Crisis. *Small Group Research*, 2004. Volume 35 (5), pp. 495-514. DOI: 10.1177/1046496404264178
- Kim, Y. & Lim, H.: Activating constructive employee behavioural responses in a crisis: Examining the effects of pre-crisis reputation and crisis communication strategies on employee voice behaviours. *Journal of Contingencies and Crisis Management*. 2020; 28: pp. 141– 157. <https://doi.org/10.1111/1468-5973.12289>
- Kuntz, L., Scholten, N., Wilhelm, H., Wittland, M. & Hillen, H. A.: The benefits of agreeing on what matters most. 2018. *Health Care Management Review*, Volume 45 (3), pp.217-227.
- Lee, J., Woeste, J. H., Heath, R. L.: Getting ready for crises: Strategic excellence, *Public Relations Review*, 2007. Volume: 33, (3) pp. 334-336 DOI: 10.1016/j.pubrev.2007.05.014
- Manser, T. Teamwork and patient safety in dynamic domains of healthcare: A review of the literature. *Acta Anaesthesiologica Scandinavica*, 2009. Volume 53 (2), pp. 143-151.
- Olaniran, B. A., Williams, D.E.: *Anticipatory model of crisis management: a vigilant response to technological crises*. Heath, R.L. (Ed.) *Handbook of Public Relations*. 2001. Sage Publications, Thousand Oaks.
- Pearce, A. P., Naumann, D. N., & O'Reilly, D.: Mission command: applying principles of military leadership to the SARS-Cov-2 (covid-19) crisis. *BMJ Military Health*, bmjmilitary-2020-001485. doi: 10.1136/bmjilitary-2020-001485
- PwC Survey: Global Crisis Survey 2019. <https://www.pwc.com/gx/en/forensics/global-crisis-survey/pdf/pwc-global-crisis-survey-2019.pdf>
- Reeves, M. et al. Lead your business through Corona crisis. *Harvard Business Review*. Special edition of Coronavirus and

- Business: The insights you need from Harvard Business Review. 2020. pp. 6-11.
28. Richardson, N. Crisis leadership: How to lead in times of crisis, threat and uncertainty, *Management Learning*. 2019. Volume: 50 (5), pp. 629-632 DOI: 10.1177/1350507618777330
29. Savi, R., & Randma-Liiv, T. Decision-making in time of crisis: cutback management in Estonia. *International Review of Administrative Sciences*, 2015. Volume 81 (3), pp. 479–497. <https://doi.org/10.1177/0020852315573131>
30. Schneiker, A.: Populist Leadership: The Superhero Donald Trump as Savior in Times of Crisis, *Political Studies*. 2020. <https://doi.org/10.1177/0032321720916604>
31. Tourish, D.: Introduction to the special issue: Why the coronavirus crisis is also a crisis of leadership, *Leadership*. 2020. Volume 16 (3), pp. 261–272.
32. Uitdewilligen, S, Waller, M. J. Information sharing and decision-making in multidisciplinary crisis management teams. *Journal of Organizational Behavior*. 2018. Volume 39: pp. 731– 748. <https://doi.org/10.1002/job.2301>
33. Vainieri, M., Ferrè, F., Giacomelli, G. & Nuti, S.: Explaining performance in health care. *Health Care Management Review*, 2017. 1. doi:10.1097/hmr.0000000000000164
34. Vos, S. C. & Buckner, M. M.: Social Media Messages in an Emerging Health Crisis: Tweeting Bird Flu. *Journal of Health Communication*, 2015. 21 (3), pp. 301–308.
35. Weller, J., Boyd, M. & Cumin, D.: Teams, tribes and patient safety: Overcoming barriers to effective teamwork in healthcare. *Postgraduate Medical Journal*, 2014. Volume 90, 149-154.
36. Yoder-Wise, P. S.: The future of leadership. *Journal of Nursing Administration*, 2014. Volume 44 (6), pp. 318-320.

Primary Paper Section: A

Secondary Paper Section: AE

VALUE ORIENTATION OF CONVICTED WOMEN IN SLOVAKIA IN RELATION TO THEIR AGE AND EDUCATION

^aDOMINIKA TEMIAKOVÁ

Constantine the Philosopher University in Nitra, Faculty of Education, Dražovská 4, Nitra, Slovakia
email: ^adtemiakova@ukf.sk

Abstract: The study presents adult convicted women's value preferences at the research sample of 186 women (29,5% of female respondents from the basic set) employing the questionnaire method. We carried out our research in 2017, and we aimed to find out the significance level of chosen values in relation to the variables of age and the achieved level of education. Convicted women achieved the highest score in values such as Health, Family, Freedom. The least important values were the values such as Belief in God, Art and Travelling. Based on the statistical analysis using the *Spearman's rho coefficient* we found out that there is a statistically significant relationship between the age and two chosen values: *Belief in God* ($r_s = -0,173^*$) and *Family* ($r_s = -0,202^*$). Similarly, we found out significant differences among respondents in relation to their achieved level of education in the rate of the following values: *Education* ($x_2 = 10,158$; $p = 0,006$), *Freedom* ($x_2 = 7,389$; $p = 0,025$), *Children* ($x_2 = 8,617$; $p = 0,013$) and *Work* ($x_2 = 6,568$; $p = 0,037$) at the level $p \leq 0,05$.

Keywords: age, level of education, prison, values, women

1 Introduction

„For a long time, women and prison were perceived as two mutually unrelated entities, opposite poles or words that could not be joined with a preposition „in“. The rate of women participating in crime seemed to be so small and their offences so irrelevant that dealing with women, in this respect, was considered to be a waste of time. People did not perceive the criminality of women as a social problem. They interpreted the criminal behaviour of men and women as a consequence of their insufficient physiological development, or an indication of their evolutionary stunting.“ (Nedbálková, 2003, p. 469). However, even today, sociologists still emphasise that prison is a typical environment coded for men, although gender-specific features are indisputable – convicted women differ from men in the imprisonment sentence in many aspects. From the sociological point of view, deprivation of men and women in prison differs significantly, what is related to the difference between the male and female statuses in broader society. While the male social status depends on the work role, the female social status is based mainly on the family role, participating in supporting and emotional relationships (Ward, Kassebaum, 1965, cited in Nedbálková, 2003, p. 473). We can also find a similar explanation by Crowley (2019, p. 13). She says that „most women who are admitted to prison are mothers and many have primary care responsibilities for other family members. These responsibilities and relationships can play a role in women's pathways to prison and are also fundamental to their rehabilitation prospects. For mothers, separation from their children can severely impact their mental wellbeing.“

Globally, convicted women form a statistically much smaller group than convicted men. According to the Yearbook of Prison and Court Guard Service from the year 2017 (2018), when we carried out our research, in Slovakia, there were 7835 adult men and 630 adult women in prison. Thus, the percentage rate represented 92,56:7,44%. Kruttschnitt, Gartner (2003, p. 1) say that „reasons include the relatively smaller number of female felons, the generally less serious nature of their offending, beliefs about the greater reformability – or at least tractability – of women, assumptions about women's peculiar psyches, and conceptions of normative femininities.“ Furthermore, also the gravity of committed crimes, i.e. the reasons why women get into the enforcement of imprisonment sentence, are more specific ones. „Women in prison often come from disadvantaged backgrounds typically marked by economic deprivation, substance abuse, violence and household disruption. Prisoners also tend to have higher rates of illiteracy and lower levels of education than the general population.“ (Crowley, 2019, p. 13). For this reason, dealing with convicted women should naturally differ from dealing with convicted men.

1.1 Research on convicted women

The long-term approach to dealing with men and women in prison reflects similar tendencies running in the research area. The first monograph about women's imprisonment was the study *Women in Prison* by authors Ward and Kassebaum from 1965. Kruttschnitt, Gartner (2003, p. 1) say that „research on women in prison and women's prisons has, perhaps inevitably, been shaped by many of the same facts and assumptions. Since the 1960s, when a growing number of academics began to turn their attention to female prisoners and women's prisons, a major theme has been the distinctiveness of female prisoners' needs, disadvantages, and ways of adapting or responding to imprisonment.“ Nedbálková (2003) emphasises that research focuses on topics such as the etiology of women's criminal behaviour and dealing with women in the system of Criminal Law and Judiciary. The research also studies the character of informal social systems inside the prison and the adequacy of imprisonment to respond to social problems.

In Slovak conditions, the research on convicted women has been absent until now. Authors pay attention mainly to people released from the imprisonment sentence because there is better and easier access to respondents. A similar situation is also in the Czech Republic because Urbanová, Večeřa (2003) say that underestimating women's criminality represents a danger. In their opinion, although women commit less severe crimes, their moral consequences are more significant. Thus, generally, in the research on convicted women, it is still valid that „as many scholars have noted, at best, [women] remain marginal to the study and practice of imprisonment.“ (Moore, Scraton 2014, cited in Crewe, Hulley, Wright, 2017, p. 1374). It is crucial to change this situation because only with research, we can understand the world of convicted women that significantly differs from the world of convicted men. In this way, we can make more efficient the re-socialisation methods and the general way of dealing with these women and their imprisonment. Similarly, Kruttschnitt, Gartner (2003, p. 1) emphasise that „understanding of ways women negotiate power and construct their lives in prison is greater than in the past; new theoretical frameworks have provided important insights, but fundamental questions remain unanswered.“

1.2 Value orientation of convicted people

Value is a primary axiologic category, and according to Průcha, Veteška (2014), we may define it as a generally accepted feature (quality, significance, importance) that people attribute to objects, phenomena, processes, events and society. Individuals, groups, nations and countries' populations share values, and they transmit them between generations. People acquire them by socialisation and enculturation. Every cultural community has its specific values which influence attitudes, norms of behaviour, motivation and morality. The hierarchical organisation of values is called a value orientation/value system. Value systems within a specific community differ according to the age, gender, socio-economic position and people's achieved level of education. Their characteristic feature is that these values change in time. Urbanová, Večeřa (2003) say that values belong to essential elements of social structure, and they may serve as significant predictors for behaving of different social groups and substructures.

A confrontation of an individual's value orientation with the society's value system can generate a conflict. This conflict can lead to the violation of social norms, and in extreme cases, to the deprivation of an individual's rights and freedom. Already Cochrane (1971, p. 73), a pioneer in research on values and value systems in relation to the emergence and development of delinquent behaviour, emphasises that „persistent criminal behaviour, almost by definition, implies that the criminal has a value system which is, in some important ways, different from that of other individuals who do not engage in criminal

behaviour. This may be because the modal values of society have been consciously or unconsciously rejected by the criminal, or because they have not been internalised to the same extent as by the non-criminal." The author found out that delinquent women often reject the woman's role because they do not appreciate values that society designs for this woman's role.

In 2002, Czech researchers carried out unique research on convicted women's value preferences. Among other topics, this research compared the value preferences of this specific group of respondents with the Czech population's value preferences. They used the questionnaire method, and they researched a sample of 322 female respondents in four Czech prisons. There was a set of 27 value items, and they assessed them with a nine-point evaluating scale. „Traditionally, in the first place appeared the value of health, then a calm life and wellbeing (family, freedom, peace, children, living, friends, success at work). Subsequently, there followed values related to future and mental life (to create something stable, time for oneself, love), status values (popularity, financial security, education, social position). In the end, they mentioned spiritual values (culture, art, belief in God), a holiday and a car.“ (Urbanová, Večeřa, 2003, p. 237). There were not evident more significant differences when compared to the Czech population. Slovak sociologists Lubelcová, Džambazovič (2006) followed up on this research in Slovak conditions. However, they did not focus on value orientations, but only on social and criminological characteristic features.

To reflect these theoretical starting points, we proposed the following research questions:

RQ₁: What are the importance levels of chosen values?

RQ₂: Is the importance level of chosen values in a statistically significant correlation with the female respondents' age?

RQ₃: Will there exist a statistically significant difference in the values' importance level regarding the respondents' achieved level of education?

2 Research sample

In Slovakia, the imprisonment sentence of convicted women primarily occurs in two specialised facilities – the Correctional facility Levoča (capacity of 112 places) and the Correctional facility Nitra – Chrenová (capacity of 354 places), where we carried out our research. In 2017, when we collected our data, there were, in total, 630 convicted women (basic set, Yearbook of Prison and Court Guard Service from the year 2017, 2018).

Our research sample consisted of 186 adult women, representing a percentage rate of 29,5% (almost of female respondents from the basic set). During the data collection time, the average number of convicted women in the correctional facility Nitra-Chrenová was 252 women. Thus, up to 73,8% of convicted women from the given facility participated in our research. The research set included imprisoned convicted women in all three surveillance degrees.

We divided respondents into six categories according to their age (19-21 years; 22-25 years; 26-30 years; 31-45 years; 46-60 years; 61 and more years, and finally, not mentioned age). The average age of respondents was 38,43 years (min 20; max 66). The educational level of respondents was heterogeneous; up to 50% of respondents achieved primary education (low education, level of ISCED 2A), 16,12% of respondents achieved secondary education without a school-leaving exam (medium education, level of ISCED 3C) and secondary education with a school-leaving exam (medium education, level of ISCED 3A; 3B). Only about 2,5% of respondents achieved academic education (high education, level of ISCED 6 or 7).

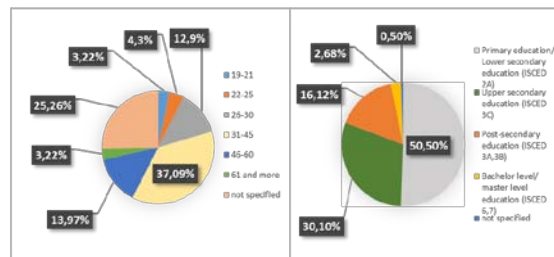


Figure 1: Categorisation of female respondents according to their age and educational level

However, statistically, it is not possible to evaluate the group of five respondents with academic education separately. For this reason, we divided the category of respondents with secondary education into two groups: a group with a school-leaving exam (level of ISCED 3A or 3B) and a group without a school-leaving exam (level of ISCED 3C). We included respondents with the academic education (level of ISCED 6 or 7) in the group with complete secondary education with a school-leaving exam. We continued processing obtained data in categories divided in this way.

2.1 Instruments

In the research, we used a questionnaire in print form, designed by the author. After a personal delivery, employees of the given facility (executive director for the Imprisonment Department, employees in duty, pedagogue) directly administered this questionnaire to convicted women. It consisted of 25 items; four items were of socio-demographic character (age, achieved education, marital status and number of children). The items were predominantly closed or semi-closed with a choice of answers, two items had a scale (a four-level and five-level scale). The research tool primarily focused on the education of convicted women in the correctional facility. However, the questionnaire also aimed at adult convicted women's values and attitudes. The Cronbach's alpha of the questionnaire is $\alpha = 0.764$

Concerning these values, we set one item where convicted women attributed the importance level to fifteen values on a four-level scale (very important – rather important – rather not important – not important at all). Subsequently, we put these importance levels into a statistical relationship with chosen demographic statistic criteria (age and educational level). Based on the methodology from the research by Urbanová, Večeřa, (2003), we formulated the basic value orientations in this item: modern materialistic values (hedonistic orientation such as Money, Work, Travelling, Art), modern idealistic values (integrating values such as Friends, Partner relationship, Children), and traditional values (sense of order in the form of Tolerance, Justice, Dignity, conservative values such as Health, Family, Education, Freedom, and finally, the religious orientation in the form of Belief in God).

2.2 Statistical analysis

We statistically processed the obtained data in the programme SPSS version 22 for Windows. We used the descriptive statistics methods (N, M, SEM, SD, Min, Max, SK, KU) and inferential statistics methods: normality tests for data distribution, correlation tests and comparative tests. To find out the relationship between the variables, we used the Spearman's correlation coefficient. Furthermore, to obtain differences regarding the research sub-groups, we applied the Kruskal-Wallis H test. We chose these tests based on the normality test results for data distribution (D'Agostino's K^2 test; Tomšik, 2017).

3 Results

In the first part of the results' interpretation, we focused on the descriptive statistical analysis of particular variables (values) and their relations to female respondents' age. The respondents

answered within the scale 1-4 (1 - not important at all; 4 - very important), and they expressed their subjective perception of 15 chosen values' importance. The average score moved from $M=2,73$ ($Sd=0,960$) to $M=3,96$ ($Sd=0,214$). The lowest score ($M<2$ points) achieved the variables Travelling and Art, whereas the highest scored variables ($M>3,9$) were Freedom, Family and Health. Despite this fact, most values achieved a relatively high score (above $M<3,5$), specifically up to five values out of fifteen variables. Subsequently, we tried to determine whether there is a statistically significant relationship between the assessed values and respondents' age. Using Spearman's *rho coefficient's* statistical analysis, we found out that a statistically significant relationship is between the age and two values: Belief in God ($rs=-0,173^*$) and Family ($rs=-0,202^*$). Between these two variables and respondents' age was a weak negative relationship. It means that older respondents perceived the Belief in God and Family as less important values. We mentioned the obtained results in Table 1.

Table 1: Descriptive statistics of research variables (values) and their correlation with respondents' age

Variables	N	M	M		SD	SEM	SK	KU	r_s (age)
			I	A					
Health	171	3,96	2	4	0,214	0,016	-6,780	50,276	-0,064
Family	174	3,95	1	4	0,354	0,027	-7,803	60,817	-0,202*
Freedom	171	3,94	1	4	0,328	0,025	-6,311	45,847	,027
Children	168	3,89	1	4	0,438	0,034	-4,859	25,699	-0,037
Work	167	3,81	1	4	0,545	0,042	-3,491	13,121	-0,086
Justice	171	3,81	1	4	0,477	0,036	-2,824	9,272	-0,079
Dignity	166	3,73	1	4	0,605	0,047	-2,633	7,336	,133
Tolerance	164	3,68	1	4	0,624	0,049	-2,103	4,305	,058
Money	166	3,65	1	4	0,592	0,046	-1,849	4,030	,067
Education	160	3,56	1	4	0,689	0,054	-1,723	3,156	,064
Partner relationship	158	3,45	1	4	0,885	0,070	-1,517	1,258	-0,028
Friends	160	3,33	1	4	0,781	0,062	-1,043	0,660	-0,070
Belief in God	167	3,10	1	4	1,019	0,079	-0,850	-0,456	-0,173*
Art	154	2,86	1	4	0,886	0,071	-0,299	-0,718	,053
Travelling	150	2,73	1	4	0,960	0,078	-0,179	-0,957	,063

Note: N- number; M- mean; Min- minimum; Max- maximum; Sd- standard deviation; SK- skewness; KU- kurtosis; r_s - correlation coefficient; *- correlation is significant on level $p<0,05$.

Another research objective was to find out differences in the respondents' value level in relation to their achieved level of education. We found out significant differences in eight variables, out of them, four variables were at the statistical significance level $p<0,05$. The greatest differences in relation to the achieved level of education were observed in these variables: *Education* ($x^2=10,158$; $p=0,006$), *Freedom* ($x^2=7,389$; $p=0,025$), *Children* ($x^2=8,617$; $p=0,013$) and *Work* ($x^2=6,568$; $p=0,037$). The level of responses in the mentioned variables does not have the same tendency. In the variables Family, Education and Work, respondents with secondary education (without a school-leaving exam) achieved the highest average score. In contrast, other groups achieved a significantly lower score, specifically the respondents with secondary education with a school-leaving exam and academic education. The difference in other variables was significant at the level $p<0,1$, specifically: *Money* ($x^2=5,666$; $p=0,059$), *Family* ($x^2=5,260$; $p=0,072$), *Justice* ($x^2=4,983$; $p=0,083$) and *Dignity* ($x^2=4,780$; $p=0,092$). In the variables Justice and Dignity, respondents with secondary education (without a school-leaving exam) again had the highest average score. In the variable Family, respondents with primary

and secondary education (without a final school-leaving exam) obtained a comparable score, whereas respondents with secondary education with a school-leaving exam and academic education had a significantly lower average score. We observed a difference in a tendency only in the variable Money. Even though respondents with primary education and secondary education (without a school-leaving exam) had a comparable average score in this variable, respondents with primary education achieved here their highest average score. We did not find any significant difference in the variables Travelling, Art, Belief in God, Friends, Partner relationship, Tolerance and Health in relation to respondents' age. We mentioned and depicted the obtained results in Table 2 and Figure 1.

Table 2: Differences in values' level in relation to respondents' achieved level of education (H test)

Variables	Level code of ISCED	N	M	Mr	df	χ^2	p
Money	2A	82	3,71	89,70	2	5,666	0,059
	3C	53	3,66	81,33			
	3A; 3B; 6; 7	31	3,48	70,82			
Education	2A	80	3,43	73,35	2	10,158	0,006
	3C	49	3,82	95,22			
	3A; 3B; 6; 7	31	3,48	75,68			
Freedom	2A	88	3,95	86,16	2	7,389	0,025
	3C	52	4,00	90,00			
	3A; 3B; 6; 7	31	3,77	78,84			
Family	2A	90	3,98	88,04	2	5,260	0,072
	3C	53	4,00	89,00			
	3A; 3B; 6; 7	31	3,81	83,35			
Children	2A	83	3,96	87,54	2	8,617	0,013
	3C	54	3,87	85,69			
	3A; 3B; 6; 7	31	3,74	74,31			
Work	2A	86	3,80	87,70	2	6,568	0,037
	3C	54	3,89	90,72			
	3A; 3B; 6; 7	31	3,68	73,06			
Justice	2A	83	3,82	85,74	2	4,983	0,083
	3C	53	3,89	87,23			
	3A; 3B; 6; 7	31	3,68	73,82			
Dignity	2A	84	3,65	79,08	2	4,780	0,092
	3C	51	3,86	91,88			
	3A; 3B; 6; 7	31	3,74	81,68			

Note.: N- number; Min- minimum; Max- maximum; M- mean; Mr- Mean rank; df- degrees of freedom; χ^2 - Chi statistics for Kruskal-Wallis H test; p- level of statistical significance.

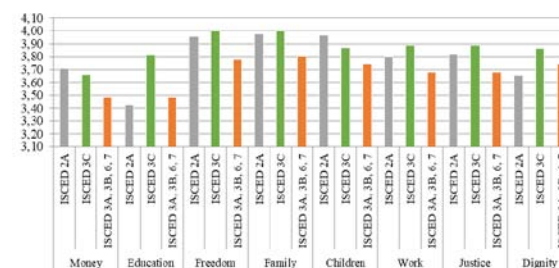


Figure 2: Differences in values' importance level in relation to respondents' achieved level of education – depiction of groups with a significant difference

4 Discussion and conclusion

The highest scored variables by adult convicted women were traditional (conservative) values Health, Family and Freedom, that is consistent with the Czech research results from 2002. The preference of the value Health as the most significant scored value copies the majority society's preference. The second most significant scored value is the value Family. We can attribute this result to the fact that, in many cases, convicted women are also wives and mothers (the value Children achieved the fourth place in the importance level scale). Obtained data from the demographic items verify this preference – up to 81.2% of respondents are mothers. In average, every convicted woman has 3,5 children (min 1, max 13). In the marital status item, almost every third convicted woman (30,64%) stated that she is married or a mate, which means that she has a stable partner relationship. Although the value Partner relationship achieved a relatively high score, this value occupied the eleventh position out of

fifteen items in the final rankings. The third position belongs to the value of Freedom. Similarly, Justice (6th position) is closely related to the imprisonment and subsequent isolation. In general, we can say that Slovak convicted women perceive the following values as the most significant values in their lives: traditional values (Health), integrating values aimed at interpersonal relationships and family structures (Family, Children) and traditional values reflecting the sense of order (Freedom, Justice, Dignity, Tolerance) concerning their current situation and environment.

Spiritual values such as Travelling, Art, Belief in God achieved the lowest score. This result is consistent with the Czech research results again. The fact that the value of Travelling achieved the lowest score among all fifteen variables is related to convicted women's social situation, i.e. with the strict isolation they have to live. The second variable with the lowest score was the value of Art. The imprisonment sentence fulfils the retributive function. If it also fulfilled the re-educational or re-socialising function, the support and development of spiritual values should belong to the essential tools for re-socialisation, enculturation, cultivation and personalisation of adult people's personalities. The Slovak penitentiary system provides cultural-educational activities which represent essential tools for re-socialisation. Moreover, there is a work position of a pedagogue in the educational system who carries out cultural-educational activities and is responsible for their realisation. Correctional facilities organise various cultural-educational events such as debates with famous people from social life (artists, actors, painters, singers) or concerts. Despite this fact, art is not important for convicted women.

A very interesting result is the low-scored value Belief in God (the third value with the lowest score). Based on *Spearman's rho coefficient's* statistical analysis, we obtained a weak negative relationship ($r_s = -0,173^*$) between the Belief in God and convicted women's age. It means that older convicted women attribute the lowest importance to this value. In their isolation, we would assume that they would recur to belief, religion and God more and that this value would have greater importance for them. According to the Decree no.368/2008 about the Imprisonment Policy (§ 68), correctional facilities provide spiritual and pastoral services and activities such as masses, debates, pastoral visits, religious sacraments and consecrations. They also lead study groups, provide religious literature, solve social problems and provide cultural-educational activities. They have rooms for educating and supporting convicted women in their re-socialisation. These facilities also provide specialised preparation for its employees. These activities include holy masses, homilies, dialogues, catecheses, biblical lessons, singing choirs, TV and videos, cultural programmes, lectures and debates, prayer meetings, Rosaries and the Stations of the Cross prayers. Also Clear, Hardyman, Stout, Lucken, Dammer (2000) interpreted the Belief in God by convicted women, and they defined its importance in this specific group as intrinsic orientations (dealing with guilt, finding a new way of life, dealing with the loss – especially of freedom), and extrinsic orientations (safety, material comforts, access to outsiders, inmate relations). However, it is evident from our research that, despite their isolation, convicted women do not consider this spiritual value, Belief in God, very important.

However, a statistically significant relationship (a weak negative relationship) was evident to the value Family ($r_s = -0,202^*$) concerning convicted women's age. Older convicted women perceive this value as less important as well. The research set considered Family to be the second most important value, but there is a reverse situation by older convicted women. This attitude may be related to the higher age of their children who are already not so dependent on their mothers (convicted) and persistent isolation and weakening of extramural relationships. Vanková (2018, p. 580) also points to this fact, and she says that „in most cases, a person released from the execution of a prison sentence has no place to return to, is jobless, homeless, and his closest family, friends and acquaintances turned their backs to him.“ Nedbálková (2003, p. 481) compares the prison

environment to various microworlds where roles from social macro cosmos take place, and convicted women focus on creating relationships there. For this reason, they may create relationships that substitute extramural relationships and copy the world outside. There even arise the so-called pseudo families in women's prisons. From the sociological point of view, we can perceive these families as „an effort to bring along the everyday life in the facility to the structures of broader society to achieve a better reality for their lives.“ Pseudo families are „direct conscious substitutions of family relationships, and they alleviate the pain in prison everyday life. However, these relationships cannot be reduced only to friendly relationships. Friendships differ from family relationships, and they emerge among their peers.“ (Heffernan, 1972, p. 88, cited in Nedbálková, 2003, p. 481). Lukáč (2015, p. 54) also emphasises the specific features of life in the penitentiary environment. According to him, prisonization, e.i. the adjustment and acceptance of prison rules and norms, is „often the only way how to survive in prison without severe damage to mental health. However, it is the way of gradual depletion of such behavioural patterns that are indispensable for healthy acting in freedom“.

Analysing the relationship between values and achieved level of education, we found out that respondents with education 2A and 3C (low education) perceive values Money, Freedom, Family, Children, Job and Justice as more important when compared to convicted women with education 3A and 3B (medium education). However, we observed a reverse tendency in the variable Dignity – respondents with higher education scored this variable as more important than respondents with the lowest education. Paradoxically, the value Education achieved the lowest score by convicted women with primary education (low education). It is evident that they are not aware of the need and importance of education. There can be several reasons for this attitude: incarcerated learners are less educated, have a higher drop-out rate and a more often negative experience with education, they often have learning difficulties they are addicted to drugs or alcohol and are more impulsive and frustrated (Champion, 2012, Ross, Fabiano, 1985, cited in Lukáčová et al., 2018, p. 64-65).

4.1 Research limitations

Various factors have an impact on the validity and reliability of quantitative research in penitentiary conditions. The main reason lies in the fact that, in Slovak conditions, it is impossible to carry out research directly with accused and convicted people. These factors include administering a questionnaire, the time provided for its filling, possible (undesired) cooperation between respondents when answering the questionnaire items. Another relevant factor is understanding the questionnaire items – convicted people form a heterogeneous group, and there are respondents of various educational and personal levels. Even though researchers try to formulate the items as clearly as possible, they cannot be sure that all convicted people will understand them. We could not use the standardised research tool in this environment because its length and complexity would provide less valid results than our designed tool. For this reason, it is not possible to compare our research results with the results which fulfil the norms. Comparing with other researches is more difficult as well. To achieve the research objectivity, researchers must ensure the objective interpretation of obtained results. It is crucial to take into account that the penitentiary world differs from the world outside. This difference is valid also for the words and their meanings – convicted people can perceive them with a different meaning than the majority society. Nedbálková (2003) mentions an example of this difference. She found out that convicted women perceive the concept "friend" as a reliable person in prison, as a person for a sexual relationship. However, there is a reverse situation in the lesbian community and broader public too.

Literature:

1. Clear, T. R., Hardyman, P. L., Stout, B., Lucken, K., Dammer, H. R.: The Value of Religion in Prison. An Inmate Perspective.

- Journal of Contemporary Criminal Justice*, 2000, 16(1), pp. 53-74. ISSN 1552-5406.
2. Cochrane, R.: The Structure of Value System in Male and Female Prisoners. *The British Journal of Criminology*, 1971 (retrieved November 14, 2020), 11(1), pp. 73-79. ISSN 1464-3529.
 3. Crewe, B., Hulley, S., Wright, S.: The Gendered Pains of Life Imprisonment. *The British Journal of Criminology*, 2017, 57(6), pp. 1359-1378. ISSN 1464-3529.
 4. Crowley, M., (ed.): *The rehabilitation and social reintegration of women prisoners. Implementation of the Bangkok Rules*. Penal Reform International and Thailand Institute of Justice, 2019. 56 p. ISBN 978-1-909521-65-0.
 5. Kruttschnitt, C., Gartner, R.: Women's Imprisonment. *Crime and Justice*, 30(3), 2003, pp. 1-81. ISSN 0192-3234.
 6. Lubelcová, G., Džambazovič, R.: Kriminalita žien a ženy vo väzení na Slovensku. *Sociológia*. 38(2), 2006, pp. 103-126. ISSN 1336-8613.
 7. Lukáč, M.: *Resocializácia dospelých*. Prešov: Vydavateľstvo Prešovskej univerzity, 2015. 70 p. ISBN 978-80-555-1320-1.
 8. Lukáčová, S., Lukáč, M., Pirohová, I., Lukáč, E., Hartmannová, L.: Prison education in Slovakia from the teacher's perspective. *Journal of Prison Education and Reentry*, 2018, 5(1), pp. 63-79. ISSN 2387-2306.
 9. Nedbálková, K.: Má väzenie strední rod? aneb Maskulinita a femininita ve väzenských subkulturách. In *Czech Sociological Review*, 2003, 39(4), pp. 469-486. ISSN 0038-0288.
 10. Nedbálková, K.: Etnografie (Jedna ruka kreslí druhou aneb Jak se dělá etnografický výzkum). Svaříček, R., Šedřová, K. et al. *Kvalitativní výzkum v pedagogických vědách*. Praha: Portál, 2007. pp. 112-126. ISBN 978-80-7367-313-0.
 11. Průcha, J., Veteška, J.: *Andragogický slovník*. Praha: Grada Publishing, a.s., 2014. 320 p. ISBN 978-80-247-4748-4.
 12. Tomšík, R.: *Kvantitativný výskum v pedagogických vedách : úvod do metodológie a štatistického spracovania*. Nitra: UKF, 2017. 505 p. ISBN 978-80-558-1206-9.
 13. Urbanová, M., Večeřa, M.: Ženská kriminalita – hodnotové orientace a postoje k právu delikventních žen. *Časopis pro právní vědu a praxi*, 2003, 11(3), pp. 232-240. ISSN 1805-2789.
 14. Vanková, K.: Social Curatorship in Provision of Social Services in Post-Penitentiary Care. In *The Journal of Social Sciences Research*, 2018, 4(12), pp. 571-581. ISSN 2411-9458.
 15. Vyhláška č. 368/2008 Z. z.. Vyhláška Ministerstva spravodlivosti Slovenskej republiky, ktorou sa vydáva Poriadok výkonu trestu odňatia slobody (v znení neskorších predpisov)
 16. Zbor väzenskej a justičnej stráže, 2018. Ročenka Zboru väzenskej a justičnej stráže za rok 2017 [online]. Bratislava [accessed on May 19th, 2020]. Available at: <https://www.zvj.s.sk/file/df469434-fffe-4d23-8146-063eb389b0eb.pdf>

Primary Paper Section: A

Secondary Paper Section: AM

SEXTING AND FAMILY ENVIRONMENT OF CHILDREN AND ADOLESCENTS

^aTOMÁŠ TURZÁK, ^bVIERA KURINCOVÁ, ^cKATARÍNA HOLLÁ, ^dHANA ZELENÁ

^{a,b,c,d} *Department of Education, Faculty of Education, Constantine the Philosopher University in Nitra, Dražovská 4, 949 74 Nitra, Slovakia*
 email: ^atturzak@ukf.sk, ^bvkurincova@ukf.sk, ^ckholla@ukf.sk, ^dhzelenaa@ukf.sk

This article complements the solutions of VEGA 1/0100/18 research project – Self-sexting and peer-sexting and educational influence opportunities.

Abstract: Our study addresses sexting as the expanding online phenomenon that is now closely related to the adolescence phase of children and teenagers. The main research goal was to investigate the adolescents' family environment and quality of their relationships with parents, and analyze the subsequent differences of pursuing self- and peer-sexting behavior. We examined 790 respondents aged 12–18 who came from all parts of Slovakia. The achieved research results indicate that two-parent families where the stable environment and good relationships prevail can protect the adolescents and reduce the frequency of self- and peer-sexting. On the other hand, the adolescents who grow up in single-parent and reconstructed families or joint custody describe their relationships with parents as rather complicated or poor. As a result, they are statistically more inclined to pursue the individual forms of self and peer-sexting.

Keywords: family environment, adolescents, sexting, adolescent sexting, cyberspace.

1 Introduction

We can see that the characteristics of the 21st century and 'global world' are present in various spheres of our lives. Parents have to deal with new child-raising and adolescence-related issues their ancestors could have hardly imagined. Compared to the past, the family conditions these children are being raised in are now different in many ways. Their childhood and adolescence are significantly affected by means of digital communication that are also involved in the education and socialization process, development of relations with the outside world, free time, system of values, knowledge acquisition, etc. Such means of digital communication apparently have a number of positive effects; however, they also pose diverse risks the educators have to face.

Phenomena related to the digital world have become the current concern of experts, researchers and specialists working in different fields. Education and pedagogical studies (that cooperate with the other sciences) treat them as new unexplored risks to be encountered by children and youth as they enter cyberspace and perform online activities. One of such issues refers to the online sexual behaviors among youth today. The current research is being challenged by the relatively new adolescent sexting issue. J. Burén (2018), states that sexting has recently reached the attention and interest of many professionals and scholars. Rather positive contributions of related scientific studies are thus the research data which helps us better understand this phenomenon. The problem is that most theoretical knowledge and empiric findings are based in the US. It is therefore disputable to what extent this data is applicable for European countries (Baumgartner, S. E. et al., 2014).

In the above-mentioned context, the present study addresses sexting itself and the impact of family environment on sexting occurrence among children and adolescents. Our goal is to find the answers on the national level.

1.1 Sexting as a studied online phenomenon

Although the sexting activity is rather common for the adults and adolescents, the actual concept of 'sexting' is not as frequent in the pedagogical, education, psychological, medical or judicial sciences. The term itself combines two words: 'sex' and 'texting'.

Sexting is most often defined as sending/receiving sexual and sexually explicit electronic messages (e.g. SMS, MMS and

emails), materials or contents (such as nude or half-naked photos and videos). The age of such communication actors has its pedagogical and psychological, as well as social, moral and legal aspects.

K. Martinez-Prather and D. M. Vandiver (2014) claim that the generally accepted definition of sexting does not exist yet. They draw attention to the severe methodological impacts the absence of specialized researchers' consensus has in this case (compare Barrense-Dias, Berchtold, Surís and Akre, 2017). Sexting generally includes the adolescents' activities (such as circulating sexual contents among peers) which seem to result from this millennium's hyper-sexualized culture. As the number of children and adolescents who regularly use their cellphones increases, the subsequent risks of such sexting activities also rise. Another tendency applies to the parental control and restrictions for the adolescents' use of cellphones, i.e. more frequent control reduces the chances of sexting behavior.

Digital communication media and Internet have considerably changed the way the adolescents communicate and make contacts. Apparently, sexting became one of these communication methods. Young people have their own intimate desires to share. If they want to express them harmlessly during their personal and sexual development or through sexting, we should be sensitive to their decisions. Yet, we must be aware that the misuse of such intimate materials can have serious consequences. From this perspective, the issue is indeed controversial and disputable. The perception of Internet as a popular way to pursue sexual activities is also supported by the Triple A Engine Theory (Cooper, A., 1998). It cites easy accessibility, affordability and anonymity as explanations. This theory was later complemented by other researchers. Hertlein & Stevenson (2010) related the Internet's popularity and the Triple A Engine Theory to intimacy problems in relationships and extended the original Cooper's concept to additional A-explanations – approximation, acceptability, ambiguity and accommodation (see Cooper, A. et al., 2000, Jonsson, L. S., 2015). K. Young et al. propose the ACE model, incorporating anonymity the Internet offers, convenience of performing such activities comfortably from home and immediate escape from sexting as factors salient to the Internet (Griffiths, D.M., 2017). The other Triple C Engine Theory (Reinhold, 2000) regards the Internet as an interactive medium in which all participants are not only recipients, but also potential senders. The Internet provides opportunity for communication, collaboration and social life, as well as construction of virtual communities (Leiblum, S., Doring, N., 2002, In Cooper, A. ed. 2002). To examine the motivating factors of sexting, K. Martinez-Prather and D.M. Vandiver (2014) apply Cohen and Felson's criminological Routine Activities Theory which holds that the criminal activity occurs when three essential elements of crime converge in space and time: the offender, an attractive target and the absence of capable guardianship. As for sexting, the offender is sext sender (sexter), the attractive target is sext receiver and the capable guardianship is provided by educator. Sexting is not possible if one of these elements is absent.

The adolescents' motives to perform sexting activities are of different kinds. Based on the extensive references, J. Burén (2018) states that sexting is often a fun way to flirt or attract someone, it can be also a constructive part of being in a romantic relationship. Some adolescents see sexting as a safer pursuit of sexual activities – compared to the offline interpersonal sexual interaction. Girls use sexting to gain popularity and boys' attention, i.e. to assure themselves of their good and attractive looks. Young men are not as urged to do such activities as girls. Teenage girls are often directly and indirectly pressured by their surroundings or boyfriends they fear to lose without sexting. Burén further explains that motivation is a significant factor in the evaluation of sexting as an acceptable, inappropriate or unacceptable activity. Sexting is now a natural part of youth's sexual development and rather frequent among the older

adolescents. As a matter of fact, this behavior mostly involves romantic couples and partners.

