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## J INDUSTRY

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## **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

## READINESS OF PEDAGOGICAL UNIVERSITY STUDENTS FOR VOLUNTEERING WORK WITH MENTALLY RETARDED CHILDREN HAVING AUTISM SPECTRUM DISORDERS

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**Abstract:** The paper presents the results of studying readiness of pedagogical university students for volunteering work with mentally retarded children having autism spectrum disorders (ASD); the phenomenon of the said work can be detailed via psychological and activity-based competency constituents, with their formation levels specified. Reasons behind the fact that students' professional competencies and personal qualities potentially characterize their readiness for volunteering work with mentally retarded ASD children are discussed, too. However, for stimulating the development of some of the competencies – the communicative, labor, and personal ones, – the readiness under study needs focused psychological and pedagogical support.

**Keywords:** students, pedagogical higher educational institution, volunteering, mentally retarded children with autism spectrum disorders.

### 1 Introduction

The phenomenon of volunteering as a means for solving diverse problems of the society has been the subject of Russian and foreign studies in philosophy, law, sociology, economics, psychology, and pedagogy. Each domain of science defines volunteering as applied to its subject of research, focusing on individual aspects of this phenomenon.

Within the context of philosophy, the understanding of the essence and content of volunteering was identified with the good and virtue in some concepts, with mercy and altruism in others, with humanism in yet others, and with individual well-being in yet other concepts. Philosophers defined volunteering as an immaterial sphere of individual being based on the ideas of morals, spirituality, and morality that were characteristic for the society of a particular period of history, where the key questions were those of subjective perception of life and spiritual harmony (Shcherbakova, 2012).

According to Russian law, voluntary (volunteering) activity is deemed to mean voluntary work