Similarly, K. Hollá (2017), who addressed the issue of sexting in Slovakia from the theoretical and experimental point of view and introduced the methodology of cyberbullying and sexting detection, states that sexting can be perceived as a part of relationships where partners want to flirt, develop romantic relationship, draw the attention or initiate sexual activities. However, Hollá also warns that sexting may occur as a short-term cyber aggression (the misuse of texts and photos to dishonor or humiliate someone) or a long-term cyberbullying (the intentional and repetitive misuse/abuse of intimate photos or information to dishonor the victim). Based on the works of K. Kopecký, R. Szotkowski and V. Krejčí, in most cases, Slovak and Czech adolescents use sexting to maintain romantic relationships, have fun, give in to social pressure of the consumer society and take revenge on the others.

1.2 Family environment as a possible adolescent sexting determinant

Although there are many scientific and theoretical works on the technological aspect of sexting (the use of digital media to send and receive sexts), various sexting forms and motivations or related risks, fewer sources deal with sexting predictors. These predictors can relate to the inner characteristics of individuals and to the influences of the social environment that shapes their personalities. Inspiring researches were carried out by Swedish author L. S. Jonsson. Even though Jonsson detected only small sociodemographic differences between the adolescent sexters and non-sexters, she indicated the existence of correlations between online sexual behavior and poor parental relationships. Still, this hypothesis requires further investigation. Jonsson says: "...multivariate analyses, however, did not support an association except for a correlation between sending a sexual picture and having a controlling and less caring mother (both genders) and experiences of voluntary online sexual exposure and having an overprotective/controlling father (boys)." Based on the work of S. E. Baumgartner et al., (2012), L.S. Jonsson states that her research „only partially confirmed other studies which found young people with online sexual behavior come from less cohesive families than those who do not take such risks." Based on the work of Bartholomew and Horowitz (1991), she applies the attachment theory (J. Bowlby) in this context. The child – parent relationship is deemed to be significant as it affects the other interpersonal and close relationships of a child, such as relationships with romantic partners or peers. Similar findings are achieved in the research by Sorbring et al. (2014) that Jonsson mentions in her works. The research showed that young people with online romantic and sexual experiences had poorer relationships with their parents and peers. Additionally, certain research data gained by L. S. Jonsson suggest „that the group of youth with an online sexual behavior felt significantly lonelier than their counterparts without such experience (unpublished data). Their loneliness might lead them into a more social life online and where some contacts might result in sexual encounters, also sex selling" (Jonsson, L. S., 2015). We believe there are some parallels with our research findings, as well.

Many of our previous studies involved family and various aspects of its functions. We relied on U. Bronfenbrenner's Ecological Systems Theory (Bronfenbrenner, U., 1979) which served as our theoretical background. According to Bronfenbrenner, child development is involved in the complex system of relationships affected by multiple levels of environment – from the immediate family and school environment to the wider system of values presented to children. In case of family microenvironment, we have to account for the bidirectional and reciprocal relationships (parents affect children, but children's personalities also influence parents' behavior). As for the sexual development of an individual, we should keep in mind the complexity of such process incorporating biological, psychological, cognitive, socio-cultural and environmental factors. Each adolescent deals with them differently.

When addressing the adolescent sexting, we were inspired by L. S. Jonsson (2015) and J. Burén (2018) who had also applied Bronfenbrenner's Ecological Systems Theory (2005). This model includes four important integrating components – process, person, context and time – which take part in adolescent development. There is a dynamic relationship between the individual and their social context, in which the biological, cognitive, emotional and behavioral characteristics of individuality interact with the social context at different levels. This model consists of a number of levels – the microsystem, the mesosystem, the exosystem, the macrosystem (original levels of system) and also the chronosystem.

The individual characteristics are shaped by the social environment. As a result, the adolescents actually use them to intervene with this environment. Sexuality-wide, these characteristics are also predispositions (such as hormonal changes and the onset of puberty) that affect the sexual development and behavior of the adolescents. The adolescence is predominantly influenced by family microenvironment. Family should answer the questions about adolescence, physical and psychological growth, sexual maturation and behavior, as well as related applicable norms. Parents are supposed to be the role models for their children in terms of such behavior and preserve the values they expect them to hold onto. The early sexuality of children usually depends on numerous factors, such as the quality of family relationships, mutual respect and tolerance, understanding, openness and honesty when discussing adolescent issues, support and specific parenting style. Families are now challenged by the new phenomenon of media (techno-microsystem) which is crucial for the observed issue. It is also important to take the adolescents' relationships and communication with their classmates, peers and friends into account.

L. S. Jonsson points out that multiple researches demonstrate the connection between poor parental interest/childcare and the online sexual at-risk behaviors, i.e. between less cohesive families and possible sexting. Researchers such as D. Wight, L. Williamson and M. Henderson (2006) also studied the power of parental influence and family environment over online sexual behaviors of adolescents. Their Scotland-based research results (but also the other investigations) suggest that several factors, e.g. family structure and relationships (in particular), bond between parents and their child, parental control and the ability to talk about children's sexual development and life, are highly important for the sexual behavior of adolescents. Wight, Williamson and Henderson, however, claim that most findings are disputable since they mainly result from the adolescents' insights and do not rely on their parents' point of view. This issue is rather complex so it is expected that quantitative but mostly qualitative strategies are to be used in the future researches.

Even though the subject matter of our study is first and foremost related to the family microenvironment, we would like to touch upon the other levels of Bronfenbrenner's model. The closest level to the microsystem is the mesosystem. It refers to connections among microsystems (home, school and neighborhood) that support and foster children. In other words, it functions as the connection between different parts of the microsystem. The exosystem is represented by settings that do not involve children and young people but affect their experiences (it is larger social surrounding). Its importance lies in the sexual education and influence of mass media on both normative and at-risk adolescent sexual behaviors. The exosystem also contains social networks for parents run by people who can provide parental advice and support. The macrosystem includes cultural values, agreed practices, customs and laws of particular society. Again, cultural values and existing laws can influence adolescent sexual development and behavior. Chronosystem as a final level covers major transitions in life of an individual and various environmental and historical events occurring in the personality development. These events (e.g. changes in family structure such as divorce, parents' separation, moving to another city, etc.) tend to change the

interactions of a child with the rest of the system (Jonsson, L. S., 2015).

In the next section, we took a number of foreign research findings into consideration and framed our own research goals. Although the issue of sexting predictors is examined and investigated abroad, it falls far below the other sexting researches. As for Slovakia, the systematic researches on this issue are likewise rather rare. We thus tried to explore one of the crucial determinants affecting the frequency and incidence of the adolescent sexting and identify its impacts on this at-risk phenomenon. Family structure and environment, as well as the quality of family relationships are all essential factors that influence sexting occurrence.

The main goal was to look into the structure of the adolescents' family environment, investigate the quality of their relationships with parents and analyze the subsequent differences of pursuing self- and peer-sexting behavior.

We wanted to find out what impact the family structure and quality of relationships with parents had on:

- self-sexting, i.e. online presentation of one's own sexuality via submission of the intimate material
- peer-sexting, i.e. submission of classmates'/friends' sexual or sexually explicit materials and requesting them for one's own account

2 Methods

Our research involved 790 adolescent respondents aged 12 – 18. The research sample consisted of 376 boys (47.6%) and 414 girls (52.4%). This selection is based on the applied stratified sampling strategy.

The results were obtained from the distributed custom questionnaire. The reliability of this research instrument was verified on the basis of Cronbach's alpha statistical analysis. Our questionnaire contained factual inputs and questions to help us explore the individual predictors of adolescent sexting. For individual scales, the research instrument reliability ranged from very good (0.936) to questionable (0.681). Distributed questionnaire embraced multiple interrelated problems. Given the subject matter of this research study, we only present results associated with the differences in adolescent sexting frequency that arise from particular typology of family environment and relationships. Adolescent sexting frequency was evaluated on the scale of 5 points: 1 – never, 2 – once, 3 – twice, 4 – multiple times, 5 – every day. ANOVA test was used as a test criterion to determine the statistical significance level of $p=0.05$.

3 Results

This section includes the above-mentioned results related to the differences in adolescent sexting frequency based on specific structure of family environment. Important findings were achieved for both self- and peer-sexting questions and their subsequent answers. Table 1 shows the data acquired from the investigation of self-sexting as sending and publishing sexual/sexually explicit photos of the adolescent. The achieved statistical significance of $p=0.016$ suggests that the frequency of forwarding one's own intimate photo at least once a month is higher for the adolescents who live in a less stable family environment and structure (e.g. joint custody, single-parent or reconstructed family). It further indicates that the stability of family environment is a protective factor that lowers sexting frequency. Considering the structure of family environment, it is interesting, yet not surprising, that posting/publishing one's own intimate material online is not statistically significant. This fact is rather reasonable as we know that social networks include profiles of respondents' friends, teachers, educators, parents and other acquaintances. As a result, pubescent children and adolescents do not share or post their intimate photos on the Internet. As opposed to the private romantic or serious

relationships and friendships, the previous research (Hollá, K., 2017) showed that the adolescents were more careful with public presentation of their intimate photos or videos.

Table 1. Impact of different family structures on self-sexting no.1

Sending sexts	Family structure	N	AM	SD	SEM	df	F	p
Sending nude photos	two-parent family	510	1.34	0.832	0.037	4	3.057	0.016
	two-gener. family	79	1.14	0.525	0.059			
	single parent	126	1.46	1.086	0.097			
	joint custody	28	1.71	1.301	0.246			
	reconstr. family	47	1.47	0.929	0.136			
posting one's own photo online	two-parent family	510	1.05	0.343	0.015	4	2.180	0.070
	two-gener. family	79	1.05	0.316	0.036			
	single parent	126	1.15	0.608	0.054			
	joint custody	28	1.14	0.591	0.112			
	reconstr. family	47	1.15	0.510	0.074			

Explanatory notes: N – number; AM – arithmetic mean; SD – standard deviation; SEM – standard error of mean, F – test criterion; df – degrees of freedom; p – statistical significance level

Peer-sexting is defined as sending and circulating the intimate materials among peers. In Table 2, the achieved statistical significance of $p=0.005$ suggests the adolescents who live in a joint custody forwarded the nude photo of a classmate/friend or another person more often. The statistical significance of $p=0.004$ further implies that the frequency of requesting such intimate materials was also higher for this group. According to the research results, children raised in a joint custody sent their classmate's (AM=1.79), friend's or someone else's (AM=1.71) intimate material and requested it (AM=1.71) more often than children who are raised by two-parent or multi-generation families.

The adolescents from single-parent family (AM=1.44) also admitted to send the sexual photo of another person more often than respondents from two-parent (AM=1.15), multi-generation (AM=1.13) and reconstructed (AM=1.23) families. Worth to mention is this group's statistical significance of forwarding the intimate photos of familiar person. It turned out that children raised by one parent were more inclined to forward the intimate photos than children from the other types of family.

We can thus assume that two-parent, multi-generation and reconstructed families create the environment of higher parental control and better mutual communication between parents and their children. The adolescents raised in such families tend to give a different online self-presentation than those living in single-parent families or joint custody.

Table 2. Impact of different family structures on self-sexting no.2

Variable	Group	N	M	SD	SEM	df	F	P
sending nude photo of a classmate	two-parent family	510	1.23	0.737	0.033	4	3.776	0.005
	multi-generation family	79	1.16	0.492	0.055			
	single-parent family	126	1.26	0.718	0.064			
	joint custody	28	1.79	1.397	0.264			
	reconstructed family	47	1.28	1.036	0.151			
sending nude photo of another person	two-parent family	510	1.33	0.870	0.039	4	3.240	0.012
	multi-generation family	79	1.10	0.469	0.053			
	single-parent family	126	1.43	0.916	0.082			
	joint custody	28	1.71	1.329	0.251			
	reconstructed family	47	1.30	0.689	0.100			
requesting someone to send their photo	two-parent family	510	1.23	0.685	0.030	4	3.831	0.004
	multi-generation family	79	1.23	0.639	0.072			
	single-parent family	126	1.40	0.939	0.084			
	joint custody	28	1.71	1.329	0.251			
	reconstructed family	47	1.19	0.647	0.094			
forwarding nude photo of familiar person	two-parent family	510	1.15	0.591	0.026	4	5.745	0.000
	multi-generation family	79	1.13	0.435	0.049			
	single-parent family	126	1.44	0.984	0.088			
	joint custody	28	1.39	0.956	0.181			
	reconstructed family	47	1.23	0.633	0.092			

Explanatory notes: N – number; AM – arithmetic mean; SD – standard deviation; SEM – standard error of mean, F – test criterion; df – degrees of freedom; p – statistical significance level

Following section contains self- and peer-sexting results based on the quality of relationships with parents. As shown in Table 3 and 4, self- and peer-sexting tend to occur if the respondents' relationships with parents are rather complicated and poor. The achieved statistical significance of $p=0.000$ and $p=0.025$ for self-sexting (Table 3) suggests the frequency of forwarding one's own intimate photo at least once a month is higher for the adolescents who have poor or complicated relationships with their parents, i.e. the quality of mutual family relationships is lower. The adolescent respondents with such poor or complicated relationships (AM=1.84) also requested the nude photos more often than those who specified a better quality of family relationships.

The achieved statistical significance of $p=0.000$ to $p=0.013$ for peer-sexting (Table 4) indicates that respondents who have poor or complicated relationships with parents sent and forwarded their classmates' or friends' intimate photos at least once a month.

Table 3. Impact of family relationships on self-sexting no.1

Sending sexts	Family relationships	N	AM	SD	SEM	df	F	p
sending one's own nude photo	very good	456	1.34	0.844	0.040	2	3.706	0.025
	average	281	1.33	0.894	0.053			
	complicated	44	1.70	1.112	0.168			
requesting someone to send their photo	very good	456	1.25	0.714	0.033	2	13.626	0.000
	average	281	1.21	0.715	0.043			
	complicated	44	1.84	1.219	0.184			
publishing one's own photo online	very good	456	1.06	0.349	0.016	2	1.244	0.289
	average	281	1.11	0.530	0.032			
	complicated	44	1.05	0.211	0.032			

Explanatory notes: N – number; AM – arithmetic mean; SD – standard deviation; SEM – standard error of mean, F – test criterion; df – degrees of freedom; p – statistical significance level

Table 4. Impact of family relationships on self-sexting no.2

Sending sexts	Family relationships	N	AM	SD	SEM	df	F	p
sending nude photo of a classmate	very good	456	1.21	0.727	0.034	2	10.001	0.000
	average	281	1.20	0.685	0.041			
	complicated	44	1.73	1.208	0.182			
sending nude photo of another person	very good	456	1.31	0.816	0.038	2	4.621	0.010
	average	281	1.30	0.827	0.049			
	complicated	44	1.70	1.212	0.183			
forwarding nude photo of familiar person	very good	456	1.19	0.670	0.031	2	4.391	0.013
	average	281	1.18	0.626	0.037			
	complicated	44	1.50	1.045	0.158			

Explanatory notes: N – number; AM – arithmetic mean; SD – standard deviation; SEM – standard error of mean, F – test criterion; df – degrees of freedom; p – statistical significance level

4 Discussion

Sending one's own intimate photo or sexual/sexually explicit photos of classmates, friends and peers has become a certain behavioral standard, common for the current generation of pubescent and adolescent children. This generation does not see sexting as the at-risk phenomenon that could be possibly dangerous. The adolescents rather think it is an opportunity to express their sexual interests and show their intimacy and self-presentation. Their decision to pursue the online sexual behavior, such as taking photos, recording videos or texting, is an outcome of the short-term thinking. Our research goal was to inspect the adolescents' family environment, observe the quality of their relationships with parents and detect the subsequent differences in self- and peer-sexting behavior. The quality of respondents' relationships with parents made significant changes to several areas – sending nude photos of themselves, classmates or another person, as well as requesting such materials and forwarding nude photos of familiar person.

We found out that children raised in joint custody had been more active in sending their own intimate photos than children growing up in two-parent and multi-generation families. They also sent their classmates' or friends' nude photos more often. It further turned out that, besides joint custody, the pubescent and adolescent children raised in single-parent and reconstructed families had been more engaged in the individual forms of self- and peer-sexting.

The cause supposedly lies in the lower parental control of single-parent and reconstructed families or joint custody. Another reason might be that pubescent and adolescent children from single-parent families who have poor or complicated relationships with parents desire to draw the online attention. In the world of online progress, self- and peer-sexting can be also treated as a part of natural maturation process. Nevertheless, the family situation seems to be more difficult for young people raised in joint custody when compared to two-parent families.

We realize the need to compare the family typology and quality of relationships with parents on one hand, and examine the correlations between the individual variables which will be tackled in the next study.

The achieved research results indicate that two-parent families where the stable environment and good mutual relationships prevail can protect the adolescents and decrease the frequency of self- and peer-sexting. Statistically speaking, the adolescents from the incomplete families are more inclined to succumb the online sexual behavior than respondents from the other family types. These findings are also supported by S. E. Baumgartner et al. (2014) who found out that the incidence of online sexual behavior was higher for young people living in less cohesive families as opposed to those who came from complete ones. Based on the quality of relationships with parents, the respondents' answers differed considerably in several observed areas. Lower quality of mutual family relationships (especially poor or complicated relationships) statistically enhanced the occurrence of adolescent self- and peer-sexting.

Such quality might result from lower parental control, trust and intensity of mutual contact in families where poor or complicated relationships dominate. Again, these findings are widely supported by foreign researches. Worth to mention is a Swedish research by L. S. Jonsson (2015) who detected the link between at-risk online sexual behavior of adolescents and poor relationships with parents. In fact, Jonsson states there is a correlation between sending one's own nude photo and authoritative parenting style. M. Temple Smith – S. Moore – D. Rosenthal (2015) also believe that individual parenting styles have a major impact on the level of adolescents' online sexual behavior. They emphasize the importance of the quality of relationships and the overall support of adolescents in this stage of life.

5 Conclusions

There are multiple motives for the adolescent sexting. Young people take it as the easier way of texting or chatting with people they trust. At the moment of sending sexts, they do not realize their inability to control what happens next with the message content. Sent and supposedly forgotten messages can reappear and impair one's life even after several years. Sexting might not at all end as an innocent activity should. As a matter of fact, it can have severe and damaging consequences for the adolescents. When defining the risks of sexting, the most frequent phenomena are as follows: cyberbullying, emotional distress (the adolescents who sexted start to realize these sexts might be published or forwarded which leads to constant worries, tension and subsequent impact on their mental health), blackmail (the blackmailer who received sexts threatens their sender and asks for money or other benefits in return for not publishing them) or unwanted attention (as stated on various parents-dedicated websites about sexting). Unfortunately, children and adolescents do not have sufficient cognitive capacity to account for all possible consequences of such abuse.

Many researches show that the tendency of sexting decreases if parents have a sincere and loving relationship with their children, apply desirable parenting methods and discuss the intimacy in an open and adequate way. Such parental approach is also required if a child has already sexted and finds it hard to deal with the incurred problems. Parents should discreetly solve the situation without being enraged or obviously disappointed in their children. The adolescents now live in the digital world that has a massive impact on their lives and experience things that are much different from their parents' childhood issues.

Parents should first find out who the recipients are (age and number of people who were sent the intimate material). If technically possible, the sext must be immediately deleted. Otherwise, it is necessary to ask the social media providers to remove it instead. Parents should also inform the school their child attends and discuss the issue with teacher, headmaster or guidance counselor. If required, the school might alert the police, as well. If, however, parents believe their child became the victim of a sexual predator and sexting is not an innocent outcome of the adolescence phase, the police should be called at once.

Such situations are more difficult to solve in case of children who are raised in reconstructed or remarried families and joint custody. Parents should therefore strengthen their empathy and deepen the emotional connection with their children or adolescents. Cooperation and mutual communication also need to be enhanced. We recommend parents to set their priorities in communication and activities that make children experience new things and help them develop their physical and emotional characteristics. Well-determined priorities might minimize the chances of using the unsafe and dangerous self- or peer-sexting to deal with emotional problems. In such cases, we need to accentuate the cooperation between family and school. This essential factor might prevent serious risks to be encountered by the adolescents using electronic devices to receive and send the information.

Teacher's duty is to enhance students' cooperation, e.g. by engaging them in various group activities that would focus on the development of pro-social and emotional aspects of their personalities. The adolescents should also work on their sense of empathy and responsibility to be able to use the modern online communication media in the appropriate and rational way. However, children's welfare almost always depends on their effective communication and cooperation between their parents and school workers.

Literature:

1. Burén, J.: *Sexting among adolescents*. Gothenburg, Sweden, Avhandling/Göteborgs universitet, 2018.
2. Baumgartner, S. E., Sumter, S. R., Peter, J., Valkenburg, P. M., & Livingstone, S.: *Does country context matter? Investigating the predictors of teen sexting across Europe*. 2014, *Computers in Human Behavior*, vol. 34, p. 157-164.
3. Martinez-Prather, K., & Vandiver, D. M.: *Sexting among teenagers in the United States: A retrospective analysis of identifying motivating factors, potential targets, and the role of a capable guardian*. *International Journal of Cyber Criminology*, 2014, vol. 8, p. 1.
4. Barrense-Dias, Y., Berchtold, A., Surís, J. C., & Akre, C.: *Sexting and the definition issue*. *Journal of Adolescent Health*, 2014, vol. 61, no. 5, p. 544-554.
5. Cooper, A., McLoughlin, I. P., & Campbell, K. M.: *Sexuality in cyberspace: Update for the 21st century*. *CyberPsychology & Behavior*, 2000, vol. 3, no. 4, p. 521-536.
6. Jonsson, L. S.: *Online Sexual Behaviours Among Swedish Youth: Characteristics, Associations and Consequences* (Doctoral dissertation, Linköping University Electronic Press, 2015).
7. Griffiths, M.: *Sex and the Internet. Another brief look at the psychology of cybersex*. *Psychology Today*, 2017.
8. Leiblum, S., & Döring, N.: *Internet sexuality: Known risks and fresh chances for women*. *Sex and the Internet: A guidebook for clinicians*, 2002, p.19-45.
9. Hollá, K.: *Detekcia kyberagresie-kyberšikanovania a sextingu*. [Detection of cyber-aggression-cyberbullying and sexting], Nitra: PF UKF, 2017.
10. Sorbring, E., Skoog, T., & Bohlin, M.: *Adolescent girls' and boys' well-being in relation to online and offline sexual and romantic activity*. *Cyberpsychology: Journal of Psychosocial research on cyberspace*, 2014, vol. 8, no.1.
11. Bronfenbrenner, U.: *The ecology of human development*. Harvard university press, 1979.
12. Wight, D., Williamson, L., & Henderson, M.: *Parental influences on young people's sexual behaviour: A longitudinal analysis*. *Journal of adolescence*, 2006m, vol. 29, no. 4, p. 473-494.
13. Temple-Smith, M., Moore, S., & Rosenthal, D.: *Sexuality in Adolescence: The digital generation*. Routledge, 2015.

Primary Paper Section: A

Secondary Paper Section: AM

RELATIONSHIP BETWEEN RISK BEHAVIOR OF PUBESCENTS AND CHARACTERISTICS OF THEIR FAMILY ENVIRONMENT

^aMARCELA VEREŠOVÁ, ^bKRISTÍNA MUJKOŠOVÁ

Constantine the Philosopher University in Nitra, Faculty of Education, Tr. A. Hlinku 1, 94974 Nitra, Slovakia
 email: ^amveresova@ukf.sk, ^bkristina.mujkosova@ukf.sk

Abstract: The aim of article and research is to identify and analyze characteristics of the family environment of early adolescents in relation to particular types of risk behavior with emphasis on research in this area. We focus on the family environment of pubescents in relation to particular types of risk behavior of children and adolescents - the abuse of addictive substances, delinquency and bullying (perception of self as a victim) of pubescents. Our research group consists of 287 pubescents (153 boys and 134 girls) attending 6., 7., and 8. grade of elementary schools in the region of Trenčín and Nitra in the Slovak republic. To collect data we used three questionnaires, those being the Family Environment Scale, The Revised Family Communication Pattern Instrument and the questionnaire Occurrence of Risk Behavior in Adolescent age. We found significant relationship between the family characteristics "cohesion", "expressiveness", "organization", "conversation orientation", "conflict", "intellectual-cultural orientation", "independence" and drug use; significant relationship between the family characteristics "cohesion", "expressiveness", "organization", "conversation orientation", "conflict", "intellectual-cultural orientation", "moral-religious orientation" and delinquency; and significant relationship between the family characteristics "cohesion", "organization", "conflict", "moral-religious orientation" and bullying (self-perceived victimhood).

Keywords: Risk Behavior, Drug Use, Delinquency, Bullying, Family Environment, Family Characteristics, Pubescents.

1 Introduction

Family might be characterized as one of the most essential factors regarding protectivity or riskiness as an aspect of particular forms of risk behavior in childhood and in adolescence (for instance Verešová and Hušvétyová, 2005; Dolejš, 2010; Nielsen Sobotková et.al., 2014; and others). Adolescence is a transitional period between childhood and adulthood, the beginning of which is assigned to the 11th/12th year of life and the end to 18 up to 21 year of age. In our study we center primarily on the first phase of adolescence (11/12 to 14/15 years), which is identified as pubescence (Vágnerová, 2000; Čerešník, and Gatiaľ, 2014; Dolejš, and Orel, 2018; several publications talk about adolescence as the whole stage from 11/12 to 19/20 years of age, for instance Zgourides, 2000; Shaffer and Kipp, 2010; and others). Some authors (for instance Jessor, 1991; Arnett, 2000; Verešová, 2004; Balloccchini, Chiamenti, and Lamborghini, 2013) state that, in terms of occurrence and manifestation of risk behavior, adolescents are the riskiest in comparison to younger or older age groups.

Risk behavior/problem behavior of adolescents (including pubescents) includes drug use/addictive behavior, risk sexual behavior, aggressive behavior, violence, injury and bullying, academic unsuccessfulness/ failing and dropping out of school, delinquent behavior, criminality, inappropriate eating habits/impulsive eating and insufficient physical activity/physical inactivity, risk traffic behavior, gaming and gambling (Jessor, 1991; Arnett, 2000; Verešová, 2004; Newman et.al., 2008; Čerešník, and Gatiaľ, 2014; Suchá et al., 2018). According to findings, the most frequent risk behavior in adolescence is risky sexual behavior, violence, accidents and drug use (Balloccchini, Chiamenti, and Lamborghini, 2013). In our research we focus on 3 risk forms of behavior – the abuse of addictive substances, delinquency and bullying.

In correspondence with Kobiláš and Novotný (2007), the abuse of addictive substances represents maladaptive use of psychoactive substances, which causes interpersonal or legal issues, interferes with the fulfillment of the individual's duties, threatens or alternatively harms the health of the consumer. Based on a relatively wide range of existing research findings, Rioux et.al. (2016) summarizes risk factors of drug use tied to family environment as follows: problem practices and educational approaches, including coercive practices, very low or no parental control and absence of monitoring in childhood and adolescence, high level of conflict between parents and

children, poor parent-child relationships, marital conflict, divorce of parents. In the context of protective factors of drug use tied to family environment, Wood et. al. (2013) identifies that family environments characterized with high cohesion, low level of conflict and absence of parental problems with alcohol and drugs acts protectively and at the same time significantly correlates with prosocial behavior.

Delinquent and antisocial behavior of adolescents is characterized by repeated violations of socially prescribed rules and standards in various contexts (for instance in public, at home and in school) and includes physical or verbal harm to another person, damage or theft of property or covert behavior of juveniles without victims such as truancy, drug use and others (Hofmann, and Müller, 2018). Adolescents deliberately act against rules, values and social norms. Delinquency borderlines with criminality, where socially undesirable behavior is associated with the violation of legal norms declared in the laws of the state. We speak of this type of delinquent behavior only in connection with adolescents above the age of 15, at which point a person becomes criminally liable. Research suggests that children and youth, who have experienced ill-treatment in the family, are at greater risk of delinquent behavior and criminality when living in the context of other cumulative risks, such as drug use, mental health problems, abuse, neglect or bullying, while parental control and monitoring and positive relationships with parents are protective factors against delinquency and criminality (Van Wert et.al., 2018).

Bullying is a form of aggressive behavior aimed at harming others. On one side is the actor of bullying and on the other side is the victim of bullying. Kolář (2009) states that bullying belongs to violent and addictive relationships when one or more students intentionally and repeatedly harm others. Research of age trends (Melton et al., 1998) suggests that the probability of bullying is higher among adolescents in primary schools (pubescents) compared to adolescents in secondary schools.

Passive victims of bullying tend to be insecure, quiet and introverted, often experience loneliness, often feel guilty, have an increased risk of depression and anxiety, are aware of their otherness and are perceived by peers as such (for instance health handicap, overweight, different race, culture, etc.) (Georgiou, and Stavrinides, 2008; similarly also Řičan, 1998). Active victims of violence and bullying / aggressive victims are, based on existing research (Hymel, Swearer, 2015), characterized as impulsive, unstable, experiencing more rejection by peers, have many problems at school and a highly stressful or very harsh home environment. According to the findings of Georgiou and Stavrinides (2008), they have the highest levels of depression, are often victims of serious crimes and experience anxiety with severe physical symptoms. According to Melton et al. (1998), adolescent violence and bullying are linked to rates of family disruption, ethnic diversity and poverty. Trust in parents and open communication with them are absent elements in an unhealthy dysfunctional family. A research study conducted on twins has demonstrated that a positive emotional relationship with the mother (but also the sibling) and a positive family atmosphere are key factors involved in coping with bullying (the victim of bullying), showing that it is an environmental rather than a genetic effect (Bowes et.al., 2010).

In accordance with experts, we consider important characteristics of the family environment, which must also be researched in relation to the above-mentioned risky forms of behavior or in relation to the health of adolescents (in the direction of protection and riskiness) to be as follows: cohesion (for instance Oravcová, Ďuricová and Bindasová, 2007; Matilla et.al., 2010; Rattay et.al, 2018), expressiveness (for instance Oravcová, Ďuricová and Bindasová, 2007; Habib et.al., 2010; Hessler and Katz, 2010), organization (for instance Habib et.al., 2010), control and monitoring (for instance Azimi, Vaziri, and Kashani, 2012; Nielsen Sobotková et al., 2014; Mehusa et.al.,

2018; Van Wert et.al., 2018), conflict (for instance Hušvétyová, and Sarmány Schuller, 2004), conversation orientation (for instance Ryan, Roman, and Okwany, 2015). Hacek (2017) also mentions the family's conformity orientation, which creates a space in which children are encouraged to acquire and maintain the same attitudes, values, beliefs as their parents. In dialogue orientation, parents create an open environment where children are encouraged to discuss together with their parents (Hacek, 2017). Adequate parental control and monitoring and positive relationships with parents are protective factors against delinquency and criminality, as well as other risk forms of behavior (for example, school failure or truancy - Li et.al., 2015; Malczyk, and Lawson, 2016).

In our research, we assume a statistically significant negative relationship between the examined characteristics of the family environment (cohesion, expressiveness, organization, conversation orientation, control) and the examined risky forms of pubescent behavior (drug use, delinquency, bullying - perception of self as a victim). We assume a statistically significant positive relationship between the examined characteristics of the family environment (conflict) and the examined risky forms of pubescent behavior (drug use, delinquency, bullying - perception of self as a victim). With this in mind, we have not found any relevant research findings on the possible existence of a relationship between other characteristics of the family environment contained in our research problem, we ask research questions about the existence of a relationship between other characteristics of pubescent families: intellectual-cultural orientation, active-recreational orientation, moral-religious orientation, independence, success orientation, conformity orientation and researched forms of risky behavior (drug use, delinquency and bullying - perception of self as a victim).

2 Methods

Three questionnaires focused on the identification of individual research variables were used in the conducting of the research:

1. Family environment scale (Hargašová and Kollárik, 1986). The scale represents a method for quantifying the discrepancy between family members; in our research we used it exclusively for the pubescent perception of the family. The scale contains 90 statements concerning the family environment. It is divided into 10 factors - characteristics of the family environment: 1. Cohesion (COH), 2. Expressiveness (EXP), 3. Conflict (CON), 4. Independence (IND), 5. Success orientation (SUO), 6. Intellectual-cultural orientation (ICO), 7. Active-recreational orientation (ARO), 8. Moral- religious orientation (MWO), 9. Organization (ORG), 10. Control (CNT). The first three represent relational dimensions, the factors 4 to 8 dimensions of personal growth, and the last two dimensions of system maintenance.
2. The Revised Family Communication Pattern Instrument (Ritchie and Fitzpatrick, 1990). The questionnaire consists of 26 items aimed at assessing the perception of pubescents about communication in the family environment and is divided into 2 scales: Conformity orientation (CNO), Conversation orientation (CVO).
3. Occurrence of risky behavior of adolescents (from the Czech original "Výskyt rizikového chování u adolescentů (VRCHA)", Dolejš and Skopal, 2015). The questionnaire contains 18 items grouped into three subscales: drug use (DRU), delinquency (DEL) and bullying (experience with bullying behavior as the object of bullying, BUL).

The JASP statistical program was used for statistical data processing. To describe the research data, we used descriptive statistics - median (M), standard deviation (SD), minimum (Min.) and maximum (Max.) measured values. The relationship between the examined characteristics of the family environment and the examined forms of risk behavior of pubescents was determined using Pearson's correlation coefficient (the normality of the distribution in individual variables was identified in advance).

Our research sample consisted of N = 287 pubescents attending the 6th, 7th and 8th grade at primary schools in the Trenčín and Nitra regions of the Slovak Republic. Of the total number of respondents, 153 were boys and 134 were girls. 67 pubescents were attending the 6th grade (23.35%), 107 pubescents were attending the 7th grade (36.93%), and 114 pubescents were attending the 8th (39.72%). We had 152 pubescents in urban primary schools and 135 pubescents in rural primary schools.

3 Results

Table 1 provides an overview of the descriptive characteristics of the observed variables.

Table 1 Descriptive statistics - family characteristics and selected types of risk behaviour of pubescents

	M	SD	Min.	Max.
DRU	0.540	1.040	0	6
DEL	1.345	1.583	0	6
BUL	0.742	1.015	0	4
COH	6.652	1.941	0	9
EXP	5.756	1.888	1	9
CON	2.610	2.241	0	9
IND	5.348	1.464	1	9
SUO	5.544	1.516	0	9
ICO	3.826	1.727	0	9
ARO	5.240	1.940	0	9
MWO	4.561	1.367	0	8
ORG	5.941	1.613	1	9
CNT	4.899	1.706	0	9
CNO	33.139	5.844	17	55
CVO	48.443	9.421	15	71

Note: DRU = drug use; DEL = delinquency; BUL =bullying; COH = cohesion, EXP = expressiveness, CON = conflict, ORG = organization, IND= independence, SUO = success orientation, ICO = intellectual-cultural orientation, ARO = active recreational orientation, MWO = moral-worldview orientation, CNT = control; CNO = conformity orientation CVO = conversation orientation).

Table 2 Relationship between family characteristics and selected types of risk behaviour of pubescents

		DRU	DEL	BUL
COH	r	-0.172 **	-0.230 ***	-0.213 ***
	p	0.004	< .001	< .001
EXP	r	-0.116 *	-0.145 *	-0.110
	p	0.049	0.014	0.064
CON	r	0.149 *	0.288 ***	0.301 ***
	p	0.011	< .001	< .001
IND	r	0.152 *	-0.026	-0.088
	p	0.010	0.656	0.139
SUO	r	0.062	-0.001	0.028
	p	0.299	0.984	0.640
ICO	r	-0.169 **	-0.139 *	0.004
	p	0.004	0.018	0.943
ARO	r	0.053	-0.020	-0.023
	p	0.369	0.732	0.692
MWO	r	0.091	-0.143 *	-0.185 **
	p	0.125	0.015	0.002
ORG	r	-0.254 ***	-0.300 ***	-0.146 *
	p	< .001	< .001	0.013
CNT	r	0.013	-0.069	0.064
	p	0.825	0.247	0.283
CNO	r	0.007	0.039	0.017
	p	0.904	0.510	0.771
CVO	r	-0.171 **	-0.159 **	-0.121 *
	p	0.004	0.007	0.040

Note: r = Pearson correlation; p = statistical significance: * p < .05, ** p < .01, *** p < .001; DRU = drug use; DEL = delinquency; BUL =bullying; CON = conflicts, COH = cohesion, EXP = expressiveness, ORG = organization, CVO = conversational orientation, CNT = control, IND= independence, SUO = success orientation, ICO = intellectual-cultural orientation, ARO = active recreational orientation, MWO =

moral-worldview orientation, CNO = conformity orientation CVO = conversation orientation).

Table 2 presents the results of analyses of the relationship between the observed characteristics of the family environment and the observed risky forms of behavior in early adolescents/pubescents.

As a part of the verification of our scientific assumptions for cohesion and risky forms of behavior in pubescents, we found the existence of a statistically significant negative relationship with substance use ($r=-0.172$; $p=0.004$), delinquency ($r=-0.230$; $p<.001$), perception of self as a victim of bullying ($r=-0.213$; $p<.001$). The higher the perceived cohesion of family members, the less risky behavior in the form of drug use, delinquent behavior and self-perception a victim of bullying is represented in pubescents.

As part of the verification of our scientific assumptions based on expressiveness and risky forms of behavior in pubescents, we found the existence of a statistically significant negative relationship with substance use ($r=-0.116$; $p=0.049$), delinquency ($r=-0.145$; $p=0.014$). If pubescents perceive higher expressiveness within the family, they less use drug and manifest delinquent behavior.

As part of the verification of our scientific assumptions related to conflict and risky forms of behavior in pubescents, we found the existence of a statistically significant positive relationship with substance use ($r=0.149$; $p=0.011$); delinquency ($r=0.288$; $p<.001$) as well as perception of self as a victim of bullying ($r=0.301$; $p<.001$). We found that the higher the family conflict perceived by pubescents, the riskier is their drug use, the more delinquent behaviors they represent in their behavior, and the higher their perception of themselves as the victims of bullying.

As part of the verification of our scientific assumptions related to family organization and risky forms of behavior in pubescents, we found the existence of a statistically significant negative relationship with drug use ($r=-0.254$; $p<.001$), delinquency ($r=-0.300$; $p<.001$) and bullying - perception of self as a victim of bullying ($r=-0.146$; $p=0.013$). We found that the higher the family organization is perceived by pubescents, the less their use of addictive substances, delinquent behavior and perception of themselves as victims of bullying.

As part of the verification of our scientific assumptions related to family control and risky forms of behavior in pubescents, we did not find the existence of a statistically significant negative relationship with any type of risky behavior.

As part of the verification of our scientific assumptions related to family orientation to conversation and risky forms of behavior in pubescents, we found the existence of a statistically significant negative relationship with drug use in pubescents ($r=-0.171$; $p=.004$), with delinquent behavior ($r=-0.159$; $p=.007$) and with the perception of themselves as a victim of bullying ($r=-0.121$; $p=.040$). We found that the higher the perceived orientation of family members to conversation within the family by pubescents, the less their use of addictive substances, delinquent behavior and perception of themselves as victims of bullying.

In the area of other relationships between the observed characteristics of the family environment and the monitored risk forms of behavior, we identified the following statistically significant relationships:

- moderately negative relationship between intellectual and cultural orientation of the family and substance use in adolescents ($r=-0.169$; $p=0.004$);
- weak negative relationship between intellectual-cultural orientation of the family and delinquency ($r = -0.139$; $p=0.018$);
- weak positive relationship between independence in the family environment and drug use in pubescents ($r=0.152$; $p=0.010$);

- weak negative relationship between moral-worldview orientation of the family and delinquency of pubescents ($r=-0.143$; $p=0.015$);
- moderately negative relationship between the moral-worldview orientation of the family and the perception of self as a victim of bullying in pubescents ($r = -0.185$; $p = 0.002$).

4 Discussion and Conclusion

According to our conclusions, characteristics of the family environment - cohesion, expressiveness, organization, conversation orientation, conflict, intellectual-cultural orientation and independence have significant connection with drug use among pubescents. The family characteristic "cohesion" within the meaning of the expression of interest, support, and assistance among family members has proved to be significant in relation to substance use, which supports the conclusions of Oravcová, Ďuricová and Bindasová (2007) and Matilla et.al. (2010). The more cohesive family members are, the lower the risk of drug use and misuse among adolescents is. Oravcová, Ďuricová and Bindasová (2007), Habib et.al. (2010), Hessler and Katz (2010) emphasized the importance of the ability to manage and express the emotional expressions of individuals in relation to drug use, which is clearly linked to the characteristics of the family environment "expressiveness" within the meaning of open manifestations of emotions and allowing honest behavior among family members. Emotional manifestations are very important in the family; their presence contributes to the reduction of risky drug use among adolescents. The family characteristics "organization" within the meaning of clearly defined responsibilities and rules has also proved to be significant in relation to drug use among the age cohort of pubescents. The bigger order and organization of the family rules are, the less the likelihood of the occurrence of these risk behaviors is. Our finding is in accordance with the authors of Habib et.al. (2010) write about the importance of high organization of the family environment in terms of lower alcohol consumption. The family characteristic "conversational orientation" within the meaning of open communication about children's activities during the day, goals for the future, feelings and emotions, non-specific topics, or issues, for example, related to school has proved to be important in relation to drug use among pubescent. The more parents communicate and discuss with their children, showing them respect and esteem for their opinions, the lower the risk of drug use is. The importance of communication in the family was also expressed by the authors Ryan, Roman, and Okwany (2015). In relation to drug use among pubescents, we found out the importance of the family characteristic "intellectual-cultural orientation". The more family members focus on activities of a social, intellectual, cultural, or political nature, the lower the risk of the occurrence of risky drug use is. The family characteristic "conflict" within the meaning of open manifestations of aggression, anger, and conflicting interactions between family members has proved to be significant in relation to drug use among pubescents. The higher family conflict represents a high risk of the occurrence of this form of risky behavior among pubescents. Our conclusions support the findings of Hušvetyová and Sarmány Schuller (2004). Regarding the characteristics of the family environment "independence" and its link to drug use, we found out, that the more family members make decisions for themselves and be exclusively self-sufficient in solving their problems, the greater risk of emergence of pubescent drug use is. "Control" as another characteristic of the family environment within the meaning of the degree of control between family members has proved to be insignificant in our research in relation to drug use among pubescents. In this regard, we did not support the findings of Ryan, Roman, and Okwany (2015). This discrepancy in the findings may be related to differences in the nature of the control. Ondrušková, Pružinská, and Pavelová (2016) write about the fact that parents control especially their children's leisure time, while the items related to control in our questionnaire were related to control among family members only within their family environment, and therefore not to activities that perform pubescent voluntarily outside the family.

Among the characteristics of the family environment such as "success orientation" (highlighting competitiveness and better results in the family), "active-recreational orientation" (involving the family in sports and leisure activities), "moral-religious orientation" (dealing with the worldview and ethical values and problems) and drug use among pubescent, we did not reveal any significant links.

According to our findings, the characteristics of the family environment, such as cohesion, expressiveness, organization, conversation orientation, conflict, intellectual-cultural orientation, and moral-religious orientation, have a significant relationship with the delinquent behavior of pubescents. The family characteristic of "cohesion" within the meaning of expressing interest, support, and help among family members has proved to be important in relation to delinquency, thus we are expressing a unified finding with Nielsen Sobotková et al. (2014). The greater the coherence between family members is, there is a lower risk of delinquent behavior among pubescents. Hessler and Katz (2010) talk about the importance of regulating emotions in terms of delinquency, which is also related to our examined family characteristic "expressiveness" within the meaning of open manifestations of emotions and enabling honest behavior among family members. Emotional manifestations are very important in the family, their presence contributes to the reduction of delinquency of pubescents, and it has a protective character. The family characteristics "organization" within the meaning of clearly defined responsibilities and rules has also proved to be significant in relation to the delinquency of pubescents. The greater order in the family is, there is the less the likelihood of the occurrence of this risky form of behavior in this age cohort. Our finding is in accordance with the authors Nielsen Sobotková et al. (2014), who state the importance of clearly determined rules in the family environment in relation to problems in adolescent behavior. Equally at the level of the family characteristic "conversation orientation", we confirmed if parents talk to children and discuss with them, if they verbally show respect and esteem to each other, the risk of the occurrence of delinquent behavior among pubescents living in such families is lower. The importance of communication between family members in a protective direction is also described by Ryan, Roman and Okwany (2015). In our research, we also identified the importance of the relationship between family characteristics "intellectual-cultural" orientation and delinquent behavior in the direction that, the more family members focus on activities of social, intellectual, cultural or political nature, the risk of pubescent delinquency is lower, so it has protective importance. The "moral-worldview orientation" has an equal protective attitude towards delinquent behavior (the more family members deal with the worldview and ethical values and problems, the risk of the occurrence of pubescent delinquency is lower). The family characteristic "conflict" within the meaning of open manifestations of aggression, anger, and conflicting interaction between family members has proved to be significant in relation to pubescent delinquency. The higher family conflict represents a high risk of the occurrence of this form of risky behavior among pubescents, which supports the findings of Hušvetyová and Sarmány Schuller (2004) and Verešová and Hušvetyová (2005). "Control" as another characteristic of the family environment within the meaning of the degree of control among family members, it proved to be insignificant in connection with the delinquency of pubescents. In this regard, we do not support the claims of Van Wert et al. (2018), Gottfredson and Hirshi (1990, in Ondrušková, Pružinská, and Pavelová, 2016), who write about the importance of control in the prevention of delinquent behavior of children and adolescents. This discrepancy in the findings may be related to differences in the nature of the control. Ondrušková, Pružinská, and Pavelová (2016) write about the fact that parents control especially their children's leisure time, while the items related to control in our questionnaire were related to control among family members only within their family environment, and therefore not to activities that perform pubescent voluntarily outside the family. According to our findings, among the characteristics of the family environment such as "independence" (mutual encouragement in independence, decision-making, and self-

sufficiency in solving one's own problems), "success orientation" (highlighting competitiveness and better results in the family), "active recreational orientation" (involvement of the family in sports and recreational activities) and pubescent delinquency, there is no significant relationship.

Characteristics of the family environment - cohesion, organization, conversation orientation, conflict and moral-worldview orientation have a significant relationship with bullying in the sense of perception of self as the victim of bullying in the age cohort of pubescents. We confirmed protective nature of family cohesion (similar to Cluver, Bowes, and Gardner, 2010), family organization (similar to Nielsen Sobotková et al., 2014), conversational orientations (similar to Ryan, Roman, and Okwany, 2015), moral-worldview orientation in relation to delinquent manifestations of behavior of pubescents. Contrarily, we confirmed the risk dimension of the conflict in family, which is manifested by anger, aggressive manifestations of family members in the direction of strengthening the probability of perceiving the pubescent as a victim of bullying in the school environment. In our research, we did not confirm any significant relationships between perception of self as victims of bullying among pubescents and family control, independence in decision-making and self-sufficiency in solving problems in the family, family success orientation, intellectual-cultural orientation of family member, as well as the active-recreational orientation of the family.

Our research, as well as the research in the contribution of the mentioned experts, underlines the importance of monitoring factors that are related (correlative, mediative or predictive) to risk behavior or its individual types. It can be clearly stated that the characteristics of family environment play a significant role in protectiveness and promote protection of the health of adolescents (especially open and empathetic communication between family members centered on mutual respect and esteem; healthy family rules and adequate control behavior; coherence in expressing interest, support and assistance among family members; expressiveness and congruent expression of emotions and feelings in the family environment; and others), while others act as risk factors and their accumulation or strong action promotes manifestations of risky behavior or its individual types (for example, increased family conflict or the high independence of family members, which can lead to autonomous but high individualized decisions and actions independent of decisions and actions of the potential of other family members). Time, society, perception and functioning of the family, values are constantly changing and evolving in a different direction, so we highly recommend conducting research of this nature in the future, so that we have scientific knowledge as up-to-date as possible with emphasis on the influence of the family and its characteristics on risky behavior in adolescents. In the context of our findings and the little research in the field of characteristics of the family environment, such as independence, intellectual-cultural orientation and moral-worldview orientation, we consider it to be important to pay attention to research in a broader sense so that we can confirm or discuss our findings with the cohort pubescents, as well as with younger and older age cohorts.

Literature:

1. Arnett, J. J.: Emerging adulthood: A theory of development from the late teens through the twenties. *American Psychologist*, 2000, Vol.55, Issue 5, p.469-480, ISSN 0003-066X.
2. Azimi, L., Vaziri, S., Kashani, F.: Relationship between Maternal Parenting Style and Child's Aggressive Behavior. *Procedia - Social and Behavioral Sciences*, 2012, Vol. 69, p.1286-1281, ISSN 1877-0428.
3. Ballochchini, E., Chiamenti, G., Lamborghini, A.: Adolescents: which risks for their life and health? *Journal of Preventive Medicine and Hygiene*, 2013, Vol.54, Issue 4, p. 191-194, ISSN 2421-4248.
4. Cluver, L., Bowes, L., Maughan, B., Caspi, A., Moffitt, T. E. & Arseneault, L.: Families promote emotional and behavioural resilience to bullying: evidence of an environmental

- effect. *Journal of Child Psychology & Psychiatry*, 2010, Vol. 51, p. 809-818, ISSN 1469-7610.
5. Čerešník, M., Gatial, V.: *Rizikové správanie a vybrané osobnostné premenné dospievajúcich v systéme nižšieho sekundárneho vzdelávania*. Nitra: Univerzita Konštantína Filozofa, 2014, 109p, ISBN 978-80-558-0658-7.
 6. Dolejš, M.: *Efektívni včasná diagnostika rizikového chování u adolescentů*. Olomouc: Univerzita Palackého, 2010, 190p. ISBN 978-80-244-2642-6.
 7. Dolejš, M., Orel, M.: *Rizikové chování u adolescentů a impulzivita jako prediktor tohoto chování*. Olomouc: Univerzita Palackého v Olomouci, 2018, 105p., ISBN 978-80-244-5252-4.
 8. Dolejš, M., Skopal, O.: *Výskyt rizikového chování u adolescentů (VRCHA)*, 1. vydání. Olomouc: Univerzita Palackého, 2015, 62p.
 9. Georgiou, S.N., Stavrinides, P.: Bullies, Victims and Bully-Victims: Psychosocial Profiles and Attribution Styles. *School Psychology International*, 2008, Vol.29, p.584-589, ISSN 1461-7374.
 10. Habib, C. et.al.: The importance of family management, closeness with father and family structure in early adolescent alcohol use. *Addiction*, 2010, Vol. 105, Issue 10, p. 1750-1758, ISSN 1360-0443.
 11. Hacek, J.: Rodinné komunikačné vzorce. *Psychologie a její kontexty*, Vol. 8, Issue 1, p. 19 – 30.
 12. Hargašová, M., Kollárik, T.: *Škála rodinného prostredia*. Bratislava: Psychodiagnostické a didaktické testy, š. p., 1986.
 13. Hessler, D., Katz, L. F.: Brief Report: Associations between Emotional Competence and Adolescent Risky Behavior. *Journal of Adolescence*, 2010, Vol. 33, Issue 1, p. 241–246, ISSN 0140-1971.
 14. Hofmann, V., Müller, Ch. M.: Avoiding antisocial behavior among adolescents: The positive influence of classmates' prosocial behavior. *Journal of Adolescence*, 2018, Vol. 68, p. 136-145, ISSN 0140-1971.
 15. Hušvétyová, J., Sarmány Schuller, I.: Štýly rodinnej výchovy a ich možný dopad na vznik problémového správania detí. In *Svět žen a svět mužů. Polarita a vzájemné obohacování: sborník z konference Psychologické dny 2004*. Olomouc: Univerzita Palackého v Olomouci. Available from: <http://cmps.ecn.cz/pd/2004/texty/pdf/husvetyova.pdf>.
 16. Hymel, S., Swearer, S.M.: Four Decades of Research on School Bullying. *American Psychologist*, 2015, Vol. 80, Issue 4, p.293-299, ISSN 0003-066X.
 17. Jessor, R.: Risk behavior in adolescence: A psychosocial framework for understanding and action. *Journal of Adolescent Health*, 1991, Vol. 12, Issue 8, p.598-605, ISSN ISSN: 1054-139X.
 18. Kolář, M.: Diagnostika a léčba šikanování v praxi. In Philippová, L., Janošová, P. (Eds.) *Šikana jako etický, psychologický a pedagogický problém*. Praha: Tribun EU, 2009, pp.13-26, ISBN 978-80-7367-817-3.
 19. Kolibáš, E., Novotný, V.: *Alkohol – drogy – závislosti*. Bratislava: Univerzita Komenského, Vydavateľstvo UK, 2007, 260p., ISBN 978-80-223-2315-4.
 20. Li, S.J., Roslan, S., Abdullah, M. Ch., Abdullah, H.: Commuter Families: Parental Readiness, Family Environment and Adolescent School Performance, *Procedia - Social and Behavioral Sciences*, 2015, Vol. 182, p.686-692, ISSN 1877-0428.
 21. Malczyk, B.R., Lawson, H.A.: Parental monitoring, the parent-child relationship and children's academic engagement in mother-headed single-parent families. *Children and Youth Services Review*, 2018, Vol. 83, p.284-282, ISSN 0190-7409.
 22. Mattila, M-L. et.al.: Sense of coherence and health behavior in adolescence. *Acta Paediatrica*, 2011, Vol. 100, Issue 12, p. 1590- 1595, ISSN 0803-5253.
 23. Mehusa, Ch. J., Forster, M., Chan, G., Hemphilld, S.A., Toumbourou, J.W., McMorris, B.: Longitudinal, reciprocal relationships between family management and antisocial peer associations. *Journal of Adolescence*, 2018, Vol. 68, p. 146-151, ISSN 0140-1971.
 24. Melton, G. B., Limber, S. Flerx, V. Cunningham, P., Osgood, D.W., Chambers, J., Henggler, S., Nation, M.: *Violence among rural youth. Final report to the Office of Juvenile Justice and Delinquency Prevention*. 1998, 196 p., ISBN 1-879953-05-6.
 25. Newman, K., Harrison, L., Dashiff, C., Davies, S.: Relationships between parenting styles and risk behaviors in adolescent health: an integrative literature review *Revista Latino-Americana de Enfermagem*, 2008, Vol. 16, Issue 1, p.142-150, ISSN 1518-8345.
 26. Nielsen Sobotková, V. a kol.: *Rizikové a antisociální chování v adolescenci*. Praha: Grada Publishing, a.s., 2014, 152s., ISBN 978-80-247-4042-3
 27. Ondrušková, E., Pružinská, J., Pavelová, E.: *Rodina, voľný čas, psychoaktívne látky a delikvencia*. Bratislava: Univerzita Komenského, Vydavateľstvo UK, 2016, 208p., ISBN 978-80-223-4236-0.
 28. Oravcová, J., Ďuricová, L., Bindasová, O.: *Psychológia rodiny*. Banská Bystrica: Univerzita Mateja Bela, Fakulta humanitných vied, 2007, 365p., ISBN 978-80-8083-490-6.
 29. Rattay, P., Lippe, E., Mauz, E., Richter, F., Hölling, H., Lange, C., Lampert, T.: Health and Health Risk Behaviour of adolescents-Differences According to Family Structure. Results of the German KiGGS Cohort Study. *PLoS ONE*, 2018, Vol. 13, Issue 3, doi: 10.1371/journal.pone.0192968, eCollection.
 30. Rioux, Ch., Castellanos-Ryan, N., Parent, S., Séguin, J.R.: The interaction between temperament and the family environment in adolescent substance use and externalizing behaviors: Support for diathesis-stress or differential susceptibility? *Developmental Review*, 2016, Vol. 40, p.118-150, ISSN 0273-2297.
 31. Ritchie, L.D., Fitzpatrick, M. A.: Family Communication Patterns: Measuring Intrapersonal Perceptions of Interpersonal Relationships. *Communication Research*. 1990, Vol. 17. Issue 4, p.523-544, ISSN 0093-6502.
 32. Ryan, J., Roman, N. V., Okwany, A.: The Effects of Parental Monitoring and Communication on Adolescent Substance Use and Risky Sexual Activity: A Systematic Review. *The Open Family Studies Journal*. 2015, Vol. 7, p.12-27, ISSN 1874-9224.
 33. Řičan, P.: *Agresivita a šikanovanie medzi deťmi*. Martin: Educatio, 1998, 85 p., ISBN 80-967-5322-3.
 34. Suchá, J., Dolejš, M., Pipová, H., Maierová, E., Cakirpaloglu, P.: *Hraní digitálních her českými adolescenty*. Olomouc: Univerzita Palackého v Olomouci, 2018, 188 p., ISBN 978-80-244-5428-3.
 35. Shaffer, D. R., Kipp, K.: *Developmental Psychology: Childhood and Adolescence*, Eighth Edition. Belmont: Wadsworth, 2010, 785 p., ISBN 978-0-495-60171-5.
 36. Vágnerová, M.: *Vývojová psychologie I. Dětství a dospívání*. Praha: Karolinum, 2012, 531 p., ISBN 978-80-246-2153-1
 37. Van Wert, M., Mishna, F., Trocmé, N., Fallon, B.: Which maltreated children are at greatest risk of aggressive and criminal behavior? An examination of maltreatment dimensions and cumulative risk. *Child Abuse & Neglect*, 2018, Vol. 69, p. 49-61, ISSN 0145-2134.
 38. Verešová, M.: *Mediátory užívania drog. Cesta k efektívnej prevencii drogových závislostí*. Nitra: FSVaZ UKF, 2004, 394p., ISBN 80-8050-767-8.
 39. Verešová, M., Hušvétyová, J. (2005). Štýly rodinnej výchovy a rizikové správanie dievčat a chlapcov v období puberty. *Psychológia a patopsychológia dieťaťa*, Vol. 40, Issue 1, p.18-29, ISSN 0555-5574.
 40. Wood, A.P., Dawea, S., Gullo, M.J.: The role of personality, family influences, and prosocial risk-taking behavior on substance use in early adolescence. *Journal of Adolescence*, 2013, Vol. 36, p. 881-881, ISSN 0140-1971.
 41. Zgourides, G.: *Developmental Psychology*. Foster City CA: IDG Books Worldwide, Inc., 2000, 158 p. ISBN 0-7645-8614-9.

Primary Paper Section: A

Secondary Paper Section: AM, AN

WEB 2.0 TOOLS SERVING NEEDS OF GENERATION Z

^aKATERINA GAJDÁČOVÁ VESELÁ ^bJANA PUSCHENREITEROVÁ

Faculty of Education, Constantine the Philosopher University in Nitra, Dražovská cesta 4, 949 74 Nitra, Slovakia
 email: ^akgvesela@ukf.sk, ^bjanka.puschen@gmail.com

Paper published within the grant KEGA 003TU Z-4/2020, Support of Foreign Language Education via merging Technical and Language Content Teaching at non-philological Universities

Abstract: This article tries to answer the question, how to use the characteristics of Generation Z learners for their education. The fact that they are born as “digital natives” leads to the conclusion that the Internet should be used in teaching. The best way to incorporate electronic tools and the Internet is to blend them with face-to-face instruction. Learning Management Systems are available to serve teachers and learners and make their efforts easier. Our ideas are supported by the design-based research in the form of a case study. The data of the research were mined by two research tools – a questionnaire and a focus group. The results of our research confirm that if teachers want to follow the principles of the learner-centered approach, they should accommodate their delivery to the learners, i.e. Generation Z.

Keywords: generation Z, blended learning, LMS, Web 2.0, constructivism, connectivism, design-based research, Learner-centered approach

1 Introduction

The first Generation Z learners are graduates now. When they went to schools and universities, did we, teachers, think about their differences from the previous generation? Did we try to assimilate to their needs? If not, it is not too late to do so. At least we should try.

In the educational process, there are usually up to five generations involved, so the generation gap between the teachers and their learners can be remarkably wide. You may be a Millennial taught by a Traditionalist (born 1945 and before). Was your teacher empathetic to your specifics? Did you feel the generation gap?

In this article we try to answer the question, how to use the characteristics of Generation Z learners for their education. The fact that they are born as “digital natives” leads to the conclusion that the Internet should be used in teaching. The best way to incorporate electronic tools and the Internet is to blend them with face-to-face instruction.

Learning Management Systems (LMS) are available to serve teachers and learners and make their efforts easier. They offer the whole scale of tools, which reflect the environment of Web 2.0; moreover, they are user-friendly for both creators of the course and learners as well.

Teaching and learning via LMSs is based on two educational theories, namely constructivism and connectivism, thus it is necessary to be familiar with them. Knowledge constructs and their connections create the base for successful learning under the conditions of blended learning environment.

Our ideas are supported by the design-based research in the form of a case study. The data of the research were mined by two research tools – a questionnaire and a focus group. The results of our research confirm that if teachers want to follow the principles of the learner-centered approach, they should accommodate their delivery to the learners, i.e. Generation Z. To reach this aim they should use Web 2.0 tools, and permanently upgrade and update not only the content of their courses, but also the approaches, methods and techniques.

2 Theoretical Background

2.1 Generation Z

Generation Z is the term that is nowadays accepted as common for the group of people who were born as ‘digital natives’. As

McCrinkle and Wolfinger (2010, p.1) state: “[...] today generations are defined sociologically rather than biologically [cf. traditional biological definition of ‘generation’]. A generation refers to a cohort of people born within a similar span of time (15 years the upper end) who share a comparable age and life stage and who were shaped by a particular span of time (events, trends and developments).” It means that not only the time of the birth is important, but also the social environment people grow in. As it is expressed in an ancient Arabic saying (cited *ibid.*): “People resemble their times more than they resemble their parents.” The social and psychological influence of the Internet is undisputable. However, the views and interpretations may radically differ within the range from those that highlight more the negatives (Diomidous, Chardalias, Magita, Koutonias, Panagiotopoulou, & Mantas, 2016), as cyber bullying, cyber porn, cyber suicide, Internet addiction, social isolation, cyber racism etc. (we found it needful to note that the authors are medical doctors) – to those who find positives in using the Internet; moreover, recommend using social networking sites for educational purposes (Brown, 2003). Our views as educators are in agreement with the latter opinion.

Since the importance of the learner-centered approach is after years of discussions (*cf.* Lim & Richardson, 2016; Cornelius-Whie, 2007; Antón, 1999, and others) in modern pedagogy taken for granted, it is extremely important to know the learners – nowadays Generation Z. Many authors (e.g. Cilliers, 2017) have described the characteristics of Generation Z learners; nevertheless, to support the thesis statement of our paper, Poláková and Klímová’s (2019, p.4) conclusions are most valuable: “[...] teachers need to update traditional methods of teaching and make the learning environment more appropriate to modern students.” Rothman (n.d.) emphasizes the characteristics of this generation that are used in our research, namely: technologies are a natural part of their lives, they have complex visual imagination and thus their visual learning is highly effective, instead of reading, they prefer watching video, they like interactive games, collaborative learning, and creative tasks. Although we propose using the characteristics of the new generation of learners for the sake of education, we are at the same time aware of the dangers of overusing the Internet may have on their sociological and psychological conditions. Teachers should show their learners how to gain advantage and profit from their abilities, and, how to avoid the pitfalls of the virtual world at the same time.

2.2 Blended Learning

The learning environment that is the most suitable for the learners who are used to living in the digital world, communicate via e-media, and breathe virtual air is the environment of e-learning, i.e. education using electronic devices. Needless to say, more than pure e-learning, it is the blended learning approach that satisfies the needs of both learners and their teachers.

During the last decades, the term Blended Learning has undergone substantial development. As stated by Ramasubbu (2017, n.p.):

“[...] the concept of “blended learning”, which was introduced as early as 2000, has assumed more importance than ever before and has transformed from a theoretical concept with rudimentary applications to an essential part of mainstream education, encompassing a wide array of technological tools, gadgets and concepts. Blended learning, which once referred to use of computer and web-based training in class, has now evolved into a mammoth education program that merges traditional classroom-based instruction with technology enhancements such as electronic whiteboards, Internet devices, multimedia assistance, digital textbooks and online lesson plans.”

Bleed (2011) supports the idea of introducing the “hybrid” model, which creatively combines technology and people. He proposes the model in which technology is placed into a traditional course. He aptly names this model ‘half “bricks” and half “clicks” ’ (p.18), calling blended learning an opportunity to redesign how courses are developed and delivered.

Teachers try to use many ways how to incorporate new technologies into their courses to meet the needs of their Generation Z learners. According to Henrich and Sieber (2009), the number of accessible and demanded electronic tools is still rising. Most facilities for the creation of blended courses are included in Learning Management Systems (LMS) (Henrich & Sieber, 2009). These authors also claim that rich media formats in LMSs reach a high degree of multimedia and interactivity. The authors of this article use the LMS Moodle in their everyday practice and exploit its considerable potentials for blended learning environment.

2.3 LMS Moodle

The LMS Moodle offers the whole menu of activities that could be exploited in creation of courses for Generation Z learners, who are technically knowledgeable, prefer communication via technological tools before direct contact with people; they are visual learners, as their brains have higher visual abilities; they do not want to read long texts and thus prefer Internet to books; moreover, they are kinaesthetic learners, who like interaction with multimedia (Prensky, 2001). As a result, their life (learning included) is for them inconceivable without the Internet (Poláková & Klímová, 2019).

Fortunately, the LMS Moodle has in its repertoire a whole range of tools that respond to the major above-mentioned demands of these learners. The tools can be divided according to the type of activity into: creation (Database, Glossary); organisation (Lesson, Resources – Book, File, Folder, Page, URL, etc.); delivery (Assignments, Workshops); communication (Chats, Forums, News); collaboration (Glossary, Blog, Wikis); and assessment (Quiz, Survey, Feedback).

The LMS Moodle is a system, which is fully adapted to the Web 2.0 conditions. It offers tools such as Blog, Glossary, Quickmail, Feedback, Chat, Forum, Assignment, Wiki and other, which are designed according to the Web 2.0 principles as described above. Moreover, some of the classic tools like Lesson can be converted by the teacher into a discussion forum.

However, it is important to stress that every tool is only as powerful as its user. In this case, it is the teacher, who should be knowledgeable about them and able to organize all the educational process (Costa, Alvelos, & Teixeira, 2012). The teachers of those subject matters that are different from Information and communication technologies (ICT), moreover, being themselves digital immigrants, not digital natives (Henrich & Sieber, 2009), may find it difficult to cope with the demands of latest technologies. However, modern LMS systems are designed to be user-friendly and their users do not need any special courses or skills to be able to fill them up with the desirable content. Then, the most demanding task is to keep the system updated and adapted to the latest developments. The new generation of learners needs a new generation of learning aids, and these can be the tools of Web 2.0.

2.4 Web 2.0

At the beginning, the Internet was simply a portal, where common users passively received information (Faizi, 2018). This phase of development is called Web 1.0, or “readable phase” of the Internet. This author further explains that today, the Internet has developed into the “read-write” venue for participants to collaborate, share information, and interact socially; Internet users now create new content and publish or communicate it to the whole world (Faizi, 2018.). This environment is called Web 2.0. Evidently, it offers many tools that can be used in education.

The Open Education Database (n.d.) lists 101 Web 2.0 teaching tools, classifying them into the following categories: aggregators; bookmark managers; classroom tools; collaboration; course management; e-learning; gamification; office suites; office tools; productivity public content management; and storage.

Undoubtedly, a teacher cannot master and use all of them. The solution to deal with this overload is to use Learning Management Systems, in which these tools are incorporated (see above).

Technical skills and profound knowledge of educational technologies are not the only demands on modern teachers. They should also be familiar with learning theories that create the background of their teaching. These theories explain not only what can be used, but also why and how to use it to create challenging learning environment, tools and materials, from which the learners can benefit. The most important learning theories behind Web 2.0 tools and LMSs are constructivism and connectivism.

2.5 Constructivism

We agree with Bada (2015), who claims that, the implications of constructivism I teaching/learning are immense. The main idea, which should be realized, understood and applied by all teachers in practice, is that “teachers cannot simply transmit knowledge to students, but students need to actively construct knowledge in their own minds. That is, they discover and transform information, check new information against old, and revise rules when they do no longer apply. This constructivist view of learning considers the learner as “an active agent in the process of knowledge acquisition (Bada, 2015, p.66).” Constructivism derives its name from the notion of “mental construction” that is the result of learning.

If we analyse the Web 2.0 tools from the point of view of this theory, it can be clearly concluded that they can be used to support the teachers’ efforts to help their learners to “construct” their knowledge. Moreover, the LMS Moodle, which is used in our research, is based on this learning theory. Evans (2011) summarizes how the LMS Moodle can support constructivism in the classroom in five main points (n.p):

1. collaboration,
2. responsibility for learning (Active Role),
3. promotion and assessment of Constructivism,
4. cooperative learning,
5. metacognition.

We can add that there are more constructivist principles behind the LMS Moodle tools. The most important is that it supports constructing knowledge, for example by using the Glossary, where students create their own content, creating Wikis, blogs, etc.

2.6 Connectivism

Connectivism is a theory that was introduced by Siemens (2006), who claimed that in the early days of constructivism, cognitivism and behaviourism education was not as markedly under the influence of technologies as it is nowadays. This influence has enormous consequences, and it is reflected by not only in the content of education, but also the ways and methods teachers teach, and learners learn. While constructivism is based on the presumption that learners actively construct meaning, connectivism considerably emphasizes the process of learning.

Siemens (2006, p. 30) is convinced, that: “The connections that enable us to learn more are more important than our current state of knowing.” He develops this idea further, seeing learning as a managed, not fostered process, where “the network of connections is the structure which holds the knowledge of individuals in a holistic manner (p. 33).”

The ideas of connectivism can be applied in any field of education. Veselá (2013) stresses that the very nature of a language enables us to follow the principles of chaos, networks, complexity, and self-organization in foreign language education. However, the most important connectivist idea, which should not be forgotten by teachers is that the ability to learn (create and understand connections) is more important than the current state of knowledge (Siemens, 2006).

In the LMS Moodle used in our research, the connectivist ideas were reflected by teaching the students how to find the order in the seemingly chaotic world of a foreign language, how to find and manage information from the Internet, how to cooperate to find solutions of the Assignments, how to find connections among the nodes of their knowledge in Lectures, Forums, Chats and Blogs, and how to coordinate their efforts to create a meaningful piece of information in the Glossary, or a video published as a solution of an Assignment task.

2.7 Conclusion of the Theoretical Background

To satisfy the needs of the Generation Z learner, the teachers should find the way to exploit the characteristics of those learners, born as “digital natives” to help them learn in the digital environment. The Web 2.0 tools, which are used by these learners naturally, should enable the teachers to update not only the content of education, but also the ways and manners it is created, developed, delivered and shared. LMSs are the platforms, where the use of technologies is enabled and simplified. The educational theories of constructivism and connectivism create a firm theoretical base for the education of the Generation Z learners.

3 Research

Our research is based on the theories introduced above (Generation Z characteristics, Web2.0 tools, blended learning, LMS Moodle, constructivism, connectivism). The research involved a case study conducted at the Department of Language Pedagogy and Intercultural Studies, Faculty of Education, Constantine the Philosopher University in Nitra, Slovakia. The course was led as a blended learning course with a face-to-face part and a computer-assisted part.

For this article, just a part of this research is chosen, since the whole research was too complex to be covered in one paper.

3.1 Aims and Research Questions

The main aim of this part of the research was to find out whether the original course, based on the Web 1.0 philosophy - the first stage of WWW made of static websites connected by hyperlinks, without interactive content (Web 1.0., n.d.) - satisfies the needs of the Generation Z learners; if not, how it could be improved and whether these improvements would be appreciated by the learners. New solutions based on the research results were expected.

Consequently, the research questions were formulated as:

- RQ 1: Are the students satisfied with the course, which potentials do they see?
 RQ 2: Were the potentials exploited?
 RQ 3: Are there any other potentials to be incorporated in future improvements of the course?

3.2 Material and Methods

The first, original course on English lexicology was used before the intervention was made. The course was in its original form available at eldum.phil.muni.cz. Unfortunately, the platform Eldum was closed on 10. 07. 2019, so the version that was used in the research is not available now. That old version was created in the LMS Moodle at the beginnings of its use at the Slovak universities. In those days, it was considered a modern and innovative way of teaching. It offered texts with hyperlinks,

links to online dictionaries, moreover, online assignments. It was designed “to read”, with the main idea to be available anytime and anywhere, as the theory of e-learning of those days proclaimed. In the year 2008, the course won the Award of the National Centre of Distance Education in the eLearning competition in Hradec Králové, in the Czech Republic. However, almost a whole decade had caused the course, during the time of the research, to be already outdated. The learners of the new generation entering tertiary education demanded a learning environment that would meet their needs. Thus, the intervention was made (see the subchapter Intervention below) and the Web 2.0 tools provided by the LMS were utilized (Lexikológia a frazeológia anglického jazyka, n.d.).

Design-based research served as the main method, since it suits best the philosophy of this research. In design-based research the progress can be tracked and used for new solutions, as it is characterized by an iterative cycle of design, enactment, analysis, and redesign (The Design-Based Research Collective, 2003), conducted in real-word contexts with social interaction (Wang & Hannafin, 2005). It is highly recommended in technology-enhanced learning environments (Amiel & Reeves, 2008) where the design and research can be integrated; moreover, the refined design can be instantly applied. In case of the LMS Moodle, the system in which all statistical data are stored, and the progress tracked, the research can be conducted with the help of these tools. The part of research, in which the data from the LMS are used, is not included in this paper and the results are yet to be published.

The design-based research should take place under real-life conditions; in case of our research, it was the course of English Lexicology, which was an obligatory subject for the second-year bachelor students of English language, the teacher-trainees. The researcher created a case study, limited by the available sample of the students enrolled in the course. The form of case study best reflects the philosophy of design-based research, as it provides an example of real learners in real situations (Cohen, Manion, & Morrison, 2011); furthermore, it shows effects in real, dynamic contexts. In the research, 28 students participated as the research subjects.

To answer the RQ 1, the questionnaire survey was distributed (Appendix A); subsequently, the answers were qualitatively analysed, using a coding system.

After the analysis of the answers, an analysis of the course followed. The researcher compared the results with the theory about the Generation Z learners and Web 2.0 tools (see above), to be able to make interventions that would improve the course with the aim to reach higher satisfaction and better outcomes.

After the intervention, RQ 2 and RQ 3 were asked. The answers obtained by the focus group research tool were analysed and interpreted (see the subchapter Answer to RQ 2 below). The same research objects participated in both forms of research – before and after the intervention. The whole process took place within one semester during a course on English Lexicology.

3.3 Results

Answer to RQ 1

For the purposes of the analyses of the data obtained from questionnaires, four categories were created:

1. Overall opinions of the students towards the course
2. Students’ personal evaluation of the course (kinds of activities and material that should be added to contemporary version)
3. Disadvantages of the course
4. Advantages of the course

Qualitative approach to the research influenced the procedure of creating, distributing, and analysing the questionnaire. As the aim of it was to find out the opinions not influenced by the questions, the questions were formulated very generally, and

subsequently the category labels (i.e. codes), have been created from the collected data.

For the purposes of this paper, just the Categories 1 and 2 (Students' personal evaluation of the course) are analysed here.

Table 1 Category 1

Category 1 Overall opinions of the students towards the use of e-learning course		
Number of students who answered Question 1: ("Did you like the possibility to work with the English Lexicology e-learning course last semester? Why?/Why not?")		28
Code	Example	Stud.
mostly positive opinion, but aware of possible obstacles	"I did like it, but people remember more when they write the information down themselves. We copied and pasted the exercises through the semester"	1
negative opinion	"I didn't like to use it, 'cause I was too lazy to use it"	1
positive opinion	"It was a new method, which I consider quite interesting and unusual than the other classes" "It was something different"	26

According to these results, the answer on the RQ 1 can be formulated: the students were satisfied with the course (26 answers expressing positive opinion). There was just one negative opinion; moreover, the student evaluated more his/her own attitude than the course. Other isolated opinion expressed the idea that "copying and pasting" assignments (exercises in the student's view) was possible. It is necessary to admit that possibility of cheating (copying other students' answers) was high. However, cheating in the virtual environments is an issue that is out of the scope of this study.

Table 2 Category 2

Students' personal evaluation of the English Lexicology e-learning course (Kinds of activities and material that should be added to the contemporary version)		
Number of students who answered Question 3: ("What kinds of activities or study materials do you think should be added to the contemporary version of the online course?")		28
Code	Example	Stud.
quizzes	"maybe quizzes, because it is easiest and funniest to learn" "quizzes would be great, I memorize newly learned things better"	8
discussion forums	"I would like to discuss about the resources, so some kind of forums or something like that."	12
chats	"some chats to exchange information with classmates, well I could use Facebook, but here I would chat about lexicology and not about other personal stuff"	4
video resources	"more activities with the use of videos"	10
glossaries	"I think glossaries within each lesson would be great."	7

When asked to propose improvements, students' proposals fully reflected their characteristics as Generation Z learners - they suggested quizzes - which are interactive, discussion forums and chats - which support communication, video resources - which would satisfy them as visual and kinaesthetic learners, and glossaries - which they can collaboratively create.

Intervention

Based on this part of research supplemented by theoretical studies, the interventions were made. The original course included only activities for assessment, delivery and

organization. After the intervention, the course provided modules within each of the six types of activities for foreign language education available in the LMS Moodle, i.e. Creation, Organisation, Delivery, Collaboration, Communication, and Assessment. These activities fulfilled the requirements of the students expressed in the questionnaires distributed to answer the RQ 1.

The original course was designed for individual work; it did not contain any collaborative tasks, neither any communication activities. Even though it was delivered as a part of a blended course, and the feature of collaboration and communication was added during the delivery in the F2F part, the research showed that the learners really missed collaborative tasks and communication in the Moodle course. Thus, the intervention included:

1. glossary created by the learners, in which entries were created by groups of students and possibly complemented by multimedia content;
2. blog created in the form of videos uploaded by groups of students as their assignment; and Forum.

Answer to RQ 2

With the aim to answer the RQ 2, the researcher organized five focus group meetings. Four meetings during the use of the initial version of the course, the fifth after the intervention. The number of meetings differ, since the analysis of the course before the intervention needed a more detailed approach to incorporate improvements; what is more, the availability of the sample played role. However, since the data were analysed qualitatively, not quantitatively this fact did not influence the results.

All the focus groups were video recorded, transcribed and coded. In this paper, just the relevant codes for Category 3 - Communication, with Code 1 (Collaborative learning enhancement), Code 2 (Sufficient interaction), Code 5 (Online communication), and Code 6 (Other form of communication) are used. The results of the focus groups are included in Table 3 below.

Table 3 Focus group analysis: Category 3 - Communication

Codes	FG	Examples
1. Collaborative learning enhancement	FG1	S2: "I like working in groups more than individual work. For example, last assignment; well, I know we are supposed to do them individually, but I did one half; Monika did the second half; then we checked our halves together and corrected mistakes. This is kind of working I like and through which I learn." S3: "I agree with him. I know we should do the assignments individually, but I think that group work is the best for learning. When somebody explains to you the issues, you remember more, so it is better when we cooperate."
	FG2	S1: "...and it was fun to work on those videos." S6: "Well, it is always a problem to meet and work on some group project (pause) but when we were doing those English in new space assignment, the internet communication was enough. We did it through an application on the internet and we were chatting and discussing it."

2. Sufficient Teacher-Student communication	FG1	S1: "...I like it that during seminars we can discuss various issues" S3: For me, communication with you is sufficient because I may ask during the seminar anything I want and I always get an answer and on the other hand, the system provides us with everything – lecture, materials, so if I need anything I am able to find proper information myself." S4: "Well, interaction with you is the reason that I work on my assignments at school. I may ask anything."
5. Online communication (Facebook, email, etc.)	FG1	S1: "Facebook is more comfortable than sending messages through Moodle." S2: "It [Facebook] is quicker." S4: "...everyone has an application in smartphone." S5: "We have group e-mail, so when we need anything, we are discussing things there, or Facebook." S3: "...we have that Facebook group where we share everything." M: "Have you ever tried to message someone via Moodle?" S3: "No, and I think that it is not necessary to use many communication channels; as I have already mentioned, we have Facebook group. Everybody has an application in smartphone, and this is enough."
6. Other form of communication	FG1	M: "So how do you communicate about assignments when you are at home?" S1: "We call each other." S2: "Yes, we call..." S3: "Well, sometimes I call someone when I am at home and need help."
	FG2	M: "Why don't you use forums in the course?" S5: "...because seminars and lectures are enough for us." S14: "...and if we really, like need to discuss issues, we use Facebook chat or discussion in Facebook group." M: "So, this is the main reason why you don't use forums, because you use Facebook anytime? Am I right?" S3: "Well, if I may summarize it, why should we use more communication channels? ...we discuss issues here [seminar, lecture], and on Facebook...it seems logical we don't need to use forums in the course." S5: "We also use our department's [Facebook] group"

The analysis of the results from the focus group records shows that in the original version of the course students missed assignments or other activities that would support collaborations. After the interventions were made, students had generally positive views regarding collaboration supported by online communication.

As for communication between students and the teacher during the duration of the case study, students expressed that communication with the teachers during the lectures and seminars was satisfactory and they did not need to communicate with them online. On the other hand, they communicated online with each other often, mostly via Facebook. Hence, an effective use of current social networks for study purposes was demonstrated via blending face-to-face communication with the

teacher during the seminars and online communication with classmates at any place and time.

It can be concluded from the results that the potentials of using the Web 2.0 tools was exploited and appreciated by the students, they welcomed visualisation (videos) and collaborative activities. However, in the field of communication, the potential was not satisfactorily used. One of the reasons is that the course was blended, and thus students used the opportunity to communicate during the face-to-face part. Moreover, the students were used to social networking sites (especially Facebook) and preferred using it for their communication also about the issues from the course.

Answer to RQ 3

The third question is necessary for the design-based research. It is not enough to be satisfied with the results. Teachers should try to use what their research has discovered to develop better learning environments for their learners.

The focus group revealed that students appreciated Quizzes and asked for more of them.

Table 4 Code 11 – Possible improvements.

11 Possible improvements	Forum; Using Moodle in other course; Group activities; Self-assessment quiz	
	FG2	S5: "I would appreciate if you added more quizzes."

In Focus group 2 (FG2), which was held after the intervention, the demand for more quizzes was expressed. This shows the need for interactivity, which can be satisfied in further improvement of the course.

Next potential can be seen in the answers in Table 2, Code 5 (Online Communication) above. The students did not use the communication channels provided by the LMS Moodle, since they used Facebook. They do not like to have too many different communication channels, which becomes clear in case of smartphones with screens that are too small for more applications to be open on one screen. Nevertheless, this pitfall of the LMS can be solved by opening a Facebook group, which will serve just the course and connect it with its content and schedule.

The analysis shows that the teacher underestimated this outcome from the Focus group. It appeared in FG1, which was held before the intervention; however, no action was taken.

Next, the students in the focus groups expressed their satisfaction with sharing the content (Category 1 – Overall use), which is the potential established during the second phase of Focus group meetings. Indeed, the exploitation of this benefit was perceived as very motivational for the students as they were likely to see other classmates' work and learn or be inspired by it.

Table 5 Code 4 - Sharing the content.

4 Sharing the content	FG2	S1: "I think it is great that we can see our classmates' work now [videos in blog]." M: "Did you watch the videos of your classmates at home?" S1: "Yes, we wanted to get some inspiration." S6: "It was really great that we could see those videos and laugh."
-----------------------	-----	---

Video assignment was highly appreciated. It satisfied three demands of Generation Z learners: visualisation, communication, and sharing.

The RQ3 can be answered positively. There are further potentials, which can be used in future improvement of the course. The Focus group research tool revealed some of them, as

adding more interactive quizzes, video assignments (or any other collaborative tasks), and using social networks for communication. When teachers combine these findings with their own analysis of the course and studies of relevant resources, they come to even better solutions. That is how the design-based research works.

4 Discussion

Since 1996, which was the year when Warschauer (1996) wrote his study on merits of CALL, technologies have radically changed. Since then, the Web 1.0 (discussed above) developed to Web 2.0 and learners' generation changed as well.

However, it can be claimed that technologies have not lost any of the potentials described by the above-mentioned authors; moreover, many new potentials have occurred since then reflecting the change of the WWW nature.

In line with Riasati, Allahyar and Tan (2012) who analysed a number of studies concerned with the issue of technology in language education, it was proven that our blended model supported collaborative learning, which is a benefit highly appreciated by the new generation of learners. Recently, many scholars have studied the effects of new tools brought to education by Web 2.0 (e.g. Karvounidis, Chimos, Bersimis, & Douligeris, 2014 and 2018; Barhoumi, 2017); using Moodle and online tools (e.g. Costa, Alvelos, & Teixeira, 2012; Evans, 2011; Karvounidis et al., 2018; Al-Kindi & Al-Suqri, 2017); Generation Z learners [e.g. McCrindle & Wolfinger, 2010; Cilliers, 2017; Poláková & Klímová, 2019; Rothman, n.d.); blended learning [e.g. Ramasubbu, 2017; Henrich & Sieber, 2009]; constructivism [e.g. Bada, 2015; Evans, 2011]; and connectivism [e.g. Siemens, 2006; Veselá, 2013]. This study is an attempt to use all these practices and theories, find their intersection and offer an example how to make the environment to fit the learners.

Even though the results of our research are limited by its scope, and thus cannot be generalized, they are of importance in the field of pedagogy, since they may serve as a base for further research.

5 Conclusion

The results of the research reveal that despite the fact that the course in the LMS Moodle used for the e-learning part of subject delivered in the blended learning mode was relatively new and modern; the seven years from its start were a rather long time, making it outdated. Meanwhile, the new generation of learners entered the educational process. They are the Generation Z learners. The old Web 1.0 is not enough for them.

The case study, which was conducted on a relatively small group of learners can still teach a lesson. It may be dangerous to generalize the results, as they may be different for another group of learners, another subject, another country, another LMS, even another teacher. Moreover, it is surely impossible to replicate the research. The conditions will never be the same.

However, there are some general conclusions, which can be drawn:

1. Teachers should always study to be able to upgrade and update their knowledge.
2. Teachers should do their best to accommodate the needs of their students.
3. Educational environment is always on the move.

Many questions are still not answered and need more research. Our article deals just with positive aspects of using the Internet in education. We do not deal with the dangers here; nevertheless, we admit that they exist. The next step would be to find out the ways to deal with them.

To fulfil the philosophy of the design-based research, we should continue our effort and keep updating and upgrading the content.

Furthermore, we need to study the characteristics of every new generation. Web 2.0 seems to come to its dawn and Web 3.0 rises. We know that it will use the synergy of new technology trends and will be even more connected, more open, more intelligent (Bozkurt & Ataizi, 2015). "In terms of language learning, Web 3.0 will track, record, evaluate our activities in an interactive manner that will allow advance learning analytics. [...] [which] might be very effective [...] (*ibid.*, p. 164)." Will we be able to use these tools? The problem for teachers and learners is that they are very often different generations. Can a digital immigrant (teacher) assimilate to a digital native (learner)? We are convinced that they should, or at least try, as the immigrants from less developed countries struggle to accommodate in higher developed environments.

Literature:

1. Al-Kindi, S. S. & Al-Suqri, M.N. 2017. Mobilizing learning: Using Moodle and online tools via smartphones. *International Journal of Knowledge Content Development & Technology*, 7, 67-85.
2. Amiel, T. & Reeves, T. C. 2008. Design-Based research and educational technology: Rethinking technology and the research agenda. *Educational Technology & Society*, 11, 29-40.
3. Antón, M. 1999. The discourse of a learner-centered classroom: sociocultural perspectives on teacher-learner interaction in the second-language classroom. *The Modern Language Journal*, 83, 303-318. doi.org/10.1111/0026-7902.00024
4. Bada, S.O. 2015. Constructivism learning theory: A paradigm for teaching and learning. *IOSR-JRME*, 5, 66-70.
5. Barhoumi, C. 2017. Analysis of technological, individual and community factors influencing the use of popular Web 2.0 tools in LIS education. *The Electronic Library* 35, 977-993.
6. Bleed, R. 2001. A hybrid campus for the new millennium. *Proceedings of EDUCAUSE Southeast Regional Conference. Orlando, Florida, the USA. June 27-29. 2001*. Retrieved from <https://er.educause.edu/articles/2001/1/a-hybrid-campus-for-the-new-millennium>.
7. Bozkurt, A. & Ataizi, M. 2015. English 2.0: learning and acquisition of English in the networked globe with the connectivist approach. *Contemporary Educational Technology*, 6, 155-168.
8. Brown, K.L. 2003. From teacher-centered to learner-centered curriculum: improving learning in diverse classroom. *Education*, 124, 49-54.
9. Cilliers, E. J. 2017. *The challenge of teaching generation Z. PEOPLE: International Journal of Social Sciences*, 3, 188-198. doi.org/10.20319/pijss.2017.31.188198
10. Cohen, L.; Manion L. & Morrison, K. 2011. *Research methods in education*. London: Routledge.
11. Cornelius-White, J. 2007. Learner-centered teacher-student relationships are effective: A meta-analysis. *Review of Educational Research*, 77, 113-143. doi.org/10.3102/003465430298563
12. Costa, C., Alvelos, H. & Teixeira, L. 2012. The use of Moodle e-learning platform, a study in a Portuguese university. *Procedia Technology*, 5, 334-343. doi.org/10.1016/j.protcy.2012.09.037
13. Diomidous, M., Chardalias, K., Magita, A., Koutonias, P., Panagiotopoulou, P. & Mantas, J. 2016. Social and psychological effects of the Internet use. *Acta Inform Med.*, 24(1), 66-68. doi.org/10.5455/aim.2016.24.66-68
14. Evans, D. 2011. Moodle and Constructivism. *ETEC 510*. Retrieved February 21, 2020 from http://etec.cilt.ubc.ca/510w/iki/index.php?title=Moodle_and_Constructivism&oldid=63254.
15. Faizi, R. 2018. Teachers' perceptions towards using Web 2.0 in language learning and teaching. *Educ Inf Technol*, 23, 1219-1230. doi.org/10.1007/s10639-017-9661-7
16. Henrich, A. & Sieber, S. 2009. Blended learning and pure e-learning concepts for information retrieval: experiences and future directions. *Informational Retrieval*, 12, 117-147. doi.org/10.1007/s10791-008-9079-3
17. Karvounidis, T., Chimos, K., Bersimis, S. & Douligeris, S. 2018. Factors, issues and interdependencies in the incorporation of a Web 2.0 based learning environment in higher education.

Education and Information Technologies, 23, 935-955. doi.org/10.1007/s10639-017-9644-8

18. Karvounidis, T., Chimos, K., Bersimis, S. & Douligieris, S. 2014. Evaluating Web 2.0 technologies In Evaluating Web 2.0 technologies. *Journal of Computer Assisted Learning*, 30(6), 577-596. doi.org/10.1111/jcal.12069
19. Lexikológia a frazeológia anglického jazyka. Available online: <https://edu.ukf.sk/course/view.php?id=579> (accessed 01. 09. 2019).
20. Lim, J. & Richardson, J. C. 2016. Exploring the effects of students' social networking experience on social presence and perceptions of using SNSs for educational purposes. *The Internet and Higher Education*, 29, 31-39. doi.org/10.1016/j.ihe.2015.12.001
21. McCrindle, M. & Wolfinger, E. 2010. *The ABC of XYZ: Understanding the Global Generations*. University of New South Wales Press. ISBN: 9781742245638.
22. Moodle. n.d. Available online: <https://moodle.org> (accessed on 07. 11. 2015).
23. Open Education Database. n.d. *101 Web 2.0 Teaching Tools*. Available online: <https://oedb.org/ilibrarian/101-web-20-teaching-tools/> (accessed 19. 09. 2019).
24. Poláková, P. & Klímová, B. 2019. Mobile technology and Generation Z in the English language classroom—A preliminary study. *Edu. Sci.*, 9(3), 203. doi.org/10.3390/educsci9030203
25. Prensky, M. 2001. Digital natives, Digital immigrants. Part 1. *On the Horizon*, 9, 1-6. doi.org/10.1108/107481201110424816.
26. Puschenreiterová, J. 2015. Student's perceptions on e-learning with Learning Management Systems in English language courses : A qualitative survey. *DisCo 2015: From Analog Education to Digital Education : 10th Conference DisCo Reader*, Praha : Centrum pro studium vysokého školství. pp. 76-89. ISBN 978-80-86302-47-8.
27. Ramasubbu, S. 2017. *The Evolution of Blended Learning*. HuffPost. 2017. Retrieved from https://www.huffpost.com/entry/the-evolution-of-blended-learning_b_6666284.
28. Riasati, M.J., Allahyar, N. & Tan, K-E. (2012). Technology in language education: Benefits and barriers. *Journal of Education and Practice*, 3:5, 25-30.
29. Rothman, D.A. (n.d.). *A tsunami of learners called Generation Z*. Retrieved from https://mdle.net/Journal/A_Tsunami_of_Learners_Called_Generation_Z.pdf
30. Siemens, G. (2006). *Knowing knowledge*. Lulu.com.
31. The Design-Based Research Collective. (2003). Design based research: An emerging paradigm for educational enquiry. *Educational Researcher*. 32, pp.5-8.
32. Veselá, K. (2008). *Applied English lexicology*. El-dům. Brno.
33. Veselá, K. (2013). Connectivism in foreign language education. *Education and Languages in Europe*, 25, 320-325.
34. Wang, F. & Hannafin, M.J. (2005). Using design-based research in design and research of technology-enhanced learning environments. *Educational Technology Research and Development*, 53, 5-23. doi.org/10.1007/BF02504682
35. Warschauer, M. (1996). Computer assisted language learning: An introduction. In Fotos, S. (ed.). *Multimedia language teaching*, (pp. 3-20). Tokyo: Logos International. Retrieved from Available online: <http://www.ict4lt.org/en/warschauer.htm#garrett>
36. Web 1.0. (n.d.) Available online: <https://www.techopedia.com/definition/27960/web-10> (accessed 22. 10. 2019).

Primary Paper Section: A

Secondary Paper Section: AM

Appendix A

Pre-research questionnaire

Dear student,

I am a PhD. student at Constantine the Philosopher University in Nitra, Department of Language Pedagogy and Intercultural Studies. I would like to ask you to fill in this questionnaire. The purpose of the questionnaire is to elicit students' perceptions on English Lexicology e-learning course you worked with in winter semester.

The questionnaire is anonymous, and it will be used for the research purposes only.

1. Did you like the possibility to work with the English Lexicology e-learning course last semester? Why?/Why not?

.....
 2. Do you think the use of e-learning course helped you in your learning of English Lexicology? (If so, how? / If not, why not)

.....
 3. What kinds of activities or study materials do you think should be added to the contemporary version of the online course (e.g. discussion forums, chats, videos, glossaries, quizzes, etc.)? Why?

.....
 4. What are the major disadvantages that you see in the use of e-learning course within the English Lexicology course? Name at least 3 disadvantages (1st is the most important disadvantage.)

1.....
 2.....
 3.....

5. What are the major advantages that you see in the use of e-learning course within the English Lexicology course? Name at least 3 advantages (1st is the best one.)

1.....
 2.....
 3.....

Thank you very much for your answers ☺

A VIEW ON THE LEVEL OF READING STRATEGIES OF THE SELECTED GROUP OF FIFTEEN YEARS OLD UKRAINIAN PUPILS

^aDANA VICHERKOVÁ

University of Ostrava, Faculty of Education, Department of Education and Adult Education, Fráni Šrámka 3, Czech Republic
 email: ^adana.vicherkova@osu.cz

Abstract: The paper presents results of the quantitative research on the level of reading strategies of fifteen years old pupils from Kyiv and Chernihiv region and their comparison with the results of Czech pupils of the same age (Vicherková, 2018). The research sample consisted of 121 subjects. The research data were obtained through the structured questionnaire. The main conclusion of the research is that Ukrainian pupils consider themselves reading literate. However, the fact contradicts the actual level of their reading strategies. The questionnaire items categorisation delimited the main factors influencing the fifteen years old Ukrainian pupils' level of reading strategies as well as the reading strategies level of the fifteen years old Czech pupils.

Keywords: reading strategies, fifteen years old Ukrainian pupils, reading development strategies, PISA international research.

1 Introduction

The current concept of the education process is based on the long-term need of the society to develop ranges of skills helping to effectively search and mainly to correctly possess and evaluate newly emerging information and to link them in context with the databases of information possessing a long-term validity. An information flow influences our personal, professional and public life.

1.1 Dynamics of communication and teaching changes

The dependence of society on information is increasing, and it is essential to understand the dynamics of communication changes interdisciplinarily, complexly, while involving a broader context, but also regarding a more in-depth professional field specification. Both approaches towards the information content of data processing must be developed and formed in close relation to the informational form.

Not only traditional but also activational and complex methods, together with cooperative forms, should be applied in modern teaching. Different attitudes to the current demand for a didactically complex proposal of the reading literacy, reading strategies and critical thinking education focusing on lower secondary schools' pupils exist throughout European and international education context. On the contrary, the educational trends and schooling systems are more consistent in the current demand for reading literacy education for younger pupils (4–10 years) as is confirmed by the increasing interest of the pedagogical public in the results of ten years old pupils' reading literacy international research (PIRLS).

The interest of countries to participate in the international researches on the reading literacy focused on the sample of fifteen years old pupils varies. Various education systems prevent the publication of education results even on the national, regional and local level much less in the European or international scope. Countries are not unanimous in their approaches to publishing of the education outputs and joint examination of possible ways to increase the general education level. Isolation of education system and closing off from feedback on the educational attainment levels in various areas, such functional literacy (e.g. reading, mathematics, science, finance, information, digital technologies, etc.) causes that teachers and school management do not know the education level of pupils they teach. Non-transparency of education policy procedures allows to not lead individual school institutions to responsibility for the education results of pupils. International IEA (International Association for Evaluation of Educational Achievement) researches assumed that the participation of the high number of countries in the international researches PIRLS (Progress in International Reading Literacy Study), PISA

(Programme for International Student Assessment) or TIMSS (Trends in International Mathematics and Science Study) might contribute to the effectivity of literacy-focused education development. The international research organisers as well as many academics in the role of IEA representatives "were convinced that if sufficient information on a sufficiently diverse group of countries were obtained, their analysis would reveal important patterns that could not be revealed within the systems. They aimed to identify factors that have a consistent and significant impact on learning outcomes" (Straková, 2016, p. 12).

1.2 PISA Project and reading literacy

Despite specific barriers of several countries to participate in the international researches of reading literacy of fifteen years old pupils (PISA 2009, 2018), researchers stated that the most developed countries achieve better results in the PISA research while the countries of former Eastern bloc achieve better results in the TIMSS research. The finding was interpreted by the different approach to the teaching of analysed subjects" (Straková, 2016, p. 31). PISA Project analyses the competence level of fifteen years old pupils. The result analysis focused on the functional literacy, more specifically on the reading literacy (mathematical, scientific) allows comparison and objectively driven external view on the performance of educational systems throughout the European and world education reality. PISA researches (2000, 2009, 2018) focused on the reading literacy provide analytically processed data to identify positives and negatives of the pupils from respective countries. PISA results help to understand the uniqueness and characteristic features of research participants, who were ranked among the best and the worst. More than 500 000 pupils born in 2002 from 79 countries, participated in the 2018 PISA international research.

PISA Project is organised in all OECD (Organisation for Economic Cooperation and Development) member states, but other countries and economic regions can participate as well. The further term will follow the prepared trend of international comparison. 2021 PISA research will be focused on the mathematical competency and recently on an innovative subject – creative thinking. For 2024, PISA plans (besides constant interest in reading, mathematical and scientific literacy of pupils) to test the ability of pupils to learn in a digital world and to perform voluntary testing of the competency in foreign languages. Scientific question categories (PISA, 2018) are delimited as scientific competencies, knowledge categories (i.e. theories, procedural and epistemic knowledge). Development of the individual's cognitive edge and critical thinking level, as well as positive behaviour patterns formation, take place in the course of education. PISA, TIMSS, PIRLS, PIAAC and other researches influence trends in the educational policy of many countries. Many countries attend different international researches focused on reading literacy, e.g. Ukraine attended TIMSS research (2007, 2011) and most recently also the PISA research (2018).

2 The value of Education as perceived by foreigners living in the Czech Republic

More than 500 thousand foreigners live in the Czech Republic. About 15 000 pupils (from Ukraine, Slovakia, Vietnam etc.) are educated at the Czech primary schools. P. Kobzová (2019, in Vyhňálková, Plischke) performed research on the value of education as perceived by Ukrainian pupils attending primary schools in the Czech Republic. The study analysed the value of education and level of the Czech and Ukrainian education systems by the scope of the Ukrainian pupils' parents. The reflection of differences between the Czech and Ukrainian education context confirms that "respondents positively evaluate the effort of Czech teachers to expose pupils to the curriculum using more interesting forms, games, projects, excursions and

with support of many school supplies. However, the progress in the Czech school is quicker, and the knowledge of pupils may be shallow while in Ukraine, the learning is deeper, children are given more tasks..." (Kobzová, 2019, in Vyháňková, Plischke, p. 50). Education is a path to self-realisation, social prestige, right, need and obligation for children and adult Ukrainian population. The accessibility of quality education is limited by the financial status of families and by the current political-economic situation of Ukraine. Ukrainians make up an active group of foreigners educated at various types of schools abroad, including the Czech Republic. Many factors (external and internal) influence the quality of education, of which the level of reading strategies of the participants in the educational process also appears to be a key factor.

3 Reader-oriented background

The pedagogical public supporting the performance of reading literacy research in the broader international context and within the life-long learning highlights the need to elaborate reading-oriented theoretical background for reading literacy development to the application planes across the field. Absence of theoretical background supporting the development of reading strategies of lower secondary school pupils is evident also in the Czech Republic, Slovakia and Ukraine. Czech pupils achieve poor results in international researches (PISA 2009, 2018) focused on reading literacy. Many European countries prevent their participation in the international reading literacy researches for various internal and external political reasons, nevertheless the interest in the education of future teachers in the sphere drawing from the theoretical concepts of preconceptions and aspects of constructivism (in the sense of activity concept) is increasing as was also mentioned by Paris, Paris (2001). The authors also mentioned the importance of strategic learning development throughout the strategic reading, which positively contributes to pupils' reading literacy even during autoregulation practice. The interest to educate the future generation of teachers in communicative, information, digital, mathematical, scientific literacy as a part of functional literacy dynamically increases. Harits et al. (2015) and Deyo (2018) highlighted the importance of formation of pupils' and adolescents' preconceptions in relation with the understanding in the communicative process focused on the development of functional literacy by the form of interactive ability to lead participative dialogue in the international context. The growing number of educational policy representatives understand that the level of reading literacy is closely linked to the economic, social and cultural environment. Abilities of a teacher in the sphere of functional literacy is directly related to the level of skills of pupils under the teacher's influence. E.g. Gavora (2002, 2003, 2005) was interested in the problem of literacy models in Slovakia as well as J. Doležalová (2005) and D. Vicherková (2018) in the Czech Republic. The term "reading strategies" was defined in the 1980s. Dijk and Kintsch (1983) pointed out the importance of understanding the term "reading strategies" by its description: "We have an explicit goal to be reached, the solution of a problem. And there may be specific operations, mental steps, to be performed to reach that goal. These steps are under our conscious control, and we may be at least partly able to verbalise them so that we can analyse the strategies followed in solving the problem." (Dijk, Kintsch, 1983, p. 68). If the reader intentionally checks the understanding of written information, they consciously use reading strategies as was highlighted by Afflerbach, Pearson, Paris (2007). The requirement of implementing reading strategies in learning is currently gaining intensity. D. H. Tracey & L. Morrow (2012) were interested in the theoretical approaches to literacy development. Vicherková (2016, 2018) and Paličková (2019) highlighted factors influencing the specific system in the regularity of the use of the necessary reading strategies at the stage of their training (e.g. a range of deliberate procedures in the implementation of reading activities) and reading skills (a range of automated reading activities procedures) and reading competencies. "Due to the increasing pressure on the increase of for-learning culture as a starting point for the pro-learning society, the examined pupils consider including successful

learning activity interactive learning" (Vicherková, 2018, p. 424).

Qualitative multicase study (Velčovská, 2019) was focused on a problem of the development of reading strategies on the lower secondary schools in the Moravian-Silesian Region in the Czech Republic. The study analysed learning of Czech and English throughout the communication and reading focused didactic games. It highlighted the need to teach pupils to think critically by using activation methods and RWTC methods (e.g. I.N.S.E.R.T., Five-leaf, Four corners, etc.) when reading the text. The transfer of expertise and research outputs, not only from the international researches on reading literacy but also from regional researches on reading strategies, is performed by Department of Education and Adult Education at the Faculty of Education, University of Ostrava in the Czech Republic which performs the research of curriculum, study motivation, professional orientation, reading strategies of pupils of engineering-oriented secondary technical schools in the Moravian-Silesian Region. The organisation of other topical regional researches of reading abroad, e.g. in Slovakia, Georgia, Ukraine belongs among other notable activities of young researchers. The first outputs from the research of fifteen years old primary school pupils on Ukraine point out the current need for education in the field of critical and strategic thinking teaching, problem-solving, pupil motivation and meta motivation for reading, varied range of student reading strategies when reading different types of texts, etc. Harmonisation of effective autoregulation and external management contribute to the success in learning.

4 Methodology of quantitative research on fifteen years old pupils in Ukraine and the Czech Republic

Methodological framework of the research is formed by the curricular document (Framework Education Program for Primary Education) with target competence focus e.g. on three key competencies (learning competence, problem solving competence, communicative competence) and selected outputs of international researches PISA (2000, 2009, 2018) with the focused on the reading literacy development.

4.1 Research methodology

The pilot phase of the research was performed in September 2018 on the sample of 10 fifteen years old pupils (of Ukrainian origin) who live in the Czech Republic and attend the 9th year of the primary school in Ostrava and Opava. A survey was performed on the sample of selected pupils. The structure of the questionnaire corresponded to the concept of the structured interview with 15-year-old pupils in elementary schools in the Moravian-Silesian Region (Vicherková, 2018).

Based on the previous experience, the research was based on the identical approach but used a different research method – structured questionnaire. The research was carried out from June 2018 to January 2019 on the sample of 121 pupils attending three primary schools in Ukraine, in Kyiv and Chernihiv region. Fifteen primary schools (rural and urban) in Kyiv and Chernihiv region were addressed. Only two urban schools expressed their interest to participate in the research. The research sample was selected intentionally. Data collection was performed in person through a structured questionnaire and via two submitters (Doctoral study programme student of Ukrainian origin and mentor – academic).

4.2 Evaluation of selected items of the questionnaire

Problem questions of structured questionnaire were classified into four categories, including:

1. Reading experience and reading needs
2. Use of reading strategies
3. Relationship to reading at school
4. Reflection of the value of reading

4.2.1 Reading experience

The target group of the respondents answered the question about reading for joy or knowledge. A group of 81 (66.94%) respondents stated they read for joy, 40 (33.06%) respondents stated they do not read for joy.

A higher number of 87 (71.90%) pupils stated they read for knowledge and a considerably smaller group of 34 fifteen years old pupils (28.10%) stated they do not read for knowledge. Reading for knowledge, tied with the need to prepare for school through reading, slightly prevails over reading for joy.

Sixty-two respondents (51.24%) stated they have a home library and 59 (48.76%) stated they do not have a home library.

Fifteen years old pupils answered the question about a reading role model at home without significant differences in number. Group of 59 (48.76%) pupils stated they have a reading role model and a group of 62 (51.24%) stated they do not have any reading role model.

Group of 79 (65.29%) pupils, more active in reading, answered they read more than three books during the previous year and 42 (34.71%) pupils, more passive in reading, stated they did not read more than three books during the previous year.

Another item analysed the problem of pupils' relationship to books, reading need and pupils' motivation to choose and read a book of own interest from the offer of the public library. 42 (34.71%) pupils answered they visit a library, and more than a half – 79 (65.29%) respondents answered they do not visit a library. According to the previous research (Vicherková, 2018), 145 (47.39%) Czech pupils visit a public library regularly as compared to 42 (34.71%) Ukrainian pupils.

The question examining whether the pupils participate in an interactive discussion about the text was focused on the context of the problem, the need to discuss and share information from the text at school and home environment. Group of 51 (42.15%) Ukrainian fifteen years old pupils stated they discuss the text at home or school. More than a half, 70 (57.85%) pupils answered they do not discuss the text at home or school.

An interesting discovery is that only 36 (29.75%) fifteen years old pupils from Ukraine stated they need a teacher's exposition to understand the read and more than a half, 85 (70.25%) do not need a teacher's exposition to understand the text. It is clear from the data above that more pupils prefer autonomy in the procession and evaluation of information.

The question, about pupils' preference for certain topics, was focused on the problem of thematic reading. 67 (55.37%) pupils stated they prefer a particular topic and group of 54 (44.63%) pupils stated they do not prefer thematic reading. Ukrainian fifteen years old pupils prefer thematic reading they are interested in from the perspective of education, interests and personal activities.

4.2.2 Selected reading strategies

Another part of the structured questionnaire was focused on communicative strategies, thought processes, reading strategies helping fifteen years old Ukrainian pupils to understand the written text. 78 (64%) pupils search for the main idea to understand the text and 43 pupils (35.54%) do not search for the main idea to understand the text.

As for the use of other reading strategies that help pupils to understand the text, a group of 48 (39.67%) pupils stated they create a synopsis (structure) of the text and a group of 73 (60.33%) pupils stated they do not create a synopsis (structure) to understand the text. Fifteen years old pupils also stated that:

- Only 33 (27.27%) pupils use the strategy of posing ancillary questions to understand the text (during and after the reading)
- 59 (48.76%) pupils search for the context about the information read to understand the text
- According to 74 (61.16%) respondents, quiet reading is prevalent at school

4.2.3 Reading at school

Use of different information sources, i.e. the learning sources such as textbooks, worksheets, expert texts, everyday texts, media and digital texts etc. form another topic of the research. A group of 112 (95.56%) Ukrainian pupils stated that the textbooks of the native tongue are understandable, only 9 (7.44%) Ukrainian pupils considered native tongue textbooks not understandable. In comparison with the research of the Czech pupils (Vicherková, 2018), the Ukrainian pupils consider textbooks of their native tongue as understandable in a more significant number than the selected group (251, 82.03%) of the Czech fifteen years old pupils.

- 117 (96%) Ukrainian pupils work only with textbooks at school
- 101 (83.47%) Ukrainian pupils only read books as school duties
- 73 (60.33%) Ukrainian pupils consider work with text at school as crucial for their everyday experience
- 34 (28.10%) Ukrainian pupils read and analyse the text only in the native tongue learning
- 96 (79.34%) Ukrainian pupils think that the topical interlinking in the native tongue textbooks exists
- 77 (63.64%) Ukrainian pupils stated that learning activities contribute to the understanding of the text and its remembering

4.2.4 Reflection of the text

Reflections on the value of the text in terms of both life needs and human rights can be considered as a critical area of research intentions that have shown that:

- 85 (70.25%) of respondents consider reading a life-long process
- 99 (81.82%) of respondents consider reading a life-long need
- 100 (82.64%) of respondents consider themselves reading literate
- 55 (45.45%) of respondents consider a book the most relevant source of information
- 19 (15.70%) of respondents dedicate more time to reading books than other media
- 9 (7.44%) of respondents consider a book their friend

The traditional grip of the reading value and strategical thinking in the current digital age is estimated similarly weak by fifteen years old Czech and Ukrainian pupils. According to the research (Vicherková, 2018), 263 (85.95%) Czech pupils stated they dedicate more time to watching other media than reading books; the results are very close to the opinion of fifteen years old Ukrainian pupils, 102 (84%) of whom stated they do not dedicate more time to reading books than watching media. Both groups (the Czech and Ukrainian pupils) also agreed (according to Vicherková, 2018) on:

- Majority of 267 (87.25%) Czech and 100 (82.64%) Ukrainian consider themselves as reading literate although:
- 242 (79.08%) Czech pupils do not consider books as the most significant source of information, and 138 (45.10%) of Czech pupils do not consider the book their best friend,
- 66 (54.55%) Ukrainian pupils do not consider books the most significant source of information,
- 112 (92.56%) Ukrainian pupils do not consider books their best friend.

4.3 Evaluation of hypotheses

The evaluation of hypotheses (H1a - H1d) is related to the use of a certain kind of reading strategy and the idea that pupils consider themselves reading literate. The research did not confirm that:

- pupils who search the main idea to understand the text consider themselves reading literate more frequently than pupils who do not search the main idea to understand the text; (hypothesis H1a)
- pupils who create a synopsis (structure) of the text consider themselves reading literate more frequently than pupils who do not create a synopsis (structure) of the text; (hypothesis H1b)
- pupils who ask ancillary questions to understand the text consider themselves reading literate more frequently than pupils who do not ask ancillary questions to understand the text; (hypothesis H1c)
- pupils who search for additional context about the information during reading consider themselves as reading literate more frequently than pupils who do not search for context during reading. (hypothesis H1d)

The research confirmed that:

- fifteen years old pupils who stated they read for joy consider books the most significant source of information; (hypothesis H2)

Tab. 1: Detected and expected frequencies related to H2

Pearson's chi-square = 7.7691 degree of freedom = 1 significance p= 0.0053			
Question A1	Question D5 (yes)	Question D5 (no)	Line totals
yes	44 (3.82)	37 (44.18)	81
no	11 (18.18)	29 (21.82)	40
Column totals	55	66	121

- fifteen years old pupils who stated they read for knowledge consider books the most significant source of information; (hypothesis H3)
- pupils who stated the influence of extracurricular activity on the choice of a book search additional context about the information more frequently than other pupils; (hypothesis H4)
- pupils who have their home library read more books in one year than pupils who do not have their home library; (hypothesis H8)
- pupils who read more than three books during the last year discuss with someone (at home, at school) about the text more frequently than pupils who did not read three books last year; (hypothesis H9)

The research also did not confirm that:

- pupils who have their reading role model discuss with someone (at home, at school) about the text more frequently than pupils who do not have a reading role model; (hypothesis H5)

Tab. 2: Detected and expected frequencies related to H5

Pearson's chi-square = 1.3309 degree of freedom = 1 significance p= 0.2486			
Question A4	Question A7 (yes)	Question A7 (no)	Line totals
yes	28 (24.87)	31 (31.13)	59
no	23 (26.13)	39 (35.87)	62
Column totals	51	70	121

- pupils who have their own home library consider themselves reading literate more frequently than pupils who do not have a home library; (hypothesis H6)
- pupils who read and examine the text only in the learning of native tongue do not consider work with text (reading and analysis) necessary for their everyday experience (everyday life); (hypothesis H7)

5 Discussion

The research confirmed the effectivity of diagnostic tool (structured questionnaire) and delimited the factors influencing the level of reading strategies of fifteen years old pupils in the selected regions of Ukraine. The research of reading strategies of pupils of Moravian-Silesian region in the Czech Republic (Vicherková, 2018) and current results of the questionnaire (2019) confirmed the fact that pupils consider themselves reading literate, but the results of their reading strategies level do not correspond with the opinion. Czech pupils were classified as below average in the previous research of reading literacy (PISA, 2000, 2009) due to their results of the reading literacy tests.

Four problem areas were delimited by the categorisation of question items of the questionnaire as a classification of factors influencing the level of reading strategies of selected fifteen years old pupils in Ukraine.

Hypotheses H1a, H1b, H1c, H2, H3, H4, H7, H8 and H9 were confirmed consistent with the research (Vicherková, 2018).

Hypotheses H1d, H5 and H6 were not confirmed consistent with the research (Vicherková, 2018).

6 Conclusion

The analysis of the educational reading reality by the scope of fifteen years old pupils from selected Ukrainian regions confirmed that:

- more than half of Ukrainian and Czech pupils do not consider books the most significant source of information
- most of the Czech and Ukrainian pupils consider themselves reading literate
- most of the Czech and Ukrainian pupils dedicate more time to watching media than reading books

Description of current state of education in the sphere of pupils' learning strategies and description of readers' learning of fifteen years old pupils from selected areas of Ukraine, characteristics, analysis, evaluation and self-evaluation of factors influencing the understanding of written information, metacognitively focused on the reflection of selected fifteen years old Ukrainian pupils of Kiev and Chernigov region can be outlined as the key outputs of our research. We consider the comparison of research results of Czech and Ukrainian fifteen years old pupils to be a significant output of our research.

Literature

1. Afflerbach, P., Pearson, P. D. & Paris, S. G.: *Skills and strategies: Their differences, their relationships, and why it matters*. In Mokhtari, K., Sheorey, R. (Eds.). *Reading Strategies of First and Second Language Learners: See How They Read*. Norwood, MA: Christopher-Gordon Publishers, 2007. ISBN 978-1933-7601-86.
2. Blažek, R., Janotová, Z., Potužníková, E. & Bašl, J.: *Mezinárodní šetření PISA 2018 [PISA Study 2018]*. [online]. [quot. 2019-6-12]. Prague: Czech School Inspectorate, 2019. Accessible from: http://www.csicr.cz/html/2019/Narodni_zprava_PISA_2018/flipviewerxpress.html.
3. Deyo, M. E.: *Perceptions of Program Coordinators, Program Advisors, and Resident Directors of Study Abroad Regarding Their Professional Responsibilities: A Qualitative Social Constructionist Inquiry*. Dissertation submitted. University of Nevada, Reno, 2018.
4. Doležalová, J.: *Funkční gramotnost: Proměny a faktory gramotnosti ve vztazích a souvislostech [Functional Literacy: Literacy Changes and Factors in Context]*. Hradec Králové: Gaudeamus, 2005. ISBN 80-7041-115-5.
5. Gavora, P.: *Gramotnosť: vývin modelov, reflexia praxe a výskumu [Literacy: Evolution of Models, Reflection of Use and Research]*. *Pedagogy*, 2002, 52(2), pp. 171-181. ISSN 0031-3815.

6. Gavora, P., Zápotočná, O.: *Gramotnost: vývin a možnosti jej didaktického usmerňovania* [Literacy: Evolution and Possibilities of Its Didactic Use]. Bratislava: UK, 2003. ISBN 80-223-1869-8.
7. Gavora, P.: *Učiteľ a žáci v komunikaci* [The Teacher and Pupils in Communication]. Brno: Paido, 2005. ISBN 80-7315-104-9.
8. Harits, I. W., Chudy, S., Opletalova, A. & Vicherková, D.: Vicarious Experience by Modeling and Comparing of children stories from Czech and Madura Island: *Behavior and moral perspectives*. *Creative Education*, 2015, 6(7), pp. 683-691.
9. Chudý, Š.: Konkretizácia východisk výchovy v súčasných koncepciách. In: *Hľadání kořenů výchovy v současné společnosti: koncepce, úvahy, názory a dilemata* [Specification of Basic Assumptions in the Current Education Concepts. In: Discovering the Roots of Education in Contemporary Society: Concepts, Reflections, Opinions and Dilemmas] [sborník]. Brno: Paido, 2006, pp. 33-46. ISBN 80-7315-131-6.
10. Kobzová, P.: *Hodnota vzdělávání u žáků z Ukrajiny* [The Value of Education for Pupils from Ukraine]. In Vyhňálková, P., Plischke, J. (eds.). *Aktuální problémy pedagogiky ve výzkumech studentů doktorských studijních programů XIII: Začínající učitel v měnící se společnosti* [Current Problems of Pedagogy in Research of Doctoral Students XIII: Beginning Teacher in a Changing Society], 1st ed. Olomouc: Palacký University, The Institute of Education and Social Studies, 2019, pp. 44-52. ISBN 978-80-244-5475-7.
11. MŠMT ČR: *Rámcový vzdělávací program pro základní vzdělávání* (2017) [Framework Education Program for Elementary Education]. Prague, Czech Republic: MŠMT ČR, 2017. Retrieved from: <http://www.msmt.cz/file/41216/>.
12. OECD: *Measuring student knowledge and skills. The PISA 2000 Assessment of Reading, Mathematical and Scientific Literacy*. Paris, France: OECD, 2000. Retrieved from: <http://www.oecd.org/education/school/programme-for-international-student-assessment-pisa/33692793.pdf>
13. Palečková, J., Tomášek, V. & Basl, J.: *Hlavní zjištění výzkumu PISA 2009: umíme ještě číst?* [The Key Findings of PISA 2009: Do We Still Know How to Read?] Prague: Institute for Information in Education, 2010. ISBN 978-80-211-0608-6.
14. Paličková, A.: *Čtenářská gramotnost jako faktor školní úspěšnosti žáků* [The Level of Reading Literacy as a Success Factor of Pupils in School]. Bachelor Thesis. Ostrava: University of Ostrava, Pedagogical Faculty, 2019. Supervisor Vicherková, D.
15. Paris, S. G. & Paris, A. H.: Classroom Applications of Research on Self-Regulated Learning. *Educational Psychologist*, 2001, Vol. 36, No. 2, pp. 89-101.
16. PISA: *PISA 2009 Results: Executive summary*. Paris, France: OECD, 2009. Retrieved from: <http://www.oecd.org/pisa/pisaproducts/46619703.pdf>.
17. Straková, J.: *Mezinárodní výzkumy výsledků vzdělávání. Metodologie, přínosy, rizika a příležitosti* [International Studies of Education Results. Methodology, Benefits, Risks and Opportunities]. Prague: Charles University, 2016. ISBN 978-80-7290-884-4. Accessible from: https://pages.pdf.cuni.cz/uvrv/files/2016/10/Mezinarodni_vyzkumy_FINAL.pdf.
18. Tracey, D. H. & Morrow, L. M.: *Lenses on Reading*, 2nd ed. New York: Guilford Press, 2012. ISBN 978-1-4625-0473-2.
19. Van Dijk, J. & Kintsch, W.: *Strategies of Discourse Comprehension*. New York: Academic Press, 1983. ISBN 0127120505.
20. Velčovská, V.: *Komunikativní didaktické hry k rozvoji čtenářských strategií ve výuce na 2. Stupni ZŠ* [Communicative Didactic Games for Reading Strategies Development on Lower Secondary School]. Final Thesis. Ostrava: University of, Pedagogical Faculty, 2019. Supervisor Vicherková, D.
21. Vicherková, D.: Factors influencing the level of reading strategies of fifteen-years-old pupils in the Moravian-Silesian Region. *The European Proceedings of Social & Behavioural Sciences*, 2018, 53(1), pp. 420-434. ISSN 2357-1330.
22. Vicherková, D.: *Úroveň čtenářských strategií žáků na konci základního vzdělávání* [Level of pupils' reading strategies at the end of elementary education]. Dissertation. Olomouc, Czech Republic: Palacký University in Olomouc, 2016. Supervisor Vlasta Řeřichová.
23. Zápotočná, O.: *Rozvoj počáteční literární gramotnosti* [Development of Initial Reading Literacy]. In Pupala B., Kolláriková, Z. (Eds.), *Předškolná a elementární pedagogika* [Preschool and Elementary Pedagogy]. Prague: Portál, 2001, pp. 271-306. ISBN 80-7178-585-7.
24. Zápotočná, O.: *Kulturní gramotnost v sociálněpsychologických súvislostiach* [Cultural Literacy in Socio-Psychological Context]. Bratislava: Album, 2004. ISBN 80-968667-3-7.
25. Zápotočná, O.: *Čitateľská gramotnosť a jej rozvoj v primárnom vzdelávaní. Teoretické východiska a didaktické realizácie* [Reading Literacy and Its Development in Primary Education. Theoretical Background and Didactic Implementation]. Bratislava: VEDA, 2012. ISBN 978-80-224-1281-0.
26. Zápotočná, O.: *Metakognitívne procesy v čítaní, učení a vzdelávaní* [Metacognitive Processes in Reading, Learning and Education]. Bratislava: TYPI Universitatis Tyrnaviensis – Veda, Ed. SAV, 2013. ISBN 978-80-8082-742-7.
27. Zápotočná, O.: Teoretické modely porozumenia textu a ich interpretácie v školskom vzdelávaní [Theoretical Models of Text Comprehension and Their Interpretations in School Education]. *Orbis scholae*, 2015, 9(3), pp. 13-26. ISSN 2336-3177 (Online).

Primary Paper Section: A**Secondary Paper Section: AM**

STUDY OF THE IMPACT OF THE PRINCIPLES FORMED IN INTERNATIONAL HUMAN RIGHTS STANDARDS ON THE DEVELOPMENT OF THE PENITENTIARY SYSTEM IN UKRAINE

^aMYKHAILO YATSYSHYN, ^bPETRO HLAMAZDA, ^cALLA HOROT, ^dSVITLANA BULAVINA, ^eZINAIDA SAMCHUK-KOLODIAZHNA, ^fOKSANA STARCHUK

^{a,b,d} *Department of theory and history of state and law, Lesya Ukrainka Volyn National University, 28 Vinnichenko str., Building 30, 43021, Lutsk, Volyn region, Ukraine*

^c *Department of constitutional, administrative and international law, Lesya Ukrainka Volyn National University, 28 Vinnichenko str., Building 30, 43021, Lutsk, Volyn region, Ukraine*

^{e,f} *Department of civil and juridical disciplines, Lesya Ukrainka Volyn National University, 28 Vinnichenko str., Building 30, 43021, Lutsk, Volyn region, Ukraine*

emails: ^aatsyshyn.mykhailo@eenu.edu.ua,

^bglamazda.lawyer@gmail.com, ^callagoroi78@ukr.net,

^dsbul16@ukr.net, ^esamchuk48@ukr.net, ^foksana-starchuk@ukr.net

Abstract: The article examines the process of the principles implementation from international human rights standards in the national penitentiary legislation and the practice of execution and serving of sentences in Ukraine and identifies the features of the criminal-executive system transformation into a penitentiary system. The influence of the implementation of the international standards of convicts' treatment on the development of criminal-executive legislation in the aspect of the integration of the current criminal-executive legislation of Ukraine into the standards of the European Union is investigated. The substantive essence of the criminal-executive legislation principles is determined and substantiated, based on the practice of their application and scientific analysis of the definitions used in the legislation.

Keywords: international standards, human rights, the penitentiary system, the rights of convicts

1 Introduction

Ukraine's foreign policy is aimed at integration into the European Union. This necessitates the implementation of the international treaties provisions, as well as compliance with international obligations to respect and protect universal human rights and freedoms, including those serving sentences. Since the principles of law, which are enshrined in criminal law, become the basis on which all activities for the execution of criminal penalties should be built, the essence of these principles is of scientific interest, remaining relevant in the modern doctrine of the criminal law of Ukraine. Among them the principle of the criminal-executive legislation, execution, and serving of punishments, fixed in Art. 5 of the Criminal-Executive Code of Ukraine (hereinafter – the CEC of Ukraine), as respect for human rights and freedoms. This principle is intended to ensure respect for the internationally recognized human rights and freedoms, humane treatment of convicts and to minimize the difference between living conditions in penitentiary institutions (hereinafter – PI) and at large.

The task of further reforming the criminal-executive system of Ukraine requires the introduction into national criminal-executive legislation and the practice of execution and serving of sentences due to the principles formed in international human rights standards.

This issue is now extremely relevant because in accordance with the requirements of the European Community in modern Ukraine is ongoing the process of criminal-executive system transformation into the penitentiary, taking into account the requirements of international human rights standards.

The principle of respect for human rights and freedoms, in addition to international documents in the field of human rights protection, is enshrined in international acts of a specialized nature. Among scholars of the criminal-executive law, they are called international standards of treatment of convicts (hereinafter – IST). Despite the enshrinement of the principle of respect for human rights and freedoms in criminal-executive legislation, there are a number of unresolved issues regarding it. In particular, the implementation of some provisions of

international standards of treatment of convicts in national law, because they are important not only for the science of criminal-executive law but also for the practice of execution of sentences.

2 Literature review

In the Ukrainian legal doctrine the issues of realization of the principles formed in the international standards on human rights and execution of punishments were investigated in the works of O. M. Dzhuzha (2001, 2002), V. A. Lyovochkin (2002), and others. In particular, theoretical and practical aspects, as well as problems of implementation of international standards of treatment of convicts and their impact on national legislation, theory, and practice of execution of sentences were studied by such scientists as M. I. Dziamulych (2020), A. P. Gel (2008), V. A. Lyovochkin (2002), T. V. Rudnyk (2010), O. B. Ptashynskyi (2002), A. H. Stepaniuk (2007), T. O. Shmatkovska (2020), I. S. Yakovets (2013) and others.

At the same time, a number of studies in this area were conducted before the adoption of the Criminal-Executive Code, and some studies were devoted exclusively to the implementation of the principles enshrined in modern national legislation without regard to international standards on these issues.

3 Material and methods

The purpose of the article is to study the impact of the principles formed in international standards on the development of criminal-executive legislation, in particular the study of international acts in the field of human rights and international standards of treatment of convicts to maximize their implementation and approximate current criminal-executive legislation of Ukraine. to the generally accepted standards of most European countries.

4 Result and discussion

International legal acts in the field of human rights protection play an important role in the legislation of Ukraine. In the future, this requires their implementation and a number of amendments to laws and regulations to ensure that national legislation (including criminal-executive as part of it) is in line with international obligations.

It should be noted that after the Second World War, the process of forming the priority of human rights and freedoms began. Since then, the concept of the need for international cooperation in the field of universal respect and observance of human rights and fundamental freedoms has become widespread in the world (and their consolidation in a number of international documents. For example, the Universal Declaration of Human Rights, the UN Declaration on the Elimination of all Forms of Racial Discrimination, the Convention for the Protection of Human Rights and Fundamental Freedoms, the International Covenant on Civil and Political Rights, the International Covenant on Economic, Social and Cultural Rights and others. (United Nations, 2006; United Nations, 1948; Council of Europe, 1950; Joseph and Castan, 2013; UNICEF, 1966). These international documents have been ratified by more than 100 countries, including Ukraine, which at that time was part of the Soviet Union.

The Universal Declaration of Human Rights is one of the first international human rights instruments adopted by the UN General Assembly. Its Preamble states that one of the tasks of the Universal Declaration is to respect and ensure human rights and freedoms. Therefore, it is reasonable to say that its norms have become universally recognized customary norms of international law, which determine international human rights standards that must be observed by all countries (Kupakin, 2010).

Universal (civilizational) principles of law are directly determined by the achieved level of human development and should act as a universal criterion for the formation of national legal systems. Legal principles are based on universal values. They are enshrined in international legal instruments and partly in the domestic legislation of individual states (Tsvik, 2009). International standards on the rights and freedoms of convicts contain both norms-principles and norms-recommendations. Norms-principles do not assume any deviations from them both in the legislation and in the activity of bodies and establishments of execution of punishments. This conclusion follows from Article 30 of the Universal Declaration of Human Rights and Article 5 of the International Covenant on Civil and Political Rights. Norms-principles are formulated in various international legal acts and cover all fundamental rights and freedoms of man and citizen. Norms-recommendations are not mandatory, although they are subject to maximum consideration during the development of new legislation (Shmarov, 1990).

In connection with the above, it is of both theoretical and practical interest to distinguish between norms-principles and norms-recommendations regarding the rights and freedoms of persons sentenced to imprisonment. Such a distinction, in our view, should be based on the fundamental human rights and freedoms proclaimed in the Universal Declaration of Human Rights United Nations, 1948, the Standard Minimum Rules for the Treatment of Prisoners (Clifford et al., 1972), and the International Covenant on Civil and Political Rights (Joseph, 2013), the International Covenant on Economic, Social and Cultural Rights (UNICEF, 1966), the European Convention for the Prevention of Torture and Inhuman or Degrading Treatment or Punishment (Burgers, 1988), European Penitentiary Rules (Council of Europe, 2006).

These and some other acts proclaim the basic provisions on human rights (including convicts) and identify the most priority of them. The norms and principles contained in them are binding on states that have ratified these international instruments.

On the basis of the mentioned above and some other international legal documents on the treatment of convicts in Art. 5 of the Criminal Procedure Code of Ukraine formulated the principles of criminal-executive legislation, execution, and serving of sentences.

The principles formulated in the above article of the CEC of Ukraine provide an opportunity to understand that the system in the activities of penitentiary bodies and institutions objectively provides for its reflection through legal means, which best corresponds to the essence of the ongoing processes of execution in the practice of penitentiary staff systems (Stepaniuk, 2002).

Given the importance of the principles set out in Art. 5 of the Criminal Procedure Code of Ukraine, we focus on the very concept of the category "principle".

Thus, the principles of criminal-executive legislation are the main provisions, guiding ideas that express the views of the state and society and reflect the general direction and the most significant features of the Ukrainian state policy in the field of execution have a doctrinal expression and normative form of consolidation (Dzhuzha, 2002).

The peculiarity of the principles of the criminal-executive law, as well as other branches of law, is that they do not involve any exceptions to them. If any fundamental provision provides for exceptions to it, it ceases to be a principle and is reduced to the role of a simple rule from which conclusions can and should be drawn.

Consolidation of principles in criminal-executive legislation is the result of the development of the criminal-executive policy of our state, which reflects the achievements of national penitentiary science and experience of legal regulation of execution and serving of criminal punishments in foreign countries (Dzhuzha, 2001).

Article 5 of the CEC of Ukraine lists the principles on which the criminal-executive legislation of Ukraine is based, but does not disclose the essence of each of them. Therefore, the substantive side of each of them is revealed, based on many years of practice of their application and scientific analysis of terms used in legislation.

Due to the principles of criminal-executive legislation, internal coherence, and interconnection of legal norms and legal institutions of this branch, the purposefulness of law-enforcement decisions and practice of execution and serving of punishment is provided. Finally, the system of principles of criminal-executive law reflects the basic provisions of the treatment of convicts, which are enshrined in the relevant international instruments (Shmarov, 1990).

The principle of respect for human rights and freedoms is enshrined, in particular, in Art. 1 of the Convention for the Protection of Human Rights and Fundamental Freedoms (obligation to respect human rights) (Council of Europe, 1950); Art. 2 of the International Covenant on Civil and Political Rights (each State party to this Covenant undertakes to respect and to ensure to all persons within its territory and jurisdiction the rights recognized in the present Covenant) (Joseph and Castan, 2013); The final act of the meeting on security and cooperation in Europe of August 1, 1975 (in Chapter VII «Respect for human rights and fundamental freedoms, including freedom of speech, conscience, religion, and belief») (OSCE, 1975) and others.

It should be noted that these international instruments also specify the general rights and freedoms of convicted persons that must be respected and ensured in the execution of criminal sentences and in the treatment of such persons: everyone has the right to life, liberty, and security of person; no one shall be subjected to torture or to cruel, inhuman or degrading treatment or punishment; all persons deprived of their liberty have the right to humane treatment and respect for the inherent dignity of the human person. In the future, the principle of respect for human rights and freedoms, as noted earlier, was enshrined in IST, which means standards adopted at the international level as norms, principles, and recommendations in the field of execution of sentences and activities of penitentiary bodies and institutions (Golin and Stepaniuk, 2011). It should be emphasized that, despite the existence of standards for the treatment of convicts, the current criminal-executive legislation has not yet enshrined the term «treatment of convicts». This has been repeatedly pointed out by scholars of the criminal-executive law, in particular T. V. Rudnyk, who proposed to understand this term as a way or nature of applying to convicts various measures of influence, treatment in accordance with generally accepted rules (Rudnyk, 2010).

Without going into discussions, let's just say that this problem needs to be addressed. In addition, the content of the concept of "treatment of convicts" in national law should be defined. In our opinion, the enshrinement in law of this concept will contribute, in particular, to the indisputable respect for human rights and freedoms during the execution of sentences, as it will determine the limits of permissible behavior on the part of the penitentiary administration.

The IST developed and approved by the international community include Minimum standard rules for the treatment of prisoners (Clifford et al., 1972); Declaration on the Protection of All Persons from Torture and Other Cruel, Inhuman or Degrading Treatment or Punishment (United Nations, 1975); Principles of medical ethics concerning the role of health workers, especially doctors, in protecting prisoners or detainees from torture and other cruel, inhuman or degrading treatment or punishment (United Nations, 1982); Basic principles of treatment of prisoners (United Nations, 1990a); Convention against Torture and Other Cruel, Inhuman or Degrading Treatment or Punishment (Burgers, 1988); Code of Principles for the Protection of All Persons under Any Form of Detention or Imprisonment (United Nations, 1988); European penitentiary (prison) rules (Council of Europe, 2006); Tokyo rules (United

Nations, 1990b), etc. In these documents, the defining idea is respect for human rights and freedoms in the execution of criminal sentences. For example, the Code of Principles for the Protection of All Persons Subject to Detention or Imprisonment in any way states that all persons who are subject to detention or imprisonment in any way have the right to humane treatment and respect for human dignity (Principle 1); in the interests of persons who are subject to detention or imprisonment in any way, any human rights recognized by the State in accordance with the law, conventions, rules, and customs shall not be restricted or diminished on the ground that those rights are not recognized or are recognized in a reduced amount in the specified Code of Principles (Principle 3); no person subjected to detention or imprisonment shall be subjected to torture or other inhuman or degrading treatment or punishment (Principle 6).

The Standard Minimum Rules for the Treatment of Prisoners in the General Rules section state that the minimum conditions considered by the United Nations are designed to protect prisoners from ill-treatment (Clifford et al., 1972). The Basic Principles for the Treatment of Prisoners state: All prisoners are respected because they have dignity and significance as human beings (Principle 1); with the exception of those restrictions which necessitate excessive imprisonment, all prisoners enjoy the human rights and fundamental freedoms set forth in the Universal Declaration of Human Rights, the International Covenant on Economic, Social and Cultural Rights, and the International Covenant on Civil and Political Rights, rights and the Optional Protocol thereto, as well as other rights, set out in other United Nations Covenants (Principle 5) (United Nations, 1990b).

The Declaration on the Protection of All Persons from Torture and Other Cruel, Inhuman or Degrading Treatment or Punishment states: any act that constitutes torture or other cruel, inhuman or degrading treatment or punishment, is an insult to human dignity and should be recognized as a violation of human rights and fundamental freedoms proclaimed by the Universal Declaration of Human Rights (Article 2); the training of law enforcement personnel and the training of other officials who may be responsible for persons deprived of their liberty should ensure that the situation is fully respected and that the prohibition of torture and other cruel, inhuman or degrading treatment is fully respected, treatment and punishment (Article 5) (United Nations, 1975).

The Convention against Torture and Other Cruel, Inhuman or Degrading Treatment or Punishment prohibits torture, according to which there are no exceptional circumstances, state of war or threat of war, internal political instability or any another state of emergency, an order from a superior or state authority cannot be an excuse for torture (Article 2) (Burgers, 1988). The Code of Conduct for Law Enforcement Officials contains the following provision: in the performance of their duties, the relevant officials respect and protect human dignity and protect the human rights of all persons (Article 2) (Mueller, 1978). The European Penitentiary Rules state that the treatment of all persons deprived of their liberty must respect their human rights (Part I, Principle 1) (Council of Europe, 2006).

The main international regulations governing the activities of the penitentiary system and the treatment of convicts are the European Penitentiary Rules and the Minimum Standard Rules for the Treatment of Prisoners. They are recognized as a source document for the formation of policy in the field of execution of punishments by the legislature, courts, and prison administrations and have acquired a special status among international criminal procedure instruments (Yakovets, 2013). Domestic scholars in the field of criminal-executive law A. H. Stepaniuk (2007) and I. S. Yakovets (2013) emphasize that the consolidation of these provisions in SMEs has a significant impact on national law, as well as the theory and practice of execution of sentences, and point out that the Universal Declaration human rights, IST and national legislation are correlated as general, special and separate (individual) (Stepaniuk, 2007).

V. A. Lyovochkin (2002) rightly emphasized that international legal documents on the rights and freedoms of convicts affect the formation of criminal-executive legislation of Ukraine. O. B. Ptashynskiy (2002) also supports this point of view and other scholars who believe that standards of treatment of convicts developed by the international community are the result of their cooperation; in the future, they will best ensure human rights and freedoms in the field of execution and serving of criminal sentences (Ptashynskiy, 2002). According to A. H. Stepaniuk and I. S. Yakovets, the consolidation of these provisions on respect for human rights and freedoms is important for law enforcement activities, as they become binding and such objective and subjective characteristics as normative, stability, indisputability, and inadmissibility of deviation from them, even as an exception (Stepaniuk, 2007). The authors rightly believe that in the activities of penitentiary bodies and institutions it is necessary to create such conditions under which the principles of criminal-executive legislation should not be just a declaration, a formal opportunity.

5 Conclusion

International standards on human rights and treatment of convicts indicate the universal human rights and freedoms of convicts, which should be respected by the penitentiary administration during the execution of sentences, namely: the right to life and health; freedom and personal integrity; no one shall be subjected to torture or to cruel, inhuman or degrading treatment or punishment; all persons deprived of their liberty have the right to humane treatment and respect for the inherent dignity of the human person, as well as to appropriate conditions of detention. This means that while serving a sentence, the state must create such conditions of detention for convicts that would ensure humanity, human dignity, and honor, respect for rights and freedoms, which will bring the criminal law of Ukraine closer to the generally accepted standards of most European countries.

The analyzed international acts indicate that not all provisions regarding respect for human rights and freedoms during the execution of sentences, enshrined in the current legislation of Ukraine, comply with IST. Some of them, although formally meeting such standards, in the practice of national institutions in the field of execution of sentences is only declarative, as not all of them can be implemented and implemented due to the existence of legal, economic, social factors, as well as prejudice against convicts by the administration of the penitentiary.

Creating appropriate conditions in the penitentiary, quality, and adequate nutrition, the provision of qualified and timely medical care and treatment is very important during the serving of sentences and requires adequate funding from the state, which, unfortunately, is insufficient. But no less important is the polite attitude of the penitentiary administration towards the convicts. In this case, the humane treatment of convicts does not require financial investment from the state but depends solely on the administration of the penitentiary. Therefore, in carrying out its activities, it must be aware that the convicted person is a person, and treat him as a person. This is the manifestation of humanism because although such a person made a mistake, not only the family but also society and the state are waiting for his return as a law-abiding citizen.

The full implementation of the principles makes the process of execution and serving a sentence fair, consistent with the legal awareness and morals of the citizens of our society. This is a very important provision, because excessive cruelty, as well as excessive leniency in the execution of a criminal sentence, is an injustice in the presence of which the achievement of the goals of the execution of the sentence becomes problematic.

We believe that adherence to the principles of criminal enforcement legislation, formed in international human rights standards, contributes to the success of all work on the correction of convicts and the functioning of the penitentiary system in Ukraine as an important component of civil society.

Literature:

1. Assembly, UN General. Universal declaration of human rights. *UN General Assembly*, 1948, 302.2.
2. Burgers, J. H. *The United Nations Convention against Torture: A handbook on the Convention against Torture and other cruel, inhuman, or degrading treatment or punishment*. London: Martinus Nijhoff Publishers, 1988. 231 p. ISBN 90-247-3609-9.
3. Clifford, W., Van der Vaart, J., Boyd, S. M., Hollander, R., Fried, J. H., & Freeman, A. V. The standard minimum rules for the treatment of prisoners. *The American Journal of International Law*, 1972, 66(4), 232-244. ISSN: 0002-9300.
4. Council of Europe. Committee of Ministers, et al. *European prison rules*. Council of Europe, 2006. ISBN: 978-92-871-5981-6.
5. Council of Europe. Convention for the Protection of Human Rights and Fundamental Freedoms. 1950. ETS No.005. Retrieved from: <https://www.coe.int/en/web/conventions/full-list/-/conventions/treaty/005>.
6. Dziamulych, M., Sadvoska, I., Shmatkovska, T., Nahirska, K., Nuzhna, O., & Gavryliuk, O. The study of the relationship between rural population spending on peasant households with the main socioeconomic indicators: a case study of Volyn region, Ukraine. *Scientific Papers: Management, Economic Engineering in Agriculture & Rural Development*. 2020. 20(2), 217-222. ISSN 2284-7995.
7. Dzuzhza, O. M. *Course of criminal executive law of Ukraine. General and Special parts*. Kyiv: Jurinkom Inter, 2001. 304 p. ISBN 966-7784-54-1.
8. Dzuzhza, O. M. *Criminal executive law of Ukraine*. Kyiv: Jurinkom Inter, 2002. 466 p. ISBN 966-667-025-9
9. Gel, A. P. *Criminal and executive law of Ukraine*. Kyiv: Yurinkom Inter, 2008. 624 p. ISBN 978-966-667-289-9.
10. Golin, V. V., Stepaniuk, A. H. *Criminal executive law*. Kharkiv: Pravo, 2011. 328 p. ISBN 978-966-458-204-6.
11. Joseph, S., Castan, M. *The international covenant on civil and political rights: cases, materials, and commentary*. Oxford University Press, 2013. 1042 p. ISBN: 978-019-964-194-9.
12. Kupakin, O. M. The mechanism of implementation of the latest international human rights standards in Ukraine. *Actual problems of protection of public order and pre-trial proceedings: materials of scientific-practical. conf. and round tables*. Dnipropetrovsk, 2010, 272-273.
13. Lyovochkin, V. A. *Regulatory and organizational principles of implementation in Ukraine international standards on the rights and freedoms of persons sentenced to imprisonment*. Author's ref. dis.... Ph. D. just. science. Kyiv, 2002. 18 p.
14. Mueller, G. O. The United Nations draft code of conduct for law enforcement officials. *Police Studies Intl Review of Police Development*, 1978. 1, 17. ISSN 0141-29-49.
15. Nimchenko, V. I. Legislative definition and implementation of international standards of human and civil rights and freedoms in Ukraine. *Human rights and the rule of law (to the 50th anniversary of the Universal Declaration of Human Rights): thesis add. and messages. Science. conf. prof-off composition*. Kharkiv, 1998, 8-11.
16. OSCE. *Conference on Security and Co-operation in Europe Final Act*. Helsinki, 1 August 1975. Retrieved from: <https://www.osce.org/files/f/documents/5/c/39501.pdf>
17. Ptashynsky, O. B. *Legal problems of reforming the penitentiary system in Ukraine: author's ref. dis. ... Ph. D. just. science*. Kyiv, 2002. 18 p.
18. Rudnyk, T. V. *Realization of the principle of humanism in the execution and serving of punishment in the form of imprisonment: author's ref. dis. ... Ph. D. just. science*. Kyiv, 2010. 21 p.
19. Shmatkovska, T., Dziamulych, M., Yakubiv, V., Myshko, O., Stryzheus, L., Yakubiv, R. Economic efficiency of land use by agricultural producers in the system of their non-current assets analysis: a case study of the agricultural sector of Ukraine. *Scientific Papers: Management, Economic Engineering in Agriculture & Rural Development*. 2020. 20(3). ISSN 2284-7995.
20. Shmarov, I. S. From the standpoint of international acts. *Education and law and order*. 1990. 8, 37.
21. Stepaniuk, A. H. *Implementation of international standards in the practice of criminal-executive system of Ukraine*. Kharkiv: Crossroad, 2007. 184 p. ISBN 966-8759-26-5.
22. Tsvik, M. V., Petryshyn, O. V., Avramenko, L. V. *General theory of state and law*. Kharkiv: Pravo, 2009. 584 p. ISBN 978-966-458-095-0.
23. UNICEF. International Covenant on Economic, Social and Cultural Rights. Adopted and opened for signature, ratification and accession by General Assembly resolution 2200A (XXI) of 16 December 1966. Entry into force 3 January 1976, in accordance with article 27. *UN General Assembly, Treaty Series*, 1966, 993.3.
24. United Nations. Basic principles for the treatment of prisoners. *Adopted and proclaimed by General Assembly resolution 45/111 of*, 1990a.
25. United Nations. Code of Principles for the Protection of All Persons Under Any Form of Detention or Imprisonment: *Adopted by resolution 43/173 Gen. UN Assembly of 9 December 1988*.
26. United Nations. Declaration on the Protection of All Persons from Torture and Other Cruel, Inhuman or Degrading Treatment or Punishment: *Adopted by UN General Assembly resolution 3452 (XXX) of 9 December 1975*.
27. United Nations. *International convention on the elimination of all forms of racial discrimination*. 2006. Retrieved from: <https://media.business-humanrights.org/media/documents/files/media/bhr/files/State-Obligations-Corporate-Acts-CERD-18-Dec-2006.pdf>.
28. United Nations. Minimum Standard Rules on Non-Imprisonment Measures (The Tokyo Rules): *Adopted by General Assembly resolution resolution 45/110 of 14 December 1990b*.
29. United Nations. Principles of medical ethics. *Adopted by General Assembly resolution 37/194 Gen. UN Assembly of Dec. 18 1982*.
30. Yakovets, I. S. *Theoretical and applied principles of optimization of the process of criminal punishment*. Kharkiv: Pravo, 2013. 392 p. ISBN 978-966-458-565-8.

Primary Paper Section: A**Secondary Paper Section: AE, AG**

MASSIVE OPEN ONLINE COURSES (MOOCs): THE PROMISE OF NON-FORMAL EDUCATION IN ENGLISH LANGUAGE LEARNING

DIANA ŽIDOVÁ

Faculty of Pedagogy, Constantine the Philosopher University in Nitra, Slovakia, Dražovská cesta 4, 949 74 Nitra, Slovakia
email: dzidova@ukf.sk

Acknowledgement: The research for this paper was financially supported by Constantine the Philosopher University in Nitra, Slovakia, The University Grant Agency, grant no. V/18/2020.

Abstract: Massive Open Online Courses (MOOCs) have a great potential for contemporary higher education in the era of distance teaching and learning. Learners all around the world enrol on MOOCs to participate in courses which meet their age, skills, interests and study programs. There is a great variability in participants' motivation when focusing on their second language learning skills and knowledge. This paper examines the preference of English language participants for MOOCs and also proposes the courses in English language by the most relevant institutions building on participants' needs. Engagement in MOOCs is one of the strongest predictive features for the course completion, while learners' motivation to be involved in a non-formal education affirms their ability to focus on the lifelong language learning.

Keywords: Foreign language learning, higher education, MOOCs, non-formal education, online courses, self-directed learning

1 Introduction

Massive Open Online Courses (MOOCs) are online courses developed in a virtual environment for students and professionals playing the role of an additional platform towards face to face learning. MOOCs offer courses in all possible fields focusing on expanding knowledge, skills and attitudes. Nowadays they function as a part of non-formal learning, but there is a high demand on transformation of this type of learning into a fully accepted and acknowledged element in formal education.

MOOCs may become an inspirational source for students of English language and literature in teaching study programme. Especially in the era of corona virus pandemics, non-formal learning functions as an important platform for graduate students who are looking for their future carrier advancements as a part of lifelong learning. The paper presents a research on MOOCs interest among English language and literature students and offers new insights into its implementation into the higher education environment.

1.1 Formal, Informal and Non-formal Learning

Formal learning takes place in a traditional setting, namely an educational institution. The learning is a focus of "the acquisition of knowledge, skills and competences." It is validated, certificated and intentional (Cedefop, 2008, as cited in Werquin, 2010, p. 21). Nowadays we designate it as formal education and it is generally accepted that it is compulsory for children and regulated according to the laws of the state. Universities also offer formal learning, but it is up to the students whether they enrol in the study programme offered to the public. Formal education is the attention of the Ministry of Education, which is responsible for preparation of tests for national testing in primary and secondary education - Monitor and Maturita exams in Slovakia.

Informal learning "results from daily activities related to work, family or leisure. It is not organised or structured in terms of objectives, time or learning support. It is in most cases unintentional from the learner's perspective" (Cedefop, 2008, as cited in Werquin, 2010, p. 22). It is an experience we obtain by doing something new or by doing it repeatedly. Because the learning process is unintentional, the learner is not aware of it. This type of learning is a part of our life so we cannot set any goals to achieve it or assess it. Nevertheless, informal learning is very important in acquiring new skills and definitely can be considered as the forefather of formal learning.

Non-formal learning is much harder to classify, but it is commonly acknowledged that it is a learning process which is organized and planned by a learner, on the other hand, other activities may not be considered having learning objectives. In fact, a learner always learns more than he or she intends and this extra knowledge or skill makes this process exciting and stimulating (Werquin, 2010, p. 23). This might be the reason why non-formal learning is nowadays so popular among adult learners who would like to learn something new but do not want to go back to school they already finished years ago because of time and money issues. Nevertheless, the need to assimilate to the ever-changing realities of the contemporary globalised world with new social, economic, digital and other competences makes learning a number one necessity.

Therefore, lifelong learning currently becomes an important part of our professional and personal lives. Lifelong learning is defined as "development after formal education: the continuing development of knowledge and skills that people experience after formal education and throughout their lives" (Encarta, 2008, as cited in London, 2021, online). The Council of the European Union adopted a Recommendation on key competences for lifelong learning in 2018. In the publication entitled *Key competences for lifelong learning* (European Commission, 2019), eight competences are presented:

- Literacy competence
- Multilingual competence
- Mathematical competence and competence in science, technology and engineering
- Digital competence
- Personal, social and learning to learn competence
- Citizenship competence
- Entrepreneurship competence
- Cultural awareness and expression competence

Each competence combines knowledge, skills and attitudes. It is quite essential to be able to identify what to know and what to do in each competence. However, direction towards creating positive attitudes has become equally vital, if not the most vital. It shows how psychology influences our lives through our belief in success.

The aforementioned competences are to be obtained throughout attending formal and non-formal education and via experience and practice. They all are equally significant and complex in their nature; moreover they reflect our adaptability and creativity in problem-solving situations. Only high quality education and training can provide opportunities for all people, including refugees, migrants, socially excluded persons and minorities. Unfortunately, even though states in the European Union are obliged to serve such education to all people, access to equal education is often limited by age, social class, income, religion or time. In that case, digital competence seems to be crucial in assisting to get the most out of educational process and especially online learning which makes a wider impact on acquiring knowledge, skills and attitudes among learners.

1.2 MOOCs - Online Learning for Everyone

MOOCs - massive open online courses - are online courses offered by educational institutions to anyone interested to learn something new. The courses are free of charge, open to the public, available to any person after registering to the website or platform, finally, all courses are provided fully online. Various types of MOOCs learners can be found amid the platforms. Most of them are learners who study for professional development and continuing education. Then there are university students who are looking for a hobby or try to widen their interests (<https://www.openuped.eu/93-about-moocs>).

In the context of the European Union, MOOCs are organized under EADTU – European Association of Distance Teaching Universities. EADTU is co-funded by the European Commission and its Erasmus+ Programme. The organization has a membership of 25 European countries, covering 200 non-profit open and distance teaching universities. It coordinates the European MOOC Consortium (EMC) representing 400 higher education institutions and over 3000 MOOCs. EADTU aims to organize events in various projects which promote online, digital and virtual learning, interaction and intercultural communication among nations and cultures in the European and non-European geographical context (<https://eadtu.eu>).

Virtual mobility is an academic mobility in which students and teachers at universities study or teach by enhancing digital tools and platforms. It complements physical mobility in the form of face to face, blended or virtual forms of learning. For instance, the Moonlite project - MOOCs for Social Inclusion & Employability, supports refugees, migrants and students in their access to higher education and employability.

There are two major virtual mobility projects running nowadays for university students: Virtual Mobility (VM) and Open Education (OE) which emerged into Open Virtual Mobility (2017-2020). They cover virtual mobility and open education in contemporary high education perspective. The aim of the projects is to find out the good practices of using virtual reality in educational environment, especially in Erasmus+ exchange programme. Upon the decision of the European Commission, the learners should be able to transfer credits obtained in the course within the European Credit Transfer System (ECTS) (<https://eadtu.eu>).

Opening up of universities towards virtual learning is still slow and financially demanding. A group of scientists and educators conducted a pilot research financed by the EU based on content mapping study and found out the following open virtual mobility competences:

- Intercultural skills and attitudes - intercultural awareness of own culture and identity as well as awareness about other cultures;
- Networked learning – ability to learn and communicate in a digital social network;
- Active self-regulated learner skills – ability to learn at own pace successfully;
- Media and digital literacy – ability to search and use the quality resources;
- Autonomy-driven learning – independent learning mode, self-directive attitude of a student;
- Interactive and collaborative learning in an authentic international environment – developing teamwork skills;
- Open-mindedness – open and accepting attitude towards peers and teachers (Rajagopal et al., 2020).

Based on the competences, learners can develop knowledge, skills and attitudes necessary for the contemporary professional needs in the European Union states. The Open VM Learning Hub hosts a set of eight mini-MOOCs, in each of the eight competency areas. The courses usually start in March, April and May and are accessible for registered students and teachers: <https://hub.openvirtualmobility.eu>

The enrolment process is defined accordingly: before starting the MOOC, each student is asked to take a quiz that pre-assesses his/her skills. According to the score obtained, he/she will be suggested to start from one of the three levels: the foundation level, intermediate level or advanced level. In each level, he/she will read texts, e-books or PDFs, watch videos and forums. Once all the tasks are completed, he/she will complete an e-assessment in order to obtain a badge that certifies his/her skills.

MOOCs have not yet become a standard at many universities. Online teaching is often provided by Moodle platform, Microsoft Teams or by online video conferencing systems such as Jitsi Meet, Google Meet or Zoom. However, being affected by

the corona virus pandemics, global trend of MOOCs might develop into a new inspiration not only for many institutions providing mostly face to face education, but also for students, who have also realized that learning is a way of thinking and is not set in a physical environment only. Overall, if there is someone eager to teach and someone eager to learn, any learning can become a success.

1.3 Global MOOCs

Although there is an ongoing effort of the EU to expand virtual education at universities and bring self-regulated learning into a limelight from 2012, there are global MOOCs which set up the new trends of online learning in the world nowadays. Selected platforms best for English language and literature learning are listed here:

- Coursera (USA) - <https://www.coursera.org>
- EdX (USA) - <https://www.edx.org>
- Udemy (USA) - <https://www.udemy.com>
- FutureLearn (UK) - <https://www.futurelearn.com>
- Alison (Ireland) - <https://alison.com>

What makes some of these providers of virtual education successful is the cooperation with top universities and cultural institutions which attract new learners. For example, edX has more than 160 member universities and institutions and Coursera has more than 200 cooperating universities and companies. To mention just few of them, the following universities provide courses in English language and literature:

- Berkeley University of California
- Harvard University
- Stanford University
- University of Michigan
- Boston University

Two types of MOOCs have been established during the evolution of online learning. cMOOCs are courses with no set curriculum, process, or particular method. The focus is on community and connections; connectivist learning theory forms the background of learning, which is based on Siemens' research (*Connectivism: A learning theory for the digital age, 2005*; as cited in Nethi, Murray, 2014, p. 660). In xMOOCs, the focus is on mastering the content of the course. Assessment of the course is done by automated quizzes and tests because there are thousands of learners enrolled. Teachers are trying to prepare materials which cover as much information as possible in an interesting way. High number of enrolled students on the other hand leads to high drop-out rates, especially in courses with free access.

Typically, there are four main learning activities designed for MOOCs (Bang et al. 2016, p. 124):

- Assignments from teachers
- Teacher video lectures
- Student assignments and productions
- Communication and discussion

Even though the learning environment is digital and students mostly view presentations and videos, the role of the teacher is still crucial – his/her voice, accent and positive attitude while presenting the topic affect the overall likeability of the course more than it might be expected.

In language and literature oriented courses, academic degrees are not usually offered, but some institutions offer TESOL certificates after successful completion of the course. There are also courses offering study skills at the university level – academic writing, academic research, learning online, etc.

1.4 MOOCs in English Language and Literature

Materials and Methods

The research was conducted among the students of English Language and Literature teaching study programme. There were 36 undergraduate students and 23 graduate students who filled in the questionnaire based on their interest in taking a MOOC course during the corona virus pandemics: March-September 2020. The questionnaire was also focused on individual preferences of students based on their teaching study programme – courses covering English language and literature.

Results

The following tables – Table 1 and Table 2 show interest of students in MOOCs enrolment. When comparing the interest of undergraduate and graduate students, the results show that graduate students are more interested in online learning than undergraduate students.

Table 1: Interest in MOOCs – undergraduate students

INTERESTED IN MOOCs	YES	NO
UNDERGRADUATE FEMALES	13	13
UNDERGRADUATE MALES	4	6
TOTAL	17	19

Source: own elaboration

Table 2: Interest in MOOCs – graduate students

INTERESTED IN MOOCs	YES	NO
GRADUATE FEMALES	10	2
GRADUATE MALES	9	2
TOTAL	19	4

Source: own elaboration

Table 3 and Table 4 show interest of undergraduate and graduate students in specific courses related to their study programme. The selection of courses was based on the modules taught in the programme. The modules in the tables are listed in accordance with the results of their interest. While for undergraduate students courses on “Skills” are the most important ones, for graduate students “Translation and interpreting” seems to be the most essential one.

Table 3: Interest in courses – undergraduate students

INTERESTED IN COURSES	UNDER GRADUATE FEMALES	UNDER GRADUATE MALES	TOTAL
Skills (reading, writing, listening, speaking)	15	4	19
Translation and interpreting	9	6	15
Literature	12	1	13
History, life and institutions of Anglophone countries	9	3	12
Intercultural communication	9	2	11
Grammar	5	5	10
Phonetics and phonology	3	4	7
English for specific purposes	5	1	6
Stylistics	5	0	5
Other	2	1	3

Source: own elaboration

Table 4: Interest in courses – graduate students

INTERESTED IN COURSES	GRADUATE FEMALES	GRADUATE MALES	TOTAL
Translation and interpreting	7	8	15
Skills (reading, writing, listening, speaking)	6	5	11
Grammar	4	3	7
Intercultural communication	5	2	7
English for specific purposes	3	3	6
Phonetics and phonology	2	3	5
Literature	3	1	4
Other	1	2	3
History, life and	0	2	2

institutions of Anglophone countries			
Stylistics	2	0	2

Source: own elaboration

2 Discussion

Online learning via MOOCs is a unique phenomenon which gains its proponents in a digital environment very fast. At the beginning of the 21st century, multimedia and CALL were leading mediums for computer based instructions in foreign language teaching (Badinská, 2009, p. 277). With the rise of internet connection accessibility among the general public, universities and companies started to offer online learning on a global scale.

The aim of the research was to gather information about interest of students of English language and literature teaching programme on online learning as well as to find out what courses do students find important for their future carrier and would like to enrol in. The results showed that graduate students are more interested in MOOCs as an additional source of learning. It seems that they are more motivated to take the courses in order to obtain certificates which they would benefit from in the future. On the other hand, the results from interest of undergraduate students show that they are less interested in MOOCs.

“Skills in English language” and “Translation and interpreting” are perceived as the courses with the top importance by both groups. However, there is a difference when it comes to the third place; for undergraduate students a course on “Literature” and for graduate students a course on “Grammar” dominates. Taking into account the aforementioned results with what online platforms offer to our students, we come into conclusion that there are many courses on learning skills in English language but none in practising translation and interpreting. Also, there are many courses on literature but a few on grammar practice.

The following list shows courses offered by edX to illustrate the variability of subjects for students of English language and literature:

Education and Teacher Training Courses

Understanding Classroom Interaction
Blended Learning with edX
Intercultural Competency in Education
Academic Writing for Clarity and Meaning
Developing Course Content and Teaching Materials

English as a Second Language (ESL) Courses

General Academic English
Upper-intermediate English
English for Journalists

Writing

AP® English Literature & Composition – Part 1: Stories
AP® English Literature & Composition – Part 2: Poems
Creative Writing

In the following tables – Table 5, Table 6 and Table 7 – three courses on introduction to poetry are briefly presented. The aim of this presentation is to show the difference between three platforms for students and also variability students have when deciding on enrolling on the MOOC.

Table 5: FutureLearn - Poetry: How to Read a Poem

FutureLearn	
Name of the institution	University of York, United Kingdom
Name of the course	Poetry: How to Read a Poem
Length of the course	4 weeks
Effort	4 hours per week
Access to the course	Free access to this course for 6 weeks
Price	49 € with access to this course for as long as it's on FutureLearn; Access to this course's tests as well as a print and digital Certificate of Achievement once you're eligible

Website	https://www.futurelearn.com/courses/how-to-read-a-poem-york
---------	---

Source: own elaboration

Table 6: edX - What is Poetry? An Introduction to Literary Analysis

edX	
Name of the institution	The University of Newcastle, Australia
Name of the course	What is Poetry? An Introduction to Literary Analysis
Length of the course	3 weeks
Effort	2-3 hours per week
Access to the course	Free access to the course
Price	40 €with a verified certificate
Website	https://www.edx.org/course/what-is-poetry

Source: own elaboration

Table 7: UdeMy - How To Analyse Poetry - English Literature Short Course

UdeMy	
Name of the institution	Independent Education Consultant
Name of the course	How To Analyse Poetry - English Literature Short Course
Length of the course	5 weeks
Effort	13 lectures – more than 1 hour overall
Access to the course	No free access
Price	9,99 €with Certificate of completion
Website	https://www.udemy.com/course/how-to-analyse-poetry-short-course/

Source: own elaboration

Two courses are offered by universities and one course is offered by an independent education consultant. All three courses are short – 3-5 weeks and it takes only a few hours to study the materials. Access to two courses is free and one is a paid course, which does not correspond with the idea of MOOCs to represent free courses available to everyone. Availability of courses is questionable, because some of them can only be found in archives and some of them are currently closed and will be open only in a couple of months from now.

3 Conclusion

Massive Open Online Courses (MOOCs) as a platform for non-formal learning is nowadays a highly expanding field in global educational environment. Students have many possibilities to choose and study for free, in their own free time and also the amount of courses offered to them is extremely wide. It is the role of the educators, teachers and education consultants to make them aware of all the possibilities for their future carrier. The research conducted on undergraduate and graduate students of English language and literature in teaching programme showed that graduate students are eager to enrol in MOOCs and use the possibilities they offer. They would like to expand their knowledge in English language skills and Translation and interpreting, but also in Grammar and Literature. Virtual teaching and learning might become common in the future, but in the optics of contemporary corona virus pandemics we should be aware of the fact that the crucial role in educational process still bears the teacher who is the best motivator and facilitator on the path to knowledge, skills and attitudes.

Literature:

1. Werquin, P.: *Recognising Non-Formal and Informal Learning: OUTCOMES, POLICIES AND PRACTICES*. Paris: OECD Publishing, 2010. 92 p. ISBN 978-92-64-06384-6.
2. London, M.: Lifelong Learning: Introduction . In *The Oxford Handbook of Lifelong Learning* (1st ed.), 2012. Online Publication Date: Nov 2012 DOI: 10.1093/oxfordhb/9780195390483.013.0013
3. European Union: *Key Competences for Lifelong Learning*. Luxembourg: Publications Office of the European Union, 2019. 20 p. ISBN 978-92-76-00476-9. [cited 2020 Sept. 29] Available from: <https://op.europa.eu/en/publication-detail/-/publication/297a33c8-a1f3-11e9-9d01-01aa75ed71a1/language-en/format-PDF/source-search>

4. Rajagopal, K., Firssova, O., de Beek, I. O., Van der Stappen, E., Stoyanov, S., Henderikx, P., Buchem, I.: Learner skills in open virtual mobility. *Research in Learning Technology* 2020, 28: 2254. <http://dx.doi.org/10.25304/rlt.v28.2254>. [Internet]. 2020 Mar. 19 [cited 2020 Sept. 29]; Available from: <https://journal.alt.ac.uk/index.php/rlt/article/view/2254>
5. EADTU – European Association of Distance Teaching Universities; Available from: <https://eadtu.eu>
6. Definition Massive Open Online Courses (MOOCs). Version 1.1 dated 12 March 2015. [cited 2020 Sept. 29] http://www.openuped.eu/images/docs/Definition_Massive_Open_Online_Course_s.pdf
7. OpenupEd <https://www.openuped.eu/93-about-moocs>
8. Open Virtual Mobility Learning Hub <https://hub.openvirtualmobility.eu>
9. Nethi, V. & Murray, A.: Potential for MOOCs in foreign language teaching, 2014, p. 659-667. In N. Sonda & A. Krause (eds.), *JALT 2013 Conference Proceedings*. Tokyo: JALT.
10. Bang, J., Dalsgaard, Ch., Kjaer, A., O'Donovan, M.: Opening up education - some pedagogical considerations, p. 122-127. In *MOOCs in Europe. Overview of papers representing a collective European response on MOOCs as presented during the HOME conference in Rome, November 2015*. Jansen, D., 11. Konings, L. (eds.). Maastricht: EADTU, 2016, 220. ISBN 978-90-79730-19-3.
12. Badinská, M.: Getting started with CLIL - making it happen. In *Applied Natural Sciences 2009: proceedings: 7 - 9 October 2009*, Trnava. Pipiška, M., Horník, M., Gajdošová, J. (eds.). Trnava: Univerzita sv. Cyrila a Metoda v Trnave, Fakulta prírodných vied, 2009, pp. 275-279. ISBN 978-80-8105-129-6.

Primary Paper Section: A

Secondary Paper Section: AM, AI, AJ

I INFORMATICS

IN INFORMATICS

A BUSINESS INTELLIGENCE SOLUTION FOR BUSINESS CONTINUITY AND SAFETY MANAGEMENT IN PUBLIC UNIVERSITIES

^aATHANASIOS PODARAS, ^bTOMÁŠ ŽIŽKA, ^cDANA NEJEDLOVÁ, ^dDAVID KUBÁT

*Technical University of Liberec, Faculty of Economics,
Department of Informatics, Studentská 1402/2, 461 17, Liberec
1, Czech Republic*

*email: ^aathanasios.podaras@tul.cz, ^btomas.zizka@tul.cz,
^cdana.nejedlova@tul.cz, ^ddavid.kubat@tul.cz*

Abstract: The article introduces a modern business intelligence solution for facilitating business continuity and safety management proactive decisions in public organizations and units, which is currently tested in a public university for its effectiveness. The tool's data dimensions, hierarchies and facts are based on the business continuity points method which is a modern approach for estimating proactively the recovery time and predicting the criticality level for individual business functions. From the constructed dataset, selected safety – related and highly critical business functions are used to validate the proposed contribution. The same functions are further used for estimating their availability rates and compare the results with the rates proposed by the university business continuity experts. The conducted research results indicated high accuracy when predicting criticality levels as well as computing availability rates for safety critical functions in the public university. The proposed BI tool facilitates both online analytical processing operations as well as machine learning activities.

Keywords: availability, business continuity, business continuity points, business intelligence, machine learning, public university, safety critical business functions, safety management

1 Introduction

The interruption of modern business operations and especially those related to safety management is an issue which is thoroughly discussed and analyzed by experts from the business sector as well as academic researchers. Business continuity Management (BCM) is a topic which is strongly related to safety management. More precisely, the part of an integrated business continuity management entitled Business Impact Analysis is defined as “*a process that identifies and evaluates the potential effects (financial, life/safety, regulatory, legal/contractual, reputation and so forth) of natural and man-made events on business operations*” (Gartner, 2017).

Regardless of the important role of business continuity policies in the secure and uninterrupted operation of core business operations within modern organizations, the application of standard BCM regulations is so far considered to be a hard task. A study conducted by Urbanec & Urbancova (2014) reveals that modern organizations are skeptical in terms applying standard BCM strategies.

In universities, the situation is rather equivalent to other public organizations. The recent COVID-19 outbreak forced academic institutions to conduct research and teaching activities online as a result of the necessary health and safety countermeasures. Such crisis response activities require high network availability in order to ensure the uninterrupted operational mode of each public university to a minimum acceptable level. However, business functions which are rather ignored during the normal operational period, during the epidemic period have been treated as highly important. Distant lectures have been implemented to ensure that the spread of the epidemic is controlled. Immediate information distribution via email or the web site of every public university regarding exceptional regulations and countermeasures against the spread of the disease has been considered as crucial. In general, the importance of ensuring the continuity and the availability of core IT infrastructure and the safety of personnel in public organizations, including universities, throughout the epidemic times has been undoubtedly realized to a considerable extent.

The current research attempts to highlight the importance of business intelligence systems towards the formulation of effective business continuity and safety management policies. For the needs of the current research a number of university BCM regulations have been considered. However, the most

complete BCM guide is provided by Columbus College (2018). Based on the study of different university BCM regulations, it can be concluded that every academic institution follows BCM strategies adjusted to its individual needs. As a consequence, it is not hard to define common recovery priorities for every academic institutions. Yet, the thorough study of multiple university and college BCM templates, can facilitate a basic pattern software based BCM and safety management solution when data regarding common business functions is utilized.

Due to the above mentioned BCM peculiarities among university institutions, standard theoretical methodologies and approaches or even sophisticated software tools that could support demanding BCM activities and knowledge discovery within the domain such as the establishment of recovery priorities for unique business functions, are not available in the literature. The same holds for other public organizations as well as enterprises that operate in the private sector.

In order to fill this gap, a standard mathematical method for classifying individual business functions, entitled business continuity testing points (or simply business continuity points) (Podaras et al, 2016) has been recently developed. The method focuses on estimating the recovery complexity of an individual business function. This estimation can facilitate the classification of a business function as critical or non-critical (Podaras, 2018) with the help of specific mathematical computations and data mining rules. So far the approach has been based on empirical lab computations and a dataset that has been constructed by the research team. In the present study, a real data set from a public college is used for further validation of the method. Data about 42 critical business functions is gathered, and used for testing the validity of the BCPTs approach.

For the purposes of the current paper, it is considered necessary to focus more on highly critical operations and systems which are crucial for ensuring the safety of the university staff as well as the students throughout the conducting of routine academic activities. The study of other university BCM policies (Rowan University, 2014; Columbus Technical College, 2018; Pace University, 2020) reveal that strict resumption timeframes and infrastructure availability are crucial prerequisites for ensuring the sustainable operation of safety-related processes as well as safety critical units and systems.

For the above stated reason, 7 safety – related operations have been chosen out of the 42 functions for which BCM data was collected, in order to further validate the BCPTs method and propose a business intelligence solution for BCM based on dimensions, facts, hierarchies and rules stemming from a mathematical and strictly validated approach.

Based on the above, the goal of the present article is the proposal of a business intelligence solution which is aimed to support decision making with respect to the rapid response to unexpected disruptions regarding safety – related business operations and ensure effectiveness in terms of business continuity and safety management in public organizations and units. The goal is supported by a number of important research objectives as follows:

- Incorporation of the business continuity points recovery parameters in order to design a conceptual business intelligence BCM tool and develop its physical data warehouse solution to support the proposed mathematical approach, classify accurately each business function in terms of recovery priority and compute proactively its maximum allowed downtime (or maximum recovery time).
- Utilization of real business continuity data to test the validity of the business continuity points as well as the functionality of the proposed business intelligence tool. In the present study, data regarding safety –related operations

in a public university are stored in the data warehouse via a developed web-based application.

- Demonstration of the descriptive and the predictive decision making possibilities of the proposed solution via online analytical processing and machine learning practical examples respectively.
- Utilization of the estimated maximum recovery time to compute the availability rates of the same safety – critical operations.

Based on the above stated objectives the rest of the paper is organized as follows:

Section 2 is devoted to the problem statement and the provision of the necessary background information. Section 3 includes a brief delineation of the business continuity recovery time effort estimation mathematical approach entitled *Business Continuity Points* for which a data warehouse schema is proposed as a database solution to host data for safety critical business functions. Business intelligence and data warehouse fundamentals are also included. Section 4 is used for analysis of the conducted results, including a thorough discussion with respect to the accuracy of the proposed solution in business continuity and safety management operations. The article is finalized with the conclusions and the future research directions.

2. Problem Statement and background information

“A Safety Critical System is such a system which has the potential and may cause accidents either directly or indirectly. Failure of such systems can result in loss of life, property damage, environmental harm and financial loss. Safety is dependent on proper operations of such systems” (Srinivas Acharyulu & Seetharamaiah, 2015). It is thus, important to classify such systems as highly critical in terms of recovery priority establishment stemming from the computation of their recovery time, and bearing in mind that such systems should operate without or with minor interruptions. As a consequence, the incorporation of mathematical tools and software solutions for criticality ranking of industrial business functions which are dependent on safety critical systems becomes a clear necessity. An interesting mathematical approach by Torabi et al (2014) refer to proactive recovery time estimation of critical business functions based on multiple criteria decision making. However, the method implements criticality ranking for a group of BFs and does not focus on the peculiarities and the unique technological, user and process related features as well as the environmental parameters of an individual BF.

Moreover, software tools which have been designed and developed for the BCM domain (Šimonová, S., & Šprync, O., 2011) though proactive, they serve as tools which manage operational failures by focusing exclusively on the technical aspects of the business functions, and do not take into account the environmental aspects (i.e. experience of the end user, users’ motivation) of an individual business function. Additionally, mathematical models which are proposed in combination with ICT - based solutions (Sahebjamnia et al, 2014) behave as reactive (not proactive) BCM and disaster recovery planning (DRP) solutions for the resumption of critical operations after their failure.

The current contribution is proposed based on the gap which is realized from the study of the available literature, according to which none of the sophisticated BCM tools and methods computes the recovery time of individual business functions based on input data that stem from the unique technological and the environmental features of this function. Additionally, “data collection is an important activity throughout the BCM development process” (Engemann & Henderson, 2012) and every “resilient organization, through an enhanced sensing capability, integrates business intelligence in order to improve situational awareness” (Starr, 2003). The current research is devoted to the construction of a business intelligence software tool which can efficiently support data collection towards the precise classification and recovery time estimation of a given

business function. Moreover, the computed timeframes can be used as a standard input for system availability measurement for safety – related functions in public organizations. The data warehouse features are conceptualized based on the business continuity points method. In the current work, real data from a public university are used for validating the initial BCPTs method, the suggested BI tool as well as the availability result for safety functions in the public institution.

3. Tools and Methods

3.1 The Business Continuity Points (BCPTs) approach

The approach (Podaras et al, 2016) focuses on the proactive estimation of the recovery time effort for an individual business function and its corresponding criticality ranking. The algorithmic process for calculating the Recovery Time is below depicted (Fig.1).

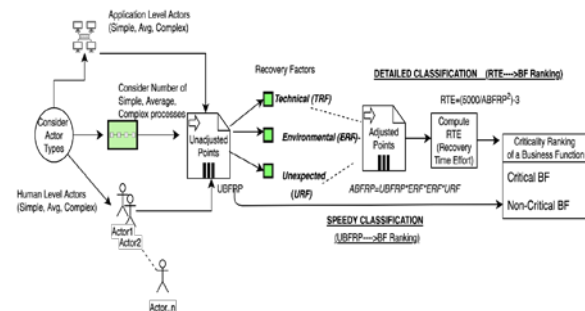


Fig. 1. The summarized model of the BCPTs Approach. (Source: own work).

For the better interpretation of the derived results we briefly mention that for the estimation of the recovery time effort we have to consider a set of recovery complexity parameters.

3.1 Unadjusted Business Function Recovery Points (UBFRP)

In order to compute the specific value human and application level actors have to be considered along with their corresponding impact (weight) on the recovery process. Moreover, the number of the involved processes and the level of complexity of each process has to be calculated. Summing up all these unadjusted parameter values, the unadjusted business function recovery points variable is computed (Fig.1).

The general function which is utilized to compute the UBFRP value is provided by Eq. (1):

$$UBFRP = \sum_{i=1}^n (HA_i * W_{HA_i}) + \sum_{i=1}^n (AP_i * W_{AP_i}) + \sum_{i=1}^n (BF_i * W_{BF_i}) \quad (1)$$

Where, HA=Human Actor i, AP=Application or Technical Actor i, BF= Business Function (or process or activity) i and W is the weight or importance of the given parameter. The corresponding values for each level of importance (W) are defined as follows:

Simple: 0.5, Average: 1 and Complex: 1.5.

Example: based on the available BCM data from the Columbus Public College, the following parameters are considered, regarding the safety critical operation named as *emergency communication*:

Human Actors: 6 Human Actors (including 1 Process Manager (Complex Level: 1.5), and 1 backup employee (Average Level: 1)

Technical Actors (mainly software tools): 5 defined Technical Actors (SW and IT infrastructure) , including 2 complex (1.5), 2 average (1) and 1 simple (0.5).

8 delineated highly important processes (complex: 1.5) based on the function description and the recovery strategy overview.

Thus the UBFRP value is computed as follows:

UBFRP = (1*1.5+1*1)+ (2*1.5+2*1+1*0.5)+(8*1.5)=20 points.

3.2 Adjusted Business Function Recovery Points (ABFRP)

For the computation of the specific value the following recovery complexity parameters are considered:

- Technical Recovery Factors (TRF)
- Environmental Recovery Factors (ERF)
- Unexpected Recovery Factors (URF), and
- Recovery Time Effort (RTE)

$$ABFRP = TRF * ERF * URF * UBFRP \quad (2)$$

$$RTE = \frac{5000}{ABFRP^2} - 3 \quad (3)$$

The Business Continuity Points method relies on the *recovery complexity* concept following the software/system complexity principle of Karner (1993) to estimate the effort required to develop an information system.

According to lab computations, the criticality ranking can be, however, determined without the computation of the resumption timeframes for specific UBFRP values (Podaras et al., 2016). The current work presents the developed decision support data warehouse schema, which currently implements the criticality ranking of individual processes without the computation of the resumption timeframes. The specific classification is entitled "speedy" criticality ranking. The more detailed criticality ranking data warehouse solution is currently under development.

Based on preliminary lab computations and after validating the general BCPTs business rules (Podaras, 2018) the following decision making algorithm has been generated and applied in the current BI solution.

Rule 1: "speedy classification of a business function based on UBFRP"

Empirical lab computations led to the construction of a data set including 46 business functions which has been used for machine learning classification of a business function based on UBFRP input (Podaras, 2018). The classification rule induced via this study is the following:

```

IF UBFRP<9.7 Points THEN
  IF UBFRP<14.45 Points THEN
    IF UBFRP<20.89 Points THEN
      Criticality Level = L2
      (Critical Operation
      RTEMAX=24Hours)
    ELSE Criticality Level
    = L1 Critical
    Operation
    RTEMAX=2Hours)
    END IF
  Criticality Level = L3
  (Non-Critical Operation
  RTEMAX=72hours)
  ELSE Criticality Level = L2
  (Critical Operation RTEMAX=24Hours)
  ENDIF
Criticality Level = L4 (Non-Critical
Operation RTEMAX=168Hours)
ELSE Criticality Level = L3 (Non-Critical
Operation RTEMAX=72Hours)
END IF

```

Based on this rule, a speedy classification can be implemented with approximately high accuracy. However, only the maximum recovery time that is mapped to the corresponding IVL (Gibson, 2010) can be assigned. Precise recovery timeframes cannot be determined via the speedy classifier.

Rule 2: The Recovery Scenario (RS) Selection

The rule-based Recovery Scenario (RS) selection of individual operations is illustrated as a decision tree which has been derived via the R software package (Yadav & Roychoudhury, 2018) after importing and processing the lab-based empirically derived data (Fig. 2)

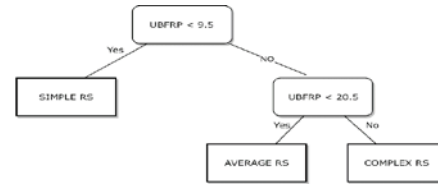


Fig. 2. The decision tree for selecting the appropriate recovery scenario. Source: (Podaras, 2018).

The semantics used in the above illustrated decision tree has the following meaning:

- Simple RS: TRF=URF=ERF=0.85. The value is constant which means no international units are utilized (Podaras et al., 2016)
- Average RS: TRF=URF=ERF=1 and
- Complex RS: TRF=URF=ERF=1.15.

As it was previously stated, the scenario selection and the computation of these parameters is important for the precise computation of the recovery time which is not included in the current version of the BI solution.

3.2 Business Intelligence Data Warehouse Preliminaries

Multiple academic researchers and business experts have provided precise delineation and definition with respect to the business intelligence data warehouse systems. A representative definition considers a data warehouse as "a collection of methods, techniques, and tools used to support knowledge workers — e.g., senior managers, directors, etc. — to conduct data analysis that helps with performing decision making processes and improving information resources" (Golfarelli & Rizzi, 2009). When data warehouse systems are integrated, a standard procedure regarding the design process is the consideration of multiple dimensions, the facts which indicate the measurable variables of these dimensions and the key attributes for dimensions and facts (Romero & Abelló, 2010). The data warehouse schema consists of several dimensions and a single fact is known as multidimensional schema or star schema.

In the multidimensional schema, "facts correspond to events which are usually associated with numeric values known as measures and are referenced using the dimension elements" (Caniupán et al., 2012). Moreover, "dimensions are modelled as hierarchies of elements, where each element belongs to a category. The categories are also organized into a hierarchy called hierarchy schema." (Caniupán et al., 2012).

Finally, based on the traditional design approaches regarding the relational as well as the object-oriented database models, three relevant design categories are distinguished, that is the conceptual, logical and physical design (Vaisman & Zimanyi, 2014). In the results section both the conceptual and the physical design of the proposed data warehouse are illustrated due to their importance.

4. Results and Discussion

4.1 The Proposed Business Intelligence Data Warehouse Tool based on the Business Continuity Points – Granularity and Hierarchies

The concept of “granularity” in business intelligence data warehouse theory appears as a “solving problem technique in which a complex problem is subdivided into smaller components or granules to facilitate information processing” (Yao, 2019). Furthermore, information granularity in all the categories of applications, acts as an element that elevates aggregate models to higher abstraction levels and enables quantification of different results in individual levels in order to ensure enhanced knowledge-based and data-oriented decision support (Pedrycz et al., 2014). In a data warehouse schema, the granularities are illustrated via the hierarchy schema where the predetermined level of detail according to which the dimensional data should be analysed is represented (Fig.3). The Business Continuity Points approach includes the following dimensions:

D1: Business Operation Level – the organizational operations for which the recovery complexity data should be stored in order to implement the proactive criticality ranking are classified according to the following hierarchy levels: business function, business process, activity and task. The task level is the lowest level of detail (granularity) for which recovery data will be analyzed.

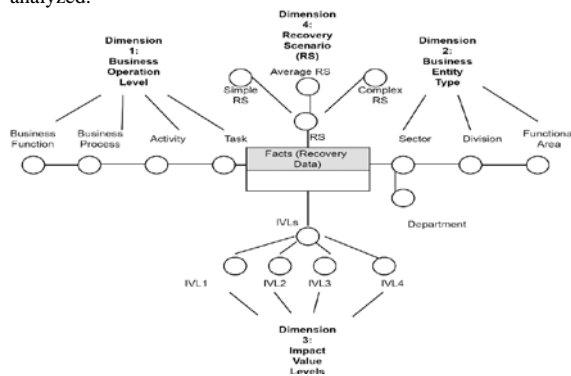


Fig. 3. Dimensions and hierarchical schema of the BCPTs business intelligence data warehouse model (speedy criticality ranking). Source: (Source: own work).

D2: Business_Entity Type- The specific dimension is utilized for defining the type of business entity, which might be a functional area, a division, a sub-division, a sector, or a department. The smallest unit size indicates the data granularity regarding the business units involved in the recovery process of an individual function.

D3: Impact Value Levels- this dimension refers to the recovery time effort (RTE) value based on the classification RTO and MAO values proposed by (Gibson, 2010). Furthermore, information regarding the corresponding impact value levels is included (IVL types). According to the specific classification, the lowest level of detail is IVL 4.

D4: Recovery_Scenario- The dimension includes the list of possible recovery scenarios. The proposed scenarios regarding the recovery procedure are categorized as simple, average and complex (Podaras et al., 2016). During the speedy classification of a business function, the scenario type can be determined by the system, after the input of the data regarding the involved Actors and Business Processes has been terminated (Podaras, 2018).

Facts and measures: the facts entity includes the calculated values of the recovery parameters. The fact include measurement regarding the total weight recovery complexity parameters namely the UHW, UAPW, UBFW and UBFRP values after considering the input parameters (attributes) regarding the

number of simple, average and complex actors (both human and application level types) which participate in the execution of the business operation, as well as the number of the involved simple, average and complex business activities.

4.1.1 Conceptual Schema

The core elements of the classical conceptual data warehouse schema include the dimensions as well as the single facts in the form of entities. The highest level conceptual schema does not include the attributes of each dimension that indicates the hierarchies as well as the data granularity. Nevertheless, a further detailed conceptual schema can provide information regarding all the included attributes as well as the primary key (PK) and foreign key (FK) semantics for both the dimensions and the facts. The high-level (Fig. 4), as well as the detailed (Fig. 5) conceptual models for the proposed BCPTs data warehouse, are currently illustrated.

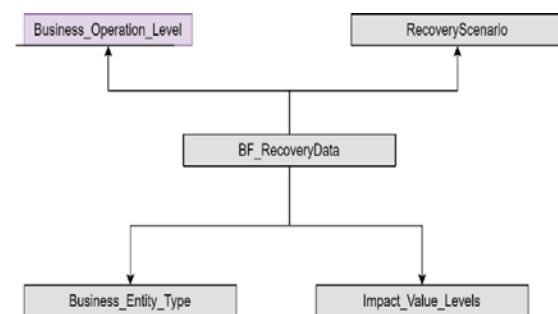


Fig. 4. The high-level conceptual BCPTs data warehouse model (speedy criticality ranking) (Source: own work)

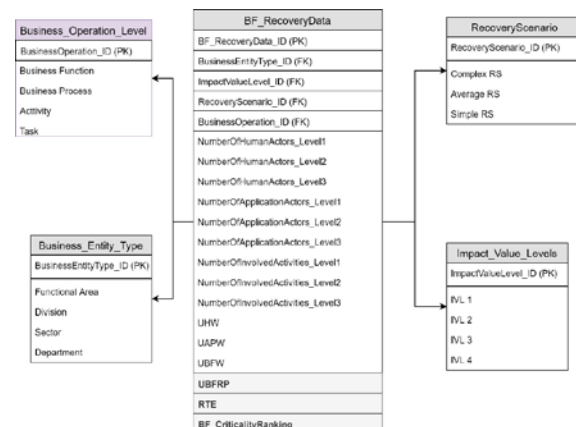


Fig. 5. The detailed conceptual BCPTs DW schema. (Source: own work).

4.1.2 Physical schema and Web-Based System Architecture

Based on the above illustrated conceptual data warehouse schema, a corresponding physical data model has been developed. The physical model includes information about the data types of each attribute as well as the length of each data type (Fig. 6). The model was developed in MySQL (Welling & Thomson, 2017). The developed physical data warehouse is used as the back end repository where the business continuity data shall be stored via a simple and user-friendly web application. The application is developed in PHP programming language (Welling & Thomson, 2017). The proposed BCPTs application interface is utilized for the recovery complexity computations. Moreover, the connection of the API and the data warehouse is supported by HTML 5.0 and CSS technology (Brown et al., 2014).

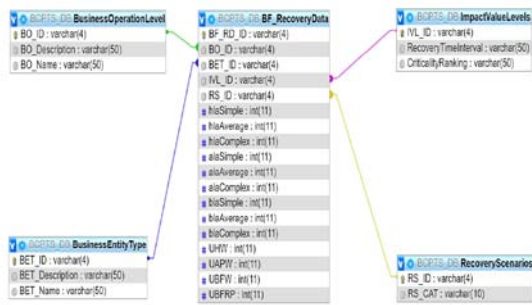


Fig.6. The physical data model of the BCPTs data warehouse

The input (Fig. 7) and output screens (Fig. 8) which include the data that are stored in the target BCPTs data warehouse are below depicted.

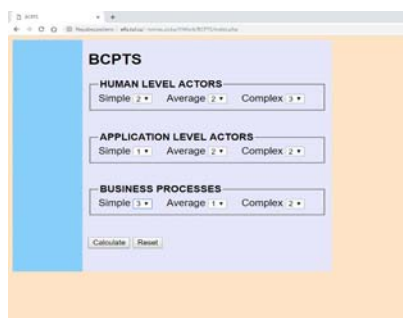


Fig.7. Input BCPTS screen

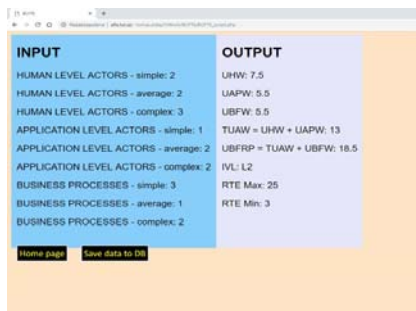


Fig.8. Ouput BCPTS screen

The overall BI system architecture is also included for the better interpretation of the web-based solution (Fig. 9).

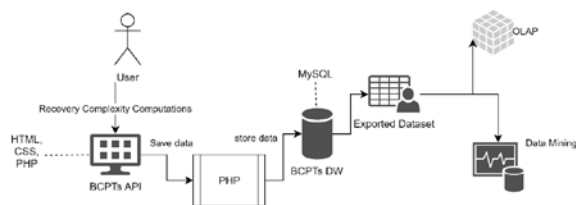


Fig. 9. The proposed BCPTS BI System Architecture

The proposed architecture's main advantage is that the data loading process is not complicated and not time demanding due to the avoidance of core ETL (Extraction, Transformation and Loading) activities such as data formatting, validation and transformation. The users can directly store the business continuity data regarding their departments, divisions, functional areas. Thus, the problem of data extraction from various sources based on flat files such as excel, text documents, or email communication, which indicate mandatory ETL activities, is

solved with the existence of the BCPTs API. It can be observed that the application can be used for exporting data in a spreadsheet format (.xls or .csv) and utilize it for online analytical processing operations and data mining predictive decision making activities.

4.1.3 Online Analytical Processing (OLAP) Operations

The online analytical processing services can be provided via exporting the data as a spreadsheet document or directly via the database solution in the form of a query. The proposed schema is based on the relational database design and implementation approach. As a consequence, SQL (Structured Query Language) queries can be utilized as explanatory representative business continuity OLAP (Sohrabi & Azgomi, 2019) descriptive operations.

The OLAP covers the analysis services task where the analysis of the recovery data is based on the UBFRP value for a single operation. The granularity is based on the operational level (function, process, activity, and task) as well as the unit level.

Example: The following SQL query is a representative and simple OLAP aggregate operation. The executed query computes the average UBFRP for individual business functions from a determined operational level:

```
SELECT BF_RecoveryDATA.BusinesOperation_ID,
Avg(BF_RecoveryDATA.UBFRP) AS AvgOfUBFRP
FROM BusinessOperationLevel INNER JOIN
BF_RecoveryDATA ON
BusinessOperationLevel.BusinessOperation_ID =
BF_RecoveryDATA.BusinessOperation_ID
GROUP BY
BF_RecoveryDATA.BusinessOperation_ID;
```

4.2 Safety Critical Computations Based on the Exported BCPTs Spreadsheet Data: Evidence from Real University BCM Data

4.2.1 Validation of the BCPTs speedy classifier and the computations supported by the proposed BI tool

The currently proposed contribution, as every proposed business intelligence solution, serves as a tool for effective and efficient predictive decision making. Predictive analytics that facilitate crucial decisions regarding future trends in public organizations are based on machine learning activities. The current version of the proposed solution supports classification of critical business operations based on the UBFRP input. As a consequence, according to Rule 1 (Section 3) the UBFRP input recovery variable can indicate the Maximum Recovery Time Effort (RTE_{MAX}) required to recover a business operation.

The currently developed web-based business intelligence application (Fig.5, Fig.6) has been used to validate the business continuity management policies based on the BCPTs computations. Taking into consideration real BCM data from a public university (Columbus Technical College, 2018) a spreadsheet dataset in .csv format has been created. Business continuity parameters have been used as the input data to infer robust maximum recovery time computations via the proposed business intelligence schema. The data have been stored in the physical database from which they have been exported in the form of a .csv file. Part of the data set is below depicted (Tab.1). The table includes arbitrary data related to 7 selected safety-critical operations in a public university. The full data set can be accessed via the link:

Tab.1 Business continuity data for safety-related functions in a selected public university (Source: own work based on data from (Columbus Technical College, 2018)

Business Function	Number of Human Actors	Number Of Involved Processes	Number Of Technical Actors	UBFRP (points)
Emergency Communication	12	2.5	5.5	20
Public Information	10.5	4	5.5	20
Risk Management	3	2.5	3	8.5
Police and Security	9	2.5	1	12.5
Mail Services	12	3.5	1.5	17
Core IT Systems	9	2.5	2.5	14
Emergency Services	13.5	2.5	0	16

Based on the inferred UBFRP computations and according to the BCPTs classifier (Podaras, 2018) specific impact value levels can be assigned for every individual function which can then be compared to the proposed by the university BCM experts impact value levels. These levels do not appear in the utilized university BCM guide but they have been inferred via mapping the proposed by the university BCM recovery team resumption timeframes for these functions. According to this value a corresponding IVL has been defined and compared to the predicted IVL via the BCPTs approach and the currently proposed business intelligence tool. In this way, the BCPTs accuracy can be verified (Tab.2)

Tab.2 The comparison between the predicted IVL with the proposed by university BCM team members IVL

Business Function	UBFRP (points)	Impact Value Level (IVL) (BCPTs prediction)	Proposed Recovery Time (by the BCM Team) (hours)	Proposed IVL (by the BCM team) (hours)
Emergency Communication	20	L2	24	L2
Public Information	20	L2	24	L2
Risk Management	8.5	L4	24	L2
Police and Security	12.5	L3	48	L3
Mail Services	17	L2	24	L2
Core Technology Infrastructure	14	L3	72	L3
Emergency Services	16	L2	24	L2

From the above recorded predictions it can be concluded that the BCPTs classifier and the incorporation of the current business intelligence web application may infer highly accurate business continuity management predictions for safety-related business functions in public universities. Based on the selected case study the predictive accuracy of the BCPTs classifier is 85.71% (6 out of 7 criticality ranking predictions have been proved correct for safety-related operations).

4.3 Data Mining Tasks

The exported spreadsheet data can be further used for machine learning activities such as classification and regression techniques. So far, the BCPTs speedy classifier has been based exclusively on UBFRP input variable for the prediction of the Impact Value Level. Based on the data exported by the currently proposed BI solution (Tab.1), more input (explanatory) variables can be utilized for predicting criticality ranking for individual business function. Moreover more association rules among the incorporated variables can be explored. The machine learning path for BCM knowledge discovery is illustrated (Fig.10)

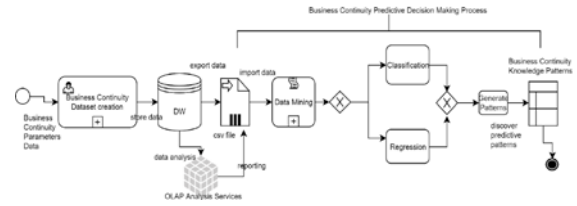


Fig. 10. The machine learning path for business continuity predictive knowledge discovery via the proposed BCPTs BI tool. Source: (Source: own work).

Regression analysis tasks can be also implemented in order to predict recovery time values. However, this is not feasible when relying exclusively on the speedy BCPTs classifier. Data mining regression analysis tasks can be implemented after considering the appropriate recovery scenarios, a set of technical, environmental and unexpected recovery factors (TRF, ERF, URF) and after estimating the Adjusted Points variable (ABFRP) for conducting precise recovery time computations.

Another issue which requires further clarification is the possibility to boost the predictive accuracy of the speedy classifier. Several robust ensemble classification techniques, such as random forests, k-folds cross validation, k-NN (nearest neighbor), logistic regression and support vector machine (SVM) may be incorporated. However, importing the conducted .csv reports into a sophisticated machine learning software package is also demanded. One of the most commonly utilized machine learning free software tool is the R package (Rahlf, 2017). Currently the possibility to connect the proposed business intelligence tool with the R package for faster machine learning activities is under consideration.

In order to test the predictive accuracy of the speedy classifier (as explained in rule 1), the full dataset (42 critical business functions) has been imported into the R-Package. We used the CART decision tree algorithm (Breiman et al, 1984) along with the 10-folds cross validation (Machine Learning Mastery, 2018) and the random forests (Breiman, 2001) classification algorithms in order to test the BCPTs accuracy in predicting Impact Value Levels (else criticality ranking or recovery priorities) for the entire data set. The ensemble machine learning techniques have been used to avoid overfitting. The evaluation metrics used for measuring the accuracy of the three tested machine learning techniques has been the confusion matrix. The advantage of the data mining is the possibility to conduct additional classifiers based on different input variables and to investigate diverse association rules among the variables included in the data set. For example, we could focus on exploring the accuracy in IVL predictions based only on human actors or considering only the number of involved processes as input. We may also use association rules to explore relationships among the included variables (Fig. 11).

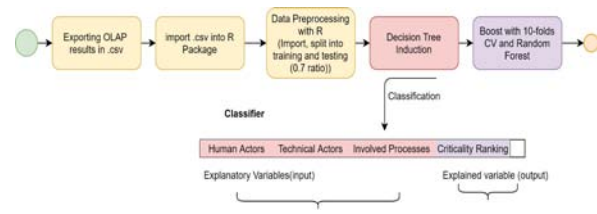


Fig.11. The data mining classification procedure for critical business functions based on a public university data set.

For practical demonstration, the entire dataset has been used to predict IVL based on UBFRP input. The data set is composed of 42 records and 1 input (UBFRP) and 1 output variable (IVL). The data preprocessing procedure includes importing data and splitting data in a logical ratio between training and testing data. In our example, the splitting ratio has been 0.7 (70% training

data, 30% testing data. For the induction of the decision tree, the library *rpart()* has been loaded.

For the advanced classifiers more packages have been required. The 10folds CV requires the *e1071* and *caret* libraries, while the *randomForest* library has been loaded to investigate the random forest classification accuracy. The induced decision (Fig.12) tree as well as the random forest out of bag (OOB) error plots (Fig.13) are illustrated. The OOB estimate relies on observations which are not considered in the bootstrap sample. The error plot (Fig. 13) shows that 500 trees were induced for enhancing the classification robustness. The prediction error is reduced and stabilized after a specific number of induced trees (<200 trees).

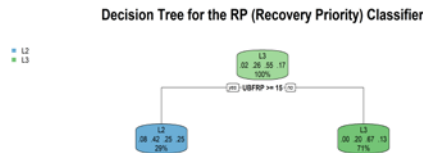


Fig. 12. The decision tree for predicting IVL criticality ranking of crucial business functions in a public university based on the full data set (Source: Author)

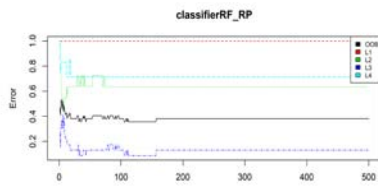


Fig. 13. The IVL classification out of bag (OOB) error plot based on the random forest based on the full data set (Source: Author)

The accuracy of the decision tree, 10-Folds CV and the random forest algorithms is illustrated on the following summarized table (Tab. 4).

Tab.4 Comparison of the predictive accuracy of the three different classifiers with respect to the recovery priorities for the entire set of critical business functions in the public university.

IVL Classifier	Accuracy (based on the confusion matrix results)
Decision tree (CART)	75%
10folds CV	75%
Random forest	91.66%

After considering the above illustrated results, it can be concluded that the proposed business intelligence tool can be considered as a rapid and effective software solution for business continuity and safety management. So far, the research has been focused on the establishment of balanced recovery priorities for safety critical operations in public organization. However, a complete safety management policy should also rely on the robust availability measurement of these operations.

4.4 Computing availability rates for safety-related operations via RTEmax input for an integrated safety management framework

Another dimension that must be considered for more effective safety management policies in public organizations and units is the estimation of the availability of safety critical operations. An interesting recent study (Spang, 2017) highlights the importance of a safety management system in order to protect workers in all industries from electrical hazards, and defines it as a “formal and proven system for the safe execution of work activities”. Moreover seven core safety management principles are indicated

including “balanced priorities” in terms of protecting the “workers, the public and the environment”. The business continuity points is proposed a mathematical method for setting balanced recovery priorities in the occasion of a failure of a safety critical system and the involved industrial functions.

Additionally, a description of the Integrated Safety Management system as provided by the U.S. Department of Energy (2008), indicates, among others, the “operational excellence” as an important safety management principle. The study relates operational excellence with high reliability achieved through “focus on operations, quality decision-making, open communications, deference to expertise, and systematic approaches to eliminate or mitigate error-likely situations”. According to the second principle, the business continuity points is also aimed to serve as an operational excellence tool for controlling the reliability and, more precisely the availability of a safety critical function and the corresponding systems. Based on the above, the business continuity points can serve as a crucial part of an integrated safety management under the below summarized framework (Fig.14)

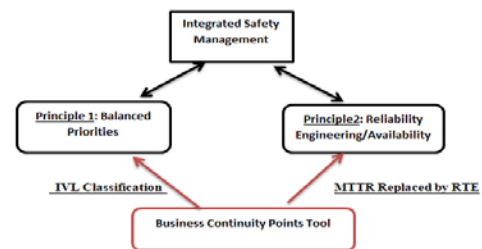


Fig. 14. Business Continuity Points as Part of an ISM – Proposed Framework (Source: Author)

Due to the fact that the current version of the developed business intelligence solution exports business continuity spreadsheet reports, a visual basic for applications (VBA Excel) software interface has been utilized for estimating the availability rates for the selected safety – related business functions based on the RTEmax value that is used. The VBA application has been developed to estimate availability rates based on the formula (4) (Rance, 2013) :

$$Availability = \frac{AST - DT}{AST} \times 100\% \quad (4)$$

where, AST = Agreed Service Time, DT=Downtime. DT value is also mentioned as Mean Time To Repair (MTTR) in other availability formulas (Garcia et al, 2016)

Assuming that AST=22 hours/day/week (154 hours/week).The expected downtime will then be, DT=2 hours/day or 14 hours/week.

As a result, the weekly availability for this function is:

$$A_{WEEK} = [(154-14)/154] * 100\% = 90.9\%$$

In the case that a maximum unplanned downtime interval of 8 hours/week is permitted the availability rate is then estimated as

$$A = [(154-14-8)/154]*100\% = 85.71\% , \text{ which indicates the maximum tolerable weekly availability rate, so that an organization will not suffer significantly negative consequences.}$$

Based on the utilized case study, it has been attempted to estimate yearly availability rates based on the BCPTs proposed maximum recovery time, with respect to the same safety related business functions. The following facts have been assumed:

- each business function is highly critical, $AST=24$ hours/day (8760 hours/year),
- the DT value has been replaced by the RTE_{MAX} proposed by the BCPTs tool to compute the BCPTs weekly availability rates,
- the DT value has been replaced by the maximum tolerable downtime proposed by the university BCM team, in order to compute the proposed by the university weekly availability rates and compare them with our computed results,
- one outage incident per year is considered, the duration of which is RTE_{MAX} .

For the above mentioned computations a simple VBA excel tool has been developed and utilized (Fig. 15).

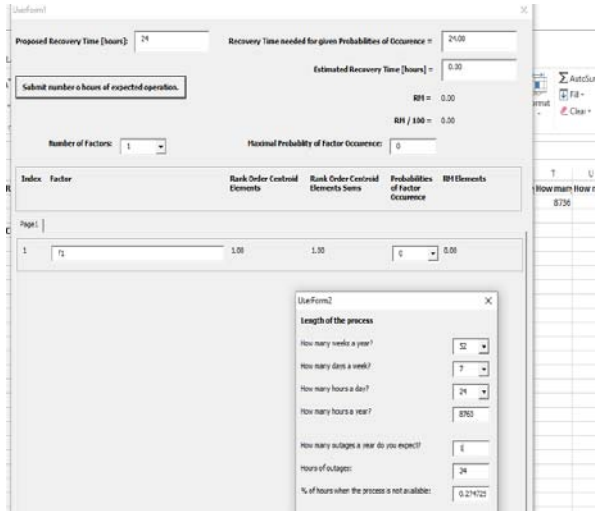


Fig. 15. The VBA Excel form for estimating availability rates for individual business functions based on recovery time input

Tab.5 Predicted availability rates for safety related university business functions.

Business Function	Proposed Maximum Recovery Time by the BCPTs BI tool (hours)	Proposed Maximum Downtime period from the university BCM team (hours)	Predicted Yearly Availability Rate based on RTE_{MAX} (BCPTs approach)	Proposed Yearly Availability Rate by the University BCM experts
Emergency Communication	24	24	99.72%	99.72%
Public Information	24	48	99.72%	99.45%
Risk Management	168	24	98.07%	99.72%
Police and Security	72	48	99.17%	99.45%
Mail Services	24	24	99.72%	99.72%
Core Technology Infrastructure	72	72	99.17%	99.17%
Emergency Services	24	24	99.72%	99.72%

The conducted results indicate satisfactory performance levels for both the BCPTs approach and the proposed BI tool in terms of availability estimation for safety critical operations. It can be noticed that only for two business functions, that is, the *risk management* and the *police and security* the computed availability slightly deviates from the proposed by university BCM experts rates. However, 5 out of 7 estimations were highly accurate, while in the case of the public information function the proposed by our approach availability rate was higher than the one proposed by the BCM experts.

5. Conclusions and future research directions

Business intelligence solutions are important for ensuring resilience in public organizations. The big data manipulation is a modern challenge of paramount importance for business continuity and safety management. Public universities include several safety-related business functions for which rapid restoration after unexpected interruptions and high availability rates are crucial for their smooth operation. The current work has been focused on the development of a modern business continuity and safety management tool based on the business intelligence data warehouse concepts. The dimensions, facts and the defined information granularity has been designed based on the business continuity points (BCPTs) method, that is utilized for the proactive recovery priority level definition as well as the proactive computation of the resumption timeframe for individual business functions. The method is based on the computation of recovery complexity and effort estimation parameters which have been inspired by the Use Case Points approach. In the present article, the BCPTs approach has been validated via a real data set from a public university. The proposed tool is supported by a web interface which facilitates the BCPTs computations and enables the estimation of the criticality ranking and the recovery time effort estimation. The exported spreadsheet data can be used for OLAP operations and data mining activities. From the utilized data set which is composed of 42 university business functions we selected 7 safety related functions to measure the accuracy of the BCPTs classifier and the computations conducted by the proposed BI solution. The entire dataset has been also investigated with machine learning classification techniques, namely the decision trees, the 10Folds cross validation and the random forests with respect to the IVL predictive accuracy. The estimated accuracy in predicting the criticality level (impact value level - IVL) has for the safety-related operations has been 85.71% which is highly promising. For the full dataset the decision tree classification and the 10folds cross validation techniques were 75% accurate based on the confusion matrix results stemming from the testing data (30%) over the full dataset. The random forest technique was 91.66% accurate. Finally, the safety-related functions, have been used for investigating the accuracy of the current tool in estimating their availability rates. The availability rates computed via the suggested BI tool, have been highly accurate when compared to the proposed availability rates by the university BCM experts. A developed VBA Excel simple interface has been used to support availability computations which stem from the exported spreadsheet data. Only 2 out of 7 business functions slightly deviated from the proposed by experts rates. In general the results conducted throughout the present research are highly encouraging for the proactive business continuity and safety management in public organizations and especially for universities which has been the target domain of the present article.

Nevertheless, crucial future research activities include the further validation of the BCPTs BI solution by extracting data from more universities, the incorporation of more data features in order to infer more advanced machine learning classification techniques and, also, the enrichment of the current web-based BI interface by including more functionalities. One of them is the connection of the application with sophisticated machine learning software packages such as the R package. However larger data volumes from other universities should be gathered. This task is demanding due to the fact that BCM data is sensitive and confidential in most cases. However, data from 5 more universities which is currently processed and analyzed by the research team have been so far collected and will be used for future investigation. Moreover, the incorporation of the current standalone VBA tool in the BI solution for computing the availability rates is planned. Finally, the current interface requires further testing for estimating accurate resumption timeframes based on several recovery scenarios for every individual function. In this way, machine learning regression tasks can be performed. Similar BCM BI solutions can be also proposed for other public organizations.

Literature:

1. Gartner. Magic Quadrant for Disaster Recovery as a Service. 2017. <https://www.gartner.com/doc/3746618/magic-quadrant-disaster-recovery-service>. (Accessed 13 January 2019).
2. Urbanec, J. and Urbanecova, H. *Adoption of Business Continuity Management Standards in Czech Organizations*. Scientia Agriculturae Bohemica. 45(1). 2014. 66-74 pp. DOI: 10.7160/sab.2014.450109
3. Columbus Technical College. *Business Continuity Plan 2018-2019*. 2018. Retrieved from: <https://www.columbustech.edu/skins/userfiles/files/2018-2019%20Business%20Continuity%20Plan.pdf>.
4. Podaras, A., Antlova, K., & Motejlek, J. *Information Management Tools for Implementing an Efficient Enterprise Business Continuity Strategy*. E M Ekon. Manag. 19. 2016. 165-182 pp. <http://dx.doi.org/10.15240/tul/001/2016-1-012>.
5. Podaras, A. (2018). *Measuring the Accuracy Levels Regarding the Dual Business Function Criticality Classifier*. IEEE Access. 6. 2018. 41598-41606 pp. doi: 10.1109/ACCESS.2018.2860976.
6. Rowan University. *Business Continuity Management Policy*. 2014). <https://confluence.rowan.edu/display/POLICY/Business+Continuity+Management>. (Accessed 9 January 2019).
7. Pace University. *Security and Emergency Management*. Business Continuity Planning. 2020. Retrieved from: <https://www.pace.edu/security-emergency-management/business-continuity-planning>.
8. Srinivas Acharyulu, P.V. & Seetharamaiah, P. *A Framework for Safety Automation of Safety-Critical Systems Operations*. Safety Science. 77. 2015. 133-142 pp. doi: [dx.doi.org/10.1016/j.ssci.2015.03.017](https://doi.org/10.1016/j.ssci.2015.03.017).
9. Torabi, S. A., Rezaei, H., & Sahebjamnia, N. *A New Framework for Business Impact Analysis in Business Continuity Management (with a Case Study)*. Safety Science. 68. 2014. 309 – 323 pp. doi: <http://dx.doi.org/10.1016/j.ssci.2014.04.017>.
10. Šimonová, S., & Šprync, O. *Proactive IT/IS monitoring for business continuity planning*. E M Ekon. Manag. 14. 57-65 pp. 2011.
11. Sahebjamnia, N., Torabi, S. A., & Mansouri, A. *Integrated Business Continuity and Disaster Recovery Planning: Towards Organizational Resilience*. European Journal of Operational Research. Vol. 242. No. 1. 2014. pp. 261-273. ISSN: 0377-2217.
12. Engemann, K. J., & Henderson, D.M. *Business Continuity and Risk Management: Essentials for an Organizational Resilience*. Rothstein Associates Inc., Connecticut, USA, 2012.
13. Starr, R. *Enterprise Resilience: Managing Risk in the Networked Economy*. Available at: http://www.boozallen.com/content/dam/boozallen/media/file/Enterprise_Resilience_Report.pdf. 2003 (Accessed 8 February 2019).
14. Karner, G. *Use Case Points—Resource Estimation for objectory Projects*. Objective Systems SF AB, 1993. <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.604.7842&rep=rep1&type=pdf>, (accessed 8 December 2018).
15. Gibson, D. (2010). *Mitigating Risk with a Business Impact Analysis*. Managing Risks in Information Systems, second ed., Jones & Bartlett Learning, Burlington, NJ, USA, 2010.
16. Yadav, M.L., & Roychoudhury, B. Handling missing values: a study of popular imputation packages in R. Knowl. Based Syst. 160. 2018. 104-118. <https://doi.org/10.1016/j.knosys.2018.06.012>.
17. Golfarelli, M., & Rizzi, S. *Data warehouse design. Modern principles and methodologies*. McGraw-Hill, 2009.
18. Romero, O., & Abelló, A. *A Framework for Multidimensional Design of Data Warehouses from Ontologies*. Data Knowl. Eng. 69. 2010. 1138–1157 pp. <https://doi.org/10.1016/j.datak.2010.07.007>.
19. Caniupán, M., Bravo, L., & Hurtado, C. A. Repairing Inconsistent Dimensions in Data Warehouses. Data Knowl. Eng. 79–80. 2012. 17–39 pp. <https://doi.org/10.1016/j.datak.2012.04.002>.
20. Vaisman, A., & Zimanyi, E. *Data Warehouse Systems: Design and Implementation*. Data Centric Systems and Applications. Berlin: Heidelberg: Springer-Verlag, 2014.
21. Yao, M.X. *Granularity Measures and Complexity Measures of Partition-Based Granular Structures*. Knowl. Based Syst. 163. 2019. 885-897 pp. doi:<https://doi.org/10.1016/j.knosys.2018.10.015>
22. Pedrycz, W., Al-Hmouz, R., Morfeq, A. and Balamash, A.S. *Building Granular Fuzzy Decision Support Systems*. Knowl. Based Syst., 58 (2014) 3-10 pp. <https://doi.org/10.1016/j.knosys.2013.07.022>.
23. Welling, L., & Thomson, L. *PHP and MYSQL Web Development*. Fifth ed. Addison-Wesley. USA, 2017.
24. Brown, T.B., Butters, K., & Panda, S. *Jump Start HTML5: Get Up to Speed With HTML5 in a Weekend*. First ed., Sitepoint Pty. Ltd, Australia, 2014.
25. Sohrabi, M. K., & Azgomi, H. (2019). *Evolutionary Game Theory Approach to Materialized View Selection in Data Warehouses*. Knowl. Based Syst. 163. 2019. 558-571 pp. <https://doi.org/10.1016/j.knosys.2018.09.012>.
26. Rahlf, T. *Data for Everybody*. Data Visualization with R: 100 Examples. Springer International Publishing, Switzerland, 2017. pp. 1–4. ISBN 978-3-030-28443-5.
27. Breiman L., Friedman, J.H., Olshen, R.A. & Stone, C.J., *Classification and regression trees*. Chapman and Hall. New York, USA. 1984.
28. Machine Learning Mastery. *A gentle introduction to k-fold cross-validation*. 2018. Retrieved from: <https://machinelearningmastery.com/k-fold-cross-validation/>.
29. Breiman, L. *Random forests*. Mach Learn. 45(1). 2001. 5–32 pp.
30. Spang, R. *Integrated Safety Management: Creating an All-Inclusive Electrical Safety Program*. IEEE Industry Applications Magazine. 64-70 pp. 2017. ISSN Online: 1077-2618. DOI: 10.1109/MIAS.2016.2600729.
31. U.S. Department of Energy – Office of Environmental Management Headquarters (2008). *Integrated Safety Management System Description*. 2008. <https://energy.gov/sites/prod/files/em/EMHQISMSDescription5-7-08.pdf> (Accessed 9 May 2020).
32. Rance, S. Defining availability in the real world. 2013. Available at: <https://itsmf.custompublish.com/getfile.php/1283611.1559.wcsxycquer/Defining+availability+in+the+real+world.doc>
33. García, I.E.M., Sánchez, A.S. & Barbatí, S. *Reliability and Preventive Maintenance*. MARE-WINT. New Materials and Reliability in Offshore Wind Turbine Technology. 235-272 pp. Springer, 2016. DOI 10.1007/978-3-319-39095-6.

Primary Paper Section: I**Secondary Paper Section: IN**



J INDUSTRY

JA	ELECTRONICS AND OPTOELECTRONICS
JB	SENSORS, DETECTING ELEMENTS, MEASUREMENT AND REGULATION
JC	COMPUTER HARDWARE AND SOFTWARE
JD	USE OF COMPUTERS, ROBOTICS AND ITS APPLICATION
JE	NON-NUCLEAR POWER ENGINEERING, ENERGY CONSUMPTION AND UTILIZATION
JF	NUCLEAR ENERGY
JG	METALLURGY, METAL MATERIALS
JH	CERAMICS, FIRE-PROOF MATERIALS AND GLASS
JI	COMPOSITE MATERIALS
JJ	OTHER MATERIALS
JK	CORROSION AND MATERIAL SURFACES
JL	FATIGUE AND FRACTURE MECHANICS
JM	STRUCTURAL ENGINEERING
JN	CIVIL ENGINEERING
JO	LAND TRANSPORT SYSTEMS AND EQUIPMENT
JP	INDUSTRIAL PROCESSES AND PROCESSING
JQ	MACHINERY AND TOOLS
JR	OTHER MACHINERY INDUSTRY
JS	RELIABILITY AND QUALITY MANAGEMENT, INDUSTRIAL TESTING
JT	PROPULSION, ENGINES AND FUELS
JU	AERONAUTICS, AERODYNAMICS, AEROPLANES
JV	COSMIC TECHNOLOGIES
JW	NAVIGATION, CONNECTION, DETECTION AND COUNTERMEASURE
JY	FIREARMS, AMMUNITION, EXPLOSIVES, COMBAT VEHICLES

CALCULATION OF PROCESS' IDEALITY DEGREE THROUGH IDEALITY EQUATION OF TRIZ

^aVLADIMÍR SOJKA, ^bANABELA C. ALVES, ^cPETR LEPSÍK

^{a,c}Technical University of Liberec, Department of Design of Machine Elements and Mechanisms, Liberec, Czech Republic

^bCentro ALGORITMI, University of Minho, Department of Production and Systems, Guimarães, Portugal
email: ^avladimir.sojka@tul.cz, ^banabela@dps.uminho.pt, ^cpetr.lepsik@tul.cz

This publication was written at the Technical University of Liberec as part of the project "SGS-2020-5027 - Research of new approaches to process improvement" with the support of the Specific University Research Grant, as provided by the Ministry of Education, Youth and Sports of the Czech Republic in the year 2020. The Portuguese co-author was supported by FCT – Fundação para a Ciência e Tecnologia within the R&D Units Project Scope: UIDB/00319/2020.

Abstract: The state of processes and their improvement progress could be measured by many parameters or indicators. When the overall state of the process is needed several indicators must be determined. In case that there are two states of the process, or two processes to compare, it could be confusing to determine which state, or process, is better. A solution for that can be a concept of Ideality from TRIZ (Theory of Inventive Problem Solving). The concept of Ideality is based on the improvement of the Technical System in a way of Ideality or Ideal Final Result. The use of Ideality brings better improvements of the system in a way of technical evolution. The basic Ideality equation from TRIZ is unfortunately hard for practical use. That is why a more specific solution is needed. This paper aims to present a new way for the definition of the Ideality equation for production processes. This equation contains parameters as production time, costs, quality but also process aspects as safety, ergonomics, and ecology of the process. This way of determination of the process state can help with the comparison of process states, but it also pushes us to focus our improvement efforts in a way of Ideal process.

Keywords: Process improvement, Ideality, TRIZ, Process indicator, Lean.

1 Introduction

Improvement of the process could be measured and managed by many parameters and indicators. Common indicators of process state are often focusing on one parameter. There is no indicator that considers all crucial aspects of the process [1], [2].

TRIZ (Theory of Inventive Problem Solving) could help with this problem. One of the ground principles of TRIZ is the concept of Ideality. Ideality is the best state of the technical system and in our effort to improve or innovate the system we should try to be closer and closer to the Ideal state of the system. Problem is that the general equation for a degree of Ideality is more or less theoretical and it is hard to use it in practice. Even harder for manufacturing or other processes.

The aim of this paper is to present the Ideality equation of TRIZ as a way to calculate a degree of process' Ideality for use as an indicator of process' state for process improvement.

2 Background

2.1 TRIZ

TRIZ is an acronym for Russian теория решения изобретательских задач, in English Theory of Inventive Problem Solving. TRIZ is an umbrella term for many tools and techniques used for innovative solving of problems. It is based on the research of more than three million patents, where repeating patterns were found [3]. There is a finite number of most appearing types of problems and there is a finite number of general solutions for these problems. From these Patterns, tools and techniques were designed. The use of these tools helps to achieve a better solution in a shorter time.

2.2 Ideality

Ideality is one of the key principles of TRIZ. It helps to seek a perfect solution. As a tool for seeking Ideality in the Technical system, an Ideal Final Result (IFR) is used. Ideal Final Result is a state where a function of the system is achieved without any system.

Concept of Ideality with Ideal Final Result has been used in many publications before. Domb [4], [5] is focusing on the concept of Ideal Final Result which should have all the benefits, no harms, and no costs. She uses the concept of Ideality and Ideal Final Result for better problem-solving. Belski [6], [7] uses Method of Ideal Result and list of available resources for innovative solutions to problems. Duepen [8] uses Ideality for achieving a higher degree of creativity in art. In [9] Ideality is used for better Software development. Navas [10] shows ways for increasing Ideality for complex systems.

Soderlin [11] is comparing Ideality and Value, to decide if the Ideality is scientifically correct. He mentioned that Ideality is very similar to Value, but Ideality goes in its concept further than Value. Mann in [12], [13], and [14] discuss the importance of Ideality and the word "self" in the context of searching for a better solution, which he also demonstrated on several case studies. The word "itself" in a way of Ideality is also discussed in [15] by Domb.

The degree of system's Ideality can be theoretically calculated from equation (1), mentioned in [11] or [16].

$$I = \frac{\sum \text{Benefits}}{\sum \text{Harms}} \quad (1)$$

Where I , is the degree of Ideality, Benefits are all positive functions' effects, and Harms are all negative functions' effects.

In other papers ([4], [11], [17], [18], and [19]), the Ideality is defined as

$$I = \frac{\sum \text{Benefits}}{\sum \text{Harms} + \sum \text{Costs}} \quad (2)$$

Where Costs are all costs for the implementation of an innovative solution. This equation has a problem with dimension because the result is [1/\$]. Both equations (1) and (2) are mainly used only for theoretical purposes. Not for real calculation of Ideality level. As Soderlin in [11] shows these equations work well until we try to calculate real values.

Fact that Ideality equation is not ideal is supported by many attempts for a better definition of the system's degree of Ideality. Slocum, Lundberg, and Walter in [17] defined equation based on equation (2) and they tried to determine a more complex equation for Ideality combined with Reangularity and Semangularity from Axiomatic Design. Petrov and Seredinski in [20] dividing the ideality equation (2) on numerator and denominator, and show which ways could be used for achieving a higher degree of Ideality. They give us a list of scenarios for the increase of numerator and decrease of the denominator. Mishra shows similar results in [19], where he also discusses concepts of Ideal Final Solution, Goal, Product, Process Technique, and System. In [21] Mishra criticizes the concept of Ideality for its subjectivity because the Ideal state can be different for everyone. In [18] there is an equation reformulated in a way that solution of the problem is the desired result with (Ideal) correcting system. Dai and Ma in [16] show a new method of how to define Ideality, where the definition of functions is based on Engineering Parameters. Lyubomirskiy in [22] also shows the limitations of the current equation, and presenting a new way of how to calculate not Ideality but Practical Value of the system. Which is basically multiplication of user satisfaction with all parameters of the system.

2.3. Lean Production

Lean Production is an organizational management methodology with its roots in Toyota Production System [23], [24]. Continuous improvement and respect for people are the central aspects of this system. This system is, many times, represented as a house with two main pillars: Just-in-time (JIT) and Jidoka or

autonomation that require a bunch of tools to support the house [25]. In the roof of this house are the objectives to attain: best quality, lowest cost, shortest lead time, best safety, and high morale (Liker and Morgan) [26]. To achieve these, companies must continuously improve, which means to continuously eliminate waste [27]. There three types of activities: 1) Value-added activities that are all activities that the client is willing to pay for; 2) Non-Value added activities or waste that are all the activities that do not adds value from the client point of view and that he/she is not willing to pay; 3) Non-Value added activities are activities that do not adds value but are necessary activities. Producing with wastes means overburdening people and machines and the planet, retrieving from it more than is needed. This is why some authors considered that Lean Production contributes for better work conditions and better environment [28], [29] To provide sustainable solutions, Lean have been associating with important methodologies such as TRIZ [30]. Value concept is the first principle of Lean Thinking principles, [31]. That is the philosophy behind Lean Production. The other four principles are Value Stream, Flow, Pull production and pursuit perfection. This concept of perfection is similar to Ideality concept reviewed in the previous section (2.2), where Ideality goes even more further.

3 Development of the ideality equation

3.1 Ideality for processes

In this paper, the goal is to determine an Ideality equation useable for processes. First, crucial parameters for the state of the process should be set. In manufacturing processes, we are mainly focusing on the time of production, quality of production, and the cost of production. Because Productivity and quality are not everything, we should also look for safety, ergonomics, and ecology of the process. These are the six main aspects of each process. To have a process in a better state we need to have shorter production time, better quality, less cost, higher safety, less ergonomics, and environmental impact. These aspects are inspired by Toyota's house from [26], described above.. Ergonomics and ecology aspects of the process have been added for the health of workers and the better environmental impact of the processes.

For final Process' Ideality, we should consider all of these aspects and at the same time keep the properties of the original TRIZ Ideality from equation (1) without changes.

3.2 Ideality equation for processes

The easiest way of how to formulate an Ideality equation for processes including all six key aspects is to put all six aspects into the original equation (1). In case that we would try to only decide which of parameters is beneficial and which is harmful, the result will be that all parameters could be defined as harmful for the process because we want to have it in ideal on zero levels (no time, no defects, no costs, no safety risks, no ergonomics or ecology impact). Every aspect should be defined as a positive and negative part and these values should be put into equation (1), then a theoretical Process' Ideality equation appears.

$$PI_{theoretical} = \frac{\sum B_T + \sum B_Q + \sum B_C + \sum B_S + \sum B_{ERG} + \sum B_{ECO}}{\sum H_T + \sum H_Q + \sum H_C + \sum H_S + \sum H_{ERG} + \sum H_{ECO}} \quad (3)$$

Where B 's are representing beneficial parts, H 's representing harmful parts. Index T is for time, Q for quality, C for Costs, S for safety, ERG for ergonomics, and ECO for ecology.

The problem with equation (3) is the same as with equations (1) and (2), it works only in theory. In practice, each aspect, time, quality, costs, etc., have a different dimension, and these dimensions could not be added together. One way to solve this problem is to recalculate every aspect into costs. That is possible, time for production can be represented by costs, the cost for defects can be also calculated, even safety, ergonomics, and ecology could be determined as costs. This recalculation to

costs could be hard but mainly it is time-consuming. That is why a different approach was chosen.

To reach dimensionless of the result, the equation must be divided into a sum of partial Ideality for each aspect.

$$PI = \sum_{i=1}^6 pPI_i \quad (4)$$

Where PI is overall Process' Ideality and pPI_i representing partial Ideality for all six aspects (time, quality, costs, safety, ergonomics, and ecology). In longer form equation (4) looks like this

$$PI = pPI_T + pPI_Q + pPI_C + pPI_S + pPI_{ERG} + pPI_{ECO} \quad (5)$$

Partial Ideality should be determined for each process' parameter (time, quality, costs, safety, ergonomics, and ecology). Partial Ideality equation should look like

$$pPI_i = \frac{\sum_{j=1}^n B_j}{\sum_{k=1}^m H_k} \quad (6)$$

Where index i represents aspects as time, quality, costs, safety, ergonomics, and ecology of the process, n is a number of benefits for aspect i , j is specific benefit, m is a number of harms for aspect i , and k is specific harm. For calculation of Ideality of each parameter, we need to determine the beneficial and harmful part of the parameter. The numerators and denominators for each partial equation should have the same dimension, so the result will be dimensionless.

3.3 Partial Process' Ideality for time

A beneficial part of time connected to the process could be time spend on Value Added activities (*VA time*). On the other side, harmful time is time spent for the rest of the time or we can say on Non-Value Added activities (*NVA time*). Partial Process' Ideality equation for time is then

$$pPI_T = \frac{\sum VA \text{ time}}{\sum NVA \text{ time}} \quad (7)$$

Where pPI_T is Partial Process' Ideality for time. The ideal state of the process from the perspective of time is that we do not spend any time but the process outcome is done. Formulation near to this ideal state is that all time spent in production is productive and only value-adding activities are made. In other words, more time is spent on productive activities and less on unproductive ones, the use of time is more ideal. *NVA time* contains activities without value, i.e., waste activities and also activities without value but necessary ones (as machine settings, maintenance, etc.).

3.4 Partial Process' Ideality for quality

The quality of the process could be represented by a number of good and bad pieces. Good pieces (*OK pcs.*) are beneficial and defects (*NOK pcs.*) are harmful. From that the Partial Process' Ideality for quality (pPI_Q) is

$$pPI_Q = \frac{\sum OK \text{ pcs.}}{\sum NOK \text{ pcs.}} \quad (8)$$

The ideal state of the process from a quality point of view is that no defects are made, and only good parts are produced. The next harmful part of quality could be also considered a number of defect opportunities. This metric could give better information about defect possibilities of the process which goes deeper and closer to the quality root cause than only the count of good and bad pieces.

3.5 Partial Process' Ideality for costs

It is hard to imagine what should be in the equation for costs' ideality. Costs are clear harms, but we need to have some positive part of costs to have a dimensionless result. For that, we must think more outside of the box. Costs are part of financial resources, and what is positive in a financial way. Now it is clear that a positive part of finances is profit from the process. Partial Process' Ideality for costs (pPI_c) is then

$$pPI_c = \frac{\sum Profits}{\sum Costs} \tag{9}$$

The result is obviously dimensionless, and the ideal state of the process from a financial point of view is that the process is without any production costs and in the same time process generates profits. Bigger profits and lower costs mean more ideal process.

3.6 Partial Process' Ideality for safety

State of safety, ergonomics, and ecology is harder for a clear determination than previous process' factors. To evaluate a safety level of the process one must analyze all steps of the process and determine all possible safety risks. For each safety problem, there should be calculated safety risks. Risk is defined as the Probability of safety problem occurrence multiplied by the Severity of the danger. The positive side of safety is all activities

without any safety risk. Then the equation for Partial Process' Ideality for safety (pPI_s) is

$$pPI_s = \frac{\sum activities\ without\ safety\ risk}{\sum safety\ risks} \tag{10}$$

The ideal state of the process in a way of safety is when there are no safety risks and all activities in the process are safe. For determination of risk, safety danger must be categorized by its Probability of occurrence and its Severity. For this, the easiest model is to determine Probability on a scale from improbable to frequent, where frequent has the highest score. For Severity it is the same principle there should be categories from very minor impact to a catastrophic result, where catastrophic is with the highest score. The Sum of safety risks can be calculated as

$$\sum safety\ risks = Risk_s = \sum_{x=1}^n (P_x * S_x) \tag{11}$$

Where P_x is the probability that danger occurs, and S_x is the severity of that danger. The index x represents specific safety danger in the process, n is a number of process' steps with any danger.

The coefficient or score for Probability and Severity could be chosen from table Tab. 1, where the Risk number based on chosen Probability and Severity can be also found.

Risk = P*S			Severity					
			none	minor	middle	major	hazardous	catastrophic
Probability	incredible	0	0	0	0	0	0	0
	improbable	0.2	0	0.04	0.08	0.12	0.16	0.20
	remote	0.4	0	0.08	0.16	0.24	0.32	0.40
	occasional	0.6	0	0.12	0.24	0.36	0.48	0.60
	probable	0.8	0	0.16	0.32	0.48	0.64	0.80
	frequent	1	0	0.20	0.40	0.60	0.80	1
	score		0	0.2	0.4	0.6	0.8	1

Tab. 1: Example of Risk determination by Probability and Severity

3.6 Partial Process' Ideality for ergonomics

Calculation of the Ideality for ergonomics of the process is based on the same principle as calculation of Ideality in a way for safety. The process must be analyzed and for every step, it should be decided if there is no problem with ergonomics. The negative part of ergonomics is a sum of all ergonomics risks, which could be calculated the same way as risks for safety. Probability and Severity of the ergonomic risk can be also chosen from Table 1. Partial Process' Ideality for ergonomics is then

$$pPI_{ERG} = \frac{\sum activities\ without\ ergonomic\ risk}{\sum ergonomics\ risks} \tag{12}$$

The ideal state of the process from an ergonomic point of view is when all steps in the process are without ergonomic risk.

3.6 Partial Process' Ideality for ecology

Calculation of the Partial Process' Ideality for ecology is based on the same principle as a calculation for safety or ergonomics. The equation for Partial Process' Ideality for ecology is

$$pPI_{ECO} = \frac{\sum activities\ without\ environmental\ impact}{\sum ecology\ risks} \tag{13}$$

The ideal state of the process in a way of ecology is when the process works without any environmental impact. In special cases, there could be also some benefits like positive environmental impact. Calculation of ecology risk is the same as

for safety and ergonomics risks and values from Table 1 could be used.

4 Results and Discussion

4.1 Final Process' Ideality equation

After all Partial Process' Ideality equations were defined, they can be taken together into one final Process' Ideality equation. From equation (4) we can define a new equation for Process' Ideality. When we put equations (7), (8), (9), (10), (12), and (13) into the equation (5). We can calculate a final Process' Ideality equation. This final equation looks in its general form like this

$$PI = \sum_{i=1}^6 pPI_i = \sum_{i=1}^6 \left(\frac{\sum_{j=1}^n B_j}{\sum_{k=1}^m H_k} \right)_i \tag{14}$$

Where PI is a degree of Process' Ideality, i are six main aspects of the process (time, quality, costs, safety, ergonomics, and ecology), n is a number of benefits for aspect i , j is a specific benefit, m is a number of harms for aspect i , and k is specific harm.

Process' Ideality can be used in many ways. For instance, when we calculate degrees of Process' Ideality for all processes in a company we can easily decide which process is best and worst. That can help to decide on which process we should focus our improvement efforts. Process' Ideality could be also used for comparison of the current and new improved state of the process. Or, based on Process' Ideality the best possible solution for

process' improvement could be chosen. Process' Ideality has advantages that include the main parameters of the process, decisions based on Process' Ideality are based on six process' parameters. The main difference is that instead of focusing only on technical parameters of the process as time, and quality, Process' Ideality also includes parameters as costs, safety, ergonomics, and ecology.

4.2 Application to a case study

A case study for a demonstration of the use of the Process' Ideality calculation was made. The process of glass-metal assemblies was chosen. Improvement of this process is described in [32]. Glass and metal parts and assemblies are packed in three ways which are depending on the properties of parts, mainly on

weight and size. For this demonstration, only one path of the process is considered. For each step, an average time for activity its cost, quality, safety, ergonomics, and ecology risk should be determined. Parameters of the process and its steps are described in the table Tab. 2 below. Symbol *X* in the table represents that its impossible or very hard to determinate a parameter for a specific activity in the process, so there must be a different way of how to calculate or determine desired values for that column. If we do not know a parameter value for steps, values can be determined for the whole process. For example, we do not need to sum ecology risks from all steps if we do not know these values we can determine an overall ecology risk for the whole process instead.

activity	category	time [min]	number of defects	costs [CZK]	safety risk	ergonomics risk	ecology risk
1 walk for parts	NVA	0.5	X	1.67	0.04	0.04	X
2 bring it to workplace	NVA	0.5	X	1.67	0.04	0.04	X
3 walk for box	NVA	1.0	X	3.33	0.04	0.04	X
4 bring it back	NVA	1.0	X	3.33	0.04	0.04	X
5 walk for packing mat.	NVA	1.0	X	3.33	0.04	0.04	X
6 bring it back	NVA	0.5	X	1.67	0.04	0.04	X
7 built the box	NVA	0.5	X	1.67	0.04	0.04	X
8 tape the box	NVA	0.5	X	1.67	0.04	0.04	X
9 packing	VA	5.5	X	18.33	0.08	0.6	X
10 documentation	NVA	0.5	X	1.67	OK	OK	X
11 close the box / tape it	NVA	0.5	X	1.67	0.04	0.04	X
12 bring it to strapping machine	NVA	0.5	X	1.67	0.04	0.4	X
13 strapping	NVA	1	X	3.33	0.04	OK	X
14 writing on box	NVA	0.5	X	1.67	OK	0.04	X
15 bring it to weighing-machine	NVA	0.5	X	1.67	0.04	0.4	X
16 weighing	NVA	1.0	X	3.33	OK	0.04	X
17 waiting for printing	NVA	1.0	X	3.33	OK	OK	X
18 stick information	NVA	2.0	X	6.67	OK	OK	X
19 bring the package on palette	NVA	2.0	X	6.67	0.04	0.04	X
20 fix it together	NVA	5.0	X	16.67	0.08	0.04	X

Tab. 2: Original state of the packing process

When information about the process is collected, the calculation of partial Idealities can begin. For calculation, equations for partial Process' Ideality from above are used. It is very hard to determine quality for every step, for our purposes a relative number of defects is enough. In our case, there are approximately 4 defects per 100 produced parts. Most appeared defect is broken glass part during packing or manipulation in process. From that, we can calculate Partial Process' Ideality for quality, where the number of OK pieces is 4, and the number of NOK pieces is then 96. For the determination of process' profits, average profit per package is needed. This value was determined as 20 [CZK] per package. Steps in this process have a relatively small environmental impact, but a number of several wastes should be included. In this case, Partial Process' Ideality for ecology is calculated for the whole process, wherein the numerator is 1 (as one whole process), and in the denominator is overall ecology risk from wastes, which was for this case determined as 0.04. Ecology risk of the process is quite low because in the process recyclable materials are used, and residual material could be used again and waste material is sorted for recycling. Results of Partial Process' Idealities for the original state are summarized in Table 4.

After the improvement, a new table with information about the process should be done. The process was mainly improved by the shortening of material and people flows [33]. As a result, the layout of the workshop was re-designed and several other improvements were applied. After improvement, there is much shorter walking, most of the materials are stored on the packing workshop, so several movements and walks were eliminated. For better ergonomics packing tables were bought. These tables allow to set optimal packing height for each worker, and it also allows to transport packages to the next operation. When the process is improved, the collection of information about the new state of the process could be done again. The procedure of collecting the information should be the same as for the original state. Several activities were eliminated and other activities had shorter lead time, or its ergonomics risk is lower

Collected information about the improved process is summed in Table 3.

activity	category	time [min]	number of defects	costs [CZK]	safety risk	ergonomics risk	ecology risk
1 walk for parts	NVA	0.5	X	1.67	0.04	0.04	X
2 bring it to workplace	NVA	0.5	X	1.67	0.04	0.04	X
3 built the box	NVA	0.5	X	1.67	0.04	0.04	X
4 tape the box	NVA	0.5	X	1.67	0.04	0.04	X
5 packing	VA	5.5	X	18.33	0.08	0.08	X
6 documentation	NVA	0.5	X	1.67	OK	OK	X
7 close the box / tape it	NVA	0.5	X	1.67	0.04	0.04	X

8	bring it to strapping machine	NVA	0.5	X	1.67	0.04	OK	X
9	strapping	NVA	1	X	3.33	0.04	OK	X
10	writing on box	NVA	0.5	X	1.67	OK	0.04	X
11	bring it to weighing-machine	NVA	0.5	X	1.67	0.04	0.4	X
12	weighing	NVA	1.0	X	3.33	OK	0.04	X
13	waiting for printing	NVA	1.0	X	3.33	OK	OK	X
14	stick information	NVA	2.0	X	6.67	OK	OK	X
15	bring the package on palette	NVA	2.0	X	6.67	0.04	0.04	X
16	fix it together	NVA	5.0	X	16.67	0.08	0.04	X

Tab. 3: Improved state of the packing process

Same way as for original state, partial Process' Idealities were calculated and summed for a new degree of Process' Ideality, results are in Table 4.

process' state	time (pPI _T)	quality (pPI _Q)	costs (pPI _C)	safety (pPI _S)	ergonomics (pPI _{ERG})	ecology (pPI _{ECO})	Process' Ideality
original	0.275	24.000	0.235	7.353	2.604	25.000	59.467
improved	0.333	24.000	0.273	9.615	13.636	25.000	72.858

Tab. 4: Comparison of the original and improved state of the packing process

As can be seen, partial Idealities can also serve as an indicator, of what factor we should focus on in our improvement efforts. In the original state, time, costs, and ergonomics are the worst factors. Improvement is most significant on ergonomics but the main point of improvement was on time. If the Ideality concept would be used, the improvement of the process could be achieved in all aspects of Ideality.

4.1 Limitations

Calculation of some parameters from real processes could be a challenging and time-consuming task. That is why there is a possibility to make some simplifications for complex processes. The main point should be to do the calculation with the same rules for the current state and also for all other states for comparison.

From a case study, there was shown that quality, for example, can be calculated for the whole process not only as a sum of defects for each step. The same is with the ecology of the process, sometimes there is hard to determine parameters for each step, overall determination for the whole process is then possible.

These equations and procedures are not the bulletproof methods of how we should determine an Ideality degree of processes. They should help us with the calculation of Process' Ideality in real processes because original equations are too theoretical. They should also help us to focus on all aspects of the process and achieve better and more complex improvements.

Determination of values for specific parameters could be described in a more detailed way, but that is out of the frame of this paper.

4 Conclusion

As it was seen before, Ideality can be a good way how to achieve better results in attempts for process' improvement. For manufacturing processes, it is hard to determine the degree of Ideality by standard equation from TRIZ. That is why a new model for Ideality calculation especially for processes was made. This Equation includes parameters as process time, quality, costs, but also safety, ergonomics, and ecology of the process. That allows us to use only one parameter – the degree of Ideality to determine a state of the current process, or to compare it with a new proposal for process' improvements. This method also pushes us to focus, not only on parameters connected with time and cost, but also on parameters connected to safety, health, and environment which is nowadays more and more needed. Partial Process' Idealities can also help us to focus our improvement efforts mainly on one or several worst aspects of the process.

Table 4 below compares the original and improved process in a way of partial, and overall Process Idealities.

By focusing on Process' Ideality, better results on process' improvement could be achieved. Shorter time of production, fewer defects, lower costs, better safety, better ergonomics, and lower environmental impact of the processes will positively affect the economic state of the company.

Literature:

- Voehl, F.: Harrington HJ, Mignosa C, Charron R. *The lean six sigma black belt handbook: tools and methods for process acceleration*. Boca Raton, FL: CRC Press; 2014, 587 p
- Samanta, M.: *Lean problem solving and QC tools for industrial engineers*. First edition. New York, NY: Taylor & Francis Group; 2019.
- Farber, S.: *A 70-Year Study of More Than 3 Million Patents Reveals These Simple Steps to Problem Solving* [online]. Inc.com. 2017 Retrieved from: <https://www.inc.com/steve-farber/a-70-year-study-of-more-than-3-million-patents-reveals-these-simple-steps-to-problem-solving.html>
- Domb, E.: *The Ideal Final Result: Tutorial* [online]. The TRIZ Journal. 1997 Retrieved from: <https://triz-journal.com/ideal-final-result-tutorial/>
- Domb, E.: *Using the Ideal Final Result to Define the Problem to Be Solved* [online]. The Triz Journal. 1998 Retrieved from: <https://triz-journal.com/using-ideal-final-result-define-problem-solved/>
- Belski, I.: *I Wish the Work to be Completed by Itself, Without my Involvement: The Method of the Ideal Result in Engineering Problem Solving*. In: Proceedings of the World Innovation and Strategy Conference. Sydney Australia; 1998. p. 194-199.
- Belski, I.: *Solving problems with Method of the Ideal Result (MIR)*. In: Transactions from the 11th Symposium on Quality Function Deployment The 11th Symposium on Quality Function Deployment. Michigan, USA; 1999.
- Duepen, E.: *Ideality and the Artist* [online]. The Triz Journal. 2004 Retrieved from: <https://triz-journal.com/ideality-artist/>
- Bhushan, N.: *Ideality, TRIZ and Software Design – Case Study: Software Product for Identity Security*. In 2008.
- Navas, H.V.G.: *Problem Solving and Increase of Ideality of Complex Systems*. In: Kahlen F-J, Flumerfelt S, Alves A.; Transdisciplinary Perspectives on Complex Systems: New Findings and Approaches. Springer International Publishing; 2017 p. 305-27. DOI: 10.1007/978-3-319-38756-7_11
- Soderlin, P.: *Thoughts on Value and Ideality, Is the Concept of Ideality „Scientific“?* [online]. The Triz Journal. 2003 Retrieved from: <https://triz-journal.com/thoughts-value-ideality-concept-ideality-scientific/>
- Mann, D.: *Ideality and „Self-X“ - Part 1: Things That Do Things For Themselves* [online]. The Triz Journal. Retrieved from: <https://triz-journal.com/ideality-self-x-part-1-things-things/>
- Mann, D.: *IDEALITY AND 'SELF-X' - Part 2: Meals, Wheels, and Carpet Slippers - Technical Case Studies* [online].

The Triz Journal. 2003 Retrieved from: <https://triz-journal.com/ideality-self-x-part-2-meals-wheels-carpet-slippers-technical-case-studies/>

14. Mann. D.: *IDEALITY AND 'SELF-X' - Part 3: Business Context and Case Studies* [online]. The Triz Journal. 2003 Retrieved from: <https://triz-journal.com/ideality-self-x-part-3-business-context-case-studies/>

15. Domb. E.: *Ideality and Idealized Design* [online]. The Triz Journal. 2007 Retrieved from: <https://triz-journal.com/ideality-and-idealized-design/>

16. Dai. Q-H., Ma. X-K.: *The New Method to Define Ideality on Triz*. In: Proceedings of 2012 3rd International Asia Conference on Industrial Engineering and Management Innovation, IEMI 2012. 2013. p. 527–37.

17. Slocum. M., Lundberg. C., Walter. K.: *Reangularity, Semangularity, and Ideality* [online]. The Triz Journal. 2003 Retrieved from: <https://triz-journal.com/reangularity-semangularity-ideality/>

18. Shpakovsky. N., Lenyashin. V., Novitskaya. E.: *The second TRIZ formula* [online]. 2012 Retrieved from: <http://www.gnrtr.com/Generator.html?pi=311&cp=3>

19. Mishra. U.: *Introduction to the Concept of Ideality in TRIZ* [online]. Rochester, NY: Social Science Research Network; 2013 Retrieved from: <https://papers.ssrn.com/abstract=2273178>

20. Petrov. V., Seredinski. A.: *Progress and Ideality* [online]. The Triz Journal. 2006 Retrieved from: <https://triz-journal.com/progress-ideality/>

21. Mishra. U.: *The Ideal IFR is No IFR: Criticism to the TRIZ Concept of Ideality* [online]. Rochester, NY: Social Science Research Network; 2013 Retrieved from: <https://papers.ssrn.com/abstract=2282002>

22. Lyubomirskiy. A.: *Ideality Equation*. In: Proceedings of the TRIZfest 2013. 2013.

23. Krafcik. J. F.: *Triumph of the Lean Production System*. Sloan Management Review. 30(1):41–52.

24. Womack. J. P., Jones. D. T., Roos. D.: *The machine that changed the world: how Japan's secret weapon in the global auto wars will revolutionize western industry*. 1st HarperPerennial ed. New York, NY: HarperPerennial; 1991. 323 p.

25. Liker J. K.: *The Toyota way: 14 management principles from the world's greatest manufacturer*. New York: McGraw-Hill; 2004. 330 p.

26. Liker. J. K., Morgan. J. M.: *The Toyota Way in Services: The Case of Lean Product Development*. AMP. 2006;20(2) p. 5–20.

27. Ohno. T.: *Toyota production system: beyond large-scale production*. Cambridge, Mass: Productivity Press; 1988. 143 p.

28. Alves. A. C., Ferreira. A. C., Costa Maia. L., P. Leão. C., Carneiro. P.: *A symbiotic relationship between Lean Production and Ergonomics: insights from Industrial Engineering final year projects*. International Journal of Industrial Engineering and Management. 2019;10(4):243–56.

29. Alves. A. C., Kahlen. F-J., Flumerfelt. S., Siriban-Manalang A. B.: *Lean Engineering for Global Development* Springer International Publishing; 2019. <http://link.springer.com/10.1007/978-3-030-13515-7>

30. Alves. A. C., Sousa. P., Navas. H.: *Lean and TRIZ: From the Problems to Creative and Sustainable Solutions*. In: Rossi M, Rossini M, Terzi S, editori. Proceedings of the 6th European Lean Educator Conference Springer International Publishing; 2020 p. 103–16. http://link.springer.com/10.1007/978-3-030-41429-0_11

31. Womack. J. P., Jones. D. T.: *Lean thinking: banish waste and create wealth in your corporation*. New York, NY: Simon & Schuster; 1996. 350 p.

32. Sojka. V.: *Design of the packing workplaces* [master's thesis]. Liberec: Technical University of Liberec; 2018.

33. Sojka. V., Lepšík. P.: *Re-layout of Workshop Based on Material and People Flows*. In: DOKBAT 2019 - 15th International Bata Conference for PhD Students and Young Researchers. Tomas Bata University in Zlín; 2019. p. 955–61. Retrieved from: http://dokbat.utb.cz/wp-content/uploads/2020/01/DOKBAT_2019_Conference_Proceedings.pdf

Primary Paper Section: J

Secondary Paper Section: JP, JS, JQ

CONSTRUCTION-TECHNICAL SPECIFICS OF A PREFABRICATED WOOD CONSTRUCTION SYSTEM

^aJOZEF ŠVAJLENKA, ^bMÁRIA KOZLOVSKÁ

*Technical University of Košice, Faculty of Civil Engineering,
Department of Construction Technology and Management
Vysokoškolská 4, Košice, Slovak republic
email: ^ajozef.svajlenka@tuke.sk, ^bmaria.kozlovska@tuke.sk*

The article presents a partial research result of the VEGA project-1/0557/18 "Research and development of process and product innovations of modern methods of construction in the context of the Industry 4.0 principles".

Abstract: Wood as a raw material and material in the construction of wooden buildings has an irreplaceable position in terms of the complex of mechanical, thermal-technical, aesthetic, utility, technological properties and the impact on the environment. In many countries of our region, it is a strategic, yet renewable raw material, which brings considerable profits to national economies, especially where it is comprehensively processed in products with high added value. Today's wood-based construction methods are very diverse and can be individually adapted and combined. Current wooden buildings intended for housing can in principle be divided according to the character and nature of vertical load-bearing structures into massive, skeletal and elementally constructed elements composed of individual elements. From the point of view of the efficiency of the construction process, an effective solution is especially construction systems that use elements of automation and prefabrication of structural elements of the construction site. The production process of prefabricated components is diverse depending on the specific manufacturer of the individual components. Pre-prepared structural elements and parts of structures more or less finalized are then transported to the construction site where they are assembled into the final form. In connection with prefabricated construction systems for the construction of wood-based structures, it is necessary to analyze their production process where it is possible to identify significant reserves and propose improvements to streamline the production process. From this point of view, in this paper we focused on the analysis of the production processes of a prefabricated wood-based construction system.

Keywords: construction, efficiency, sustainability, prefabrication, realisation, wood, wood buildings

1 Introduction

In the context of our region, wood is perceived as a historical building material. The traditional use of wood in Central Europe and Slovakia is due to historical development, as it is an available raw material and the construction of family houses made of wood has undergone an evolutionary development with many years of experience in addition to traditional carpentry craftsmanship. This is evidenced by the number of preserved historic buildings, as well as pioneering buildings in the 20th century. In many countries of our region, it is a strategic, yet renewable raw material, which brings considerable profits to national economies, especially where it is comprehensively processed in products with high added value [1,2]. There were positive responses from investors and architects, but also controversial views influenced by mostly surviving empirical knowledge from the era [3], when wooden buildings were perceived as temporary buildings with low demands on functional requirements. The fact remains that the current level of construction of wood, technology, design and material possibilities has moved wooden buildings to a completely different dimension and, on the contrary, as before, they are beginning to become the prerogative of a richer and more demanding clientele. The return to wooden architecture is not only an expression of the search for original values in today's volatile times [4-6]. Man, exposed to the onslaught of an over-technological civilization, is extremely sensitive to any contact with nature and natural material [7,8]. The comfort and atmosphere connected with nature are undoubtedly provided by wooden buildings [9].

Today's wood-based construction methods are very diverse and can be individually adapted and combined. Current wooden buildings intended for housing can in principle be divided according to the character and nature of vertical load-bearing structures into massive, skeletal and elementary structures composed of individual elements [10,11]. The individual groups differ considerably from each other by the construction method used, the appearance and the possibilities of production of their structural elements. The basis of massive buildings are log buildings realized to this day, but at present modern massive

buildings have been added to them. Groups of skeletal and elementary structures have evolved from half-timbered structures and represent a structure of bar elements [12]. In addition to the classic wooden construction methods, the so-called hybrid methods developed in recent years that combine wood as a building material with other building materials [13-15].

2 Panel construction of wooden prefabricated building structures

At present, the panel building system for wood-based buildings is the most widespread. The basis of the panel construction is a wooden frame roughly clad with suitable large-area materials. The wooden frame of the panel is structurally adapted with respect to the function it performs - perimeter, partition, ceiling, roof, floor. The construction and dimensions of the frame are adapted to the different function. The space between the ribs is filled with heat-sound insulation. Particleboard, OSB board, gypsum fiber board, cement-bonded particle board and the like are used for the cladding. Assembly is quick and easy. The construction of a building from a panel system is relatively fast due to the fact that during the construction there is no wet process that would require a technological break [16,17].

The panels can be manufactured with many degrees of finishing, from thick frames clad on one side with large-area material to panels with built-in windows and doors and panels with finished interior and exterior finishing and with built-in wiring. The main advantage of the construction of the panel system is the possibility of maximum preparation of the construction in production and quick assembly and completion of the construction on the construction site. The panels can also be of various sizes - from panels measuring 1,200 × 2,600 mm with a weight of up to 80 kg, which do not require heavy mechanization, to full-wall panels up to 12 m long, which require heavy mechanization for transport and assembly [18]. During assembly, it is important to connect the panels correctly to each other, but also to anchor the panels to the foundation structure.

2.1 Technological analysis of prefabricated wooden buildings

The next chapter deals with the production of a panel wooden building, construction and energy design.

2.1.1 Phase of production of components of a panel wooden building

The key moment of this construction system is the elements of prefabrication in the production of individual components and structural parts of the building system. Prefabrication of wooden buildings is performed in several stages and in different systems [19]. These are either small modular panels of a wooden building not exceeding the weight of 80 kg, or classic wall panels, which are the most commonly used alternative. It is possible to create whole load-bearing and non-load-bearing walls, ceilings, floors and roofs from them [20]. The largest dimensions of the panels are optimized with regard to the method of transport and the construction site.

The production of prefabricated wooden building panels takes place on an assembly table. The completed panel is tilted to allow double-sided laying of construction boards and other materials used. A threshold is placed in the lower and upper part (in the lower part it is impregnated), between the thresholds there are vertical columns placed in a regular grid, which are anchored to the threshold by means of metal connecting corrugations or nails. The resulting wooden frame is covered with a construction board. Thanks to the choice of the right, the joints of the individual boards come out right in the middle of the vertical columns. The resulting solid wound of the wooden structure is flipped to the other side, the required layer of insulating material

is inserted between the individual columns. Then the selected material is folded again. The procedure is repeated. The distribution of engineering networks is also inserted into the prefabricated wooden building created in this way. The resulting product is placed vertically by installed construction carpentry products. In the case of the perimeter walls of a wooden building, the plaster is finally finished depending on the degree of finalization of individual components [21,22].

2.1.2 The phase of transport of components and the phase of implementation of a panel wooden building

Finished panels for prefabricated wooden buildings are shipped to the truck during shipment so that their arrangement corresponds to the subsequent procedure of building a wooden building. At the construction site, the panels are placed on a base plate using heavy machinery. The anchoring of the panels of the perimeter walls of prefabricated wooden buildings is first realized in the corners, in the places of their joints where the panels are pulled towards each other. We anchor most often with screws in predetermined places. Subsequently, the panel is fixed to the base plate with metal angles from the inside of the wall. The procedure with panels of internal partitions is similar [23]. Prefabricated ceilings are placed on such a complete block and fastened to the lower part of the building with screws. In the case of a multi-storey wooden building, a prefabricated staircase is inserted into the house and is also anchored to the walls and ceiling with metal connecting materials. The whole house is covered by a truss structure, which is also prefabricated. The prefabricated construction is completed by laying and anchoring the roof panels and the final laying of the roof covering [24-26]. Also, depending on the finalization stage of the individual panels, the finishing work on the construction site is carried out in direct proportion.

2.2 Production stages of preparation and prefabrication of wooden buildings

The different stages of production or prefabrication of wooden structures determine the extent to which the structural elements will be prepared in advance and in what condition they will leave the production plant for subsequent assembly on the construction site. Whereas in the past loose and unprocessed building elements were delivered to the construction site, today they are flat construction elements (elements). In these planar elements, the first stage of prefabrication of timber structures begins by comprising parts of the supporting structure and at least one layer of cladding. The wooden structure defined in this way is pre-assembled into a flat element, adjusted in height and width according to the required dimensions, including the preparation of openings for windows and doors. In the third stage, an insulating material is inserted between the structural elements and the elements are clad on both sides with OSB boards or gypsum fiber boards. The intermediate stage consists of the insertion of adapters for technical installations. The incorporation of windows and doors into flat elements is another stage of prefabrication. A high degree of prefabrication of wooden buildings can also be achieved if the façade is also installed in the production plant and, if necessary, the internal wall cladding is also installed [27,28]. Today's production is so far that they also carry out surface treatment in the plant. This is possible, but only under conditions of perfect protection of structural elements during transport, assembly, until the work is sold to the user. How far prefabrication is suitable in a plant depends on the specified construction system of the timber structure and the technology available in the design, manufacture, transport and assembly. It is also necessary to take into account the aspect of pollution or the risk of damage to the elements. Raw unmachined building elements are less vulnerable to climatic influences such as moisture, rain or UV radiation. In contrast, finished elements require better protection. Such complex elements are particularly susceptible to interventions by subsequent crafts. The number of elements between the design stages is innumerable and thus gives considerable potential for individual solutions [29]. The rationalization and industrialization of the construction industry encourages the

development of work with larger building elements [30]. The main advantage is seen primarily in the relocation of the production process from the construction site to the production hall, independent of the weather conditions affecting the quality of the final work. Production in the workshop and factory brings additional benefits. It is possible to work better in a plant than on a construction site. Individual building elements, such as windows and doors, are directly built into larger or smaller large-area assemblies [31]. This ultimately leads to higher quality, provided the professional design and thoughtful course of construction, the resulting construction.

2.2.1 Areas of application of prefabrication of wooden buildings

Construction using panels with a load-bearing or non-load-bearing function is suitable for a myriad of construction tasks. Prefabricated components are used especially when fast implementation is required, due to the low weight of building components, low transport and assembly costs. Buildings can be designed and implemented as temporary or permanent. Demountable and relocatable space cells can be advantageously used for the construction of office buildings and the like [32,33]. In this case, in particular, an easy response to the time-limited scope of implementation is shown. At the beginning of their era, these applications were a temporary solution with a limited lifespan. Gradually, they evolved into this form. The industrial production of small or large elements, even whole spatial cells, is constantly being improved. The structural elements are transported to the construction site as a whole, including installations and often also with interior surface treatments.

2.3 Constructional design of a panel wooden building

In the subchapters I will deal specifically with the diffusely open structure and the diffusely closed structure, their basic properties and the differences between them.

2.3.1 Diffuse open construction

For the construction of wooden houses, which are formed by diffusely open structures, a functional physical quantity-diffusion is typical. It is a mechanism that is able to constantly transport molecules in different intensities through the wall in both directions. This process is often called the "ability of the wall to breathe." Diffusion alone does not bring anything new and beneficial. But by understanding its principles, returning to nature, it is possible to make the "diffusion" of a helper by the right choice and stamping of materials, which helps to ensure long life of buildings with above-standard wall parameters and healthy indoor home environment [34]. In order for this mechanism to bring advantages, it is absolutely necessary to ensure the exact arrangement of precisely defined materials into the wooden structure, otherwise diffusion methods rather problems and complications. Properly dimensioned element or construction system based on diffusely open construction for these reasons offers a safe composition of the wall verified by calculations, exact tests in laboratories, where the composition of individual layers was verified. The main principle of the wall is a vapor barrier layer, which is formed by quality OSB boards. Their joints must be glued and vapor-sealed with high-quality sealing material [35,36]. It is important to ensure that the vapor barrier layer is not damaged by installations in the house, therefore it uses installation walls for wooden buildings with a diffusely open construction. Another material is a special fine mineral insulation inserted between the wooden KVH profiles of the structure. The diffusion open system uses insulations without the chemical additives of formaldehyde or phenol. The last and thus the most important material in the composition is wood fiber insulation, which ensures the final transport of water molecules and evaporation to the exterior [10]. At the same time, the façade carrier is an excellent sound insulator and also an element slowing down the heat flow through the wall in the summer months.

Characteristic properties of diffusely open structures

This solution is a mechanism that transports moisture through the walls in different intensities in both directions. This is the so-called ability of the wall to breathe.

- vapor barriers or other foils are not used
- very effective in preventing heat leakage
- allows the passage of water vapor
- are impermeable to water as a liquid
- balance humidity in interiors
- provide good sound-insulating properties of buildings
- ensure very good fire resistance
- increase the air quality in the interior in a natural way
- they are fully organic
- constructions dry in the winter
- ability to regenerate in case of excessive wetting
- simple construction (fewer layers).

2.3.2 Diffusively closed construction

Diffusively closed construction of a wooden building is fully used for almost all construction systems of a wooden building, low-energy and passive wooden buildings. The principle of functionality of this closed composition depends on the materials used, especially on the selected vapor barrier, which should be suitably placed as close as possible to the interior. For wooden buildings on the principle of diffusion-closed construction, a vapor-tight foil is used, which has a very high diffusion resistance [37,38]. The correct functionality of the vapor barrier is ensured only if an impermeable house envelope is created without broken places, without joints and with sealing even the most complicated details. For these reasons, high-quality adhesive and sealing material is used for construction systems based on this principle, which ensures perfect properties throughout the life of the house. It is also important to mention the installation wall, which is used to guide all wiring (electrical installation, plumbing, heating, etc.). And which is a guarantee of the integrity of the vapor barrier, even after the installation of these wiring. Several principles must be observed when installing the vapor barrier: the vapor barrier film must be glued at the joints, it must not be broken anywhere and it must not be missing anywhere [39]. If the vapor barrier is of high quality and professionally made, the foil will not let water in any state and thus no moisture will penetrate into the structure. From the exterior, the wooden structure is covered with gypsum fiber boards and the cladding itself is solved with facade polystyrene. With its properties, it ensures that even if internal moisture penetrates into the composition of the wall, the structure will not get wet. All moisture is therefore retained in the living space of the interior and the construction of the wooden building is completely free of moisture. The amount of moisture in the interior must be removed from the building by means of ventilation, a fume hood or a fireplace. A suitable solution is to use controlled ventilation with recuperation or forced ventilation.

3 Conclusion

In accordance with the trend of streamlining processes in construction, the topic of this presented work deals with a prefabricated construction system which is popularly used in the implementation of modern wooden buildings. The introduction of the article specifies the basic context concerning a prefabricated construction system based on sandwich panels. In the following parts of the article, the technological, design but also production aspects of the analyzed design system are analyzed in more detail. As pointed out in this paper, a construction system based on prefabricated sandwich panels offers a number of advantages resulting in particular from the use of prefabrication elements and the pre-preparation of individual components and structural elements. The production process is basically dependent on the specific manufacturer and the technology used, but certain elements are common, as we stated in the analyzed parts of the article. The diversity of production processes raises a number of issues that can be explored and optimized the production process. For this reason,

we intend to address this issue in the future and deepen our knowledge in this area of research.

Literature:

1. Hurmekoski, E., Jonsson, R., Nord, T. (2015). Context, drivers, and future potential for wood-frame multi-story construction in Europe. *Technological forecasting and social change*, 99, 181-196.
2. Antošová, N., Belániová, B., Chamulová, B., Janušová, K., Takács, J. 2019, "The protection of environment during cleaning ETICS with biocides", *Advances and Trends in Engineering Sciences and Technologies III- Proceedings of the 3rd International Conference on Engineering Sciences and Technologies, ESaT 2018*, pp. 281.
3. Zgútová, K., Decký, M., Šrámek, J., Drevený, I. (2015). Using of alternative methods at earthworks quality control. *Procedia Earth and Planetary Science*, 15, 263-270.
4. Hildebrandt, J., Hagemann, N., Thrän, D. (2017). The contribution of wood-based construction materials for leveraging a low carbon building sector in Europe. *Sustainable cities and society*, 34, 405-418.
5. Bragança, L., Mateus, R., Koukkari, H. *Building Sustainability Assessment. Sustainability* 2010, 2, 2010-2023, DOI: 10.3390/su2072010.
6. Korytářová, J., Hanák, T., Kozik, R., Radziszewska-Zielina, E. (2015). Exploring the contractors' qualification process in public works contracts. *Procedia Engineering*, 123, 276-283.
7. Kaplan, J. O., Krumhardt, K. M., Zimmermann, N. (2009). The prehistoric and preindustrial deforestation of Europe. *Quaternary Science Reviews*, 28(27-28), 3016-3034.
8. Gašparík, J., Szalayová, S., Alamro, B., Gašparík, M. 2019, "Optimization method of elevator selection for the realization of construction processes", *Advances and Trends in Engineering Sciences and Technologies III- Proceedings of the 3rd International Conference on Engineering Sciences and Technologies, ESaT 2018*, pp. 369.
9. Pifko, H. *NEED – Navrhovanie energeticky efektívnych domov*. Vydavateľstvo Eurostav, Bratislava, 2017.
10. Ramage, M. H., Burrige, H., Busse-Wicher, M., Fereday, G., Reynolds, T., Shah, D. U., Allwood, J. (2017). The wood from the trees: The use of timber in construction. *Renewable and Sustainable Energy Reviews*, 68, 333-359.
11. Allen, E., Iano, J. (2019). *Fundamentals of building construction: materials and methods*. John Wiley & Sons.
12. Vaverka, Jiří: *Dřevostavby pro bydlení*. 1. vydanie. Praha: Grada, 2008. 376 s. ISBN 978-80-247-2205-4
13. Ho, T. X., Dao, T. N., Aaleti, S., Van De Lindt, J. W., Rammer, D. R. (2017). Hybrid system of unbonded post-tensioned CLT panels and light-frame wood shear walls. *Journal of Structural Engineering*, 143(2), 04016171.
14. Bederka, M., Makýš, P., Ďubek, M., Petro, M. 2019, "Cement screeds—selected methods of humidity measurement", *Advances and Trends in Engineering Sciences and Technologies III- Proceedings of the 3rd International Conference on Engineering Sciences and Technologies, ESaT 2018*, pp. 299.
15. Gregorová, V., Ďubek, M., Ďubek, S., Štiefunková, Z. 2019, "An experimental preparation of fibre concrete to software's detection of fibres", *IOP Conference Series: Materials Science and Engineering*.
16. Smith, R.E., Timberlake, J. *Prefab Architecture: A Guide to Modular Design and Construction*. John Wiley & Sons: Hoboken, NJ, 2011, USA. ISBN 978-0-470-27561-0.
17. Kaputa, V., Olšiaková, M., Maťová, H., Drlíčková, E. 2019, "Do preferences for wood-framed houses' attributes change over time?", *Digitalisation and Circular Economy: Forestry and Forestry Based Industry Implications - Proceedings of Scientific Papers*, pp. 161.
18. Burwood, S., Jess, P. *Modern Methods of Construction Evolution or Revolution? A BURA Steering and Development Forum Report*. American Research Institute for Policy Development: New York, NY, USA, 2005, Available online: <https://lnk.sk/zyw8>.
19. Tumminia, G., Guarino, F., Longo, S., Ferraro, M., Cellura, M., Antonucci, V. (2018). Life cycle energy performances and

- environmental impacts of a prefabricated building module. *Renewable and Sustainable Energy Reviews*, 92, 272-283.
20. Wall, H. (2008). U.S. Patent No. 7,467,469. Washington, DC: U.S. Patent and Trademark Office.
21. Gann, D. M. (1996). Construction as a manufacturing process? Similarities and differences between industrialized housing and car production in Japan. *Construction Management & Economics*, 14(5), 437-450.
22. Bílek, V. *Dřevostavby: navrhování dřevěných vícepodlažních budov*. 1. vydanie. Praha: ČVUT, 2005, 251 s. ISBN 80-010-3159-4.
23. Štefko, J., Reinprecht, L., Kuklík, P. *Dřevěné stavby: konstrukce, ochrana a údržba*. 2. české vyd. Bratislava: JAGA, 2009, 204s. ISBN 978-80-8076-080-9.
24. Kobl, J. *Dřevostavby: Systémy nosných konstrukcí, obvodové pláště*. Praha: Grada, 2011, 320s. ISBN 978-80-247-4071-3.
25. Hong, J., Shen, G. Q., Mao, C., Li, Z., Li, K. (2016). Life-cycle energy analysis of prefabricated building components: an input-output-based hybrid model. *Journal of cleaner production*, 112, 2198-2207.
26. Kolb, J. (2008). *Systems in timber engineering: loadbearing structures and component layers*. Walter de Gruyter.
27. Sandberg, M., Johnsson, H., Larsson, T. (2008). Knowledge-based engineering in construction-the prefabricated timber housing case. *Journal of Information Technology in Construction (ITcon)*, 13, 408-420.
28. Larsen, K. E., Lattke, F., Ott, S., Winter, S. (2011). Surveying and digital workflow in energy performance retrofit projects using prefabricated elements. *Automation in construction*, 20(8), 999-1011.
29. Warszawski, A. (2003). *Industrialized and automated building systems: A managerial approach*. Routledge.
30. Luo, Y., Riley, D. R., Horman, M. J. (2005). Lean principles for pre-fabrication in green design-build (GDB) projects. In 13th International Group for Lean Construction Conference: Proceedings (p. 539). International Group on Lean Construction.
31. Winter IV, A. G. (1994). U.S. Patent No. 5,373,674. Washington, DC: U.S. Patent and Trademark Office.
32. Kamar, A. M., Hamid, Z. A., Azman, N. A. (2011). Industrialized building system (IBS): Revisiting issues of definition and classification. *International journal of emerging sciences*, 1(2), 120.
33. Linner, T., Bock, T. (2012). Evolution of large-scale industrialisation and service innovation in Japanese prefabrication industry. *Construction Innovation*.
34. Qin, Y., Liang, J., Tan, K., Li, F. (2016). A side by side comparison of the cooling effect of building blocks with retro-reflective and diffuse-reflective walls. *Solar Energy*, 133, 172-179.
35. Havířová, Z., Kubů, P. (2006). Reliability and service life of constructions and buildings of wood. *Wood Research*, 51(2), 15-28.
36. Kamenický, L., Palko, M., Puškár, A. (2014). Diffuse Characteristics of Window Frame Gasket System. In *Advanced Materials Research (Vol. 855, pp. 134-137)*. Trans Tech Publications Ltd.
37. Tereňová, L., Krajčovičová, J. (2014). How structure of materials influences the fire resistance of the wooden panel house construction. *Advances in Fire, Safety and Security Research 2014 i Editors note*, 58.
38. Zwerger, K. (2012). *Wood and wood joints: building traditions of Europe, Japan and China*. Walter de Gruyter.
39. Yu, T., Heiselberg, P., Lei, B., Pomianowski, M., Zhang, C., Jensen, R. (2015). Experimental investigation of cooling performance of a novel HVAC system combining natural ventilation with diffuse ceiling inlet and TABS. *Energy and Buildings*, 105, 165-177.

Primary Paper Section: J

Secondary Paper Section: JN



PAPERS PUBLISHED IN THE JOURNAL EXPRESS THE VIEWPOINTS OF INDEPENDENT AUTHORS.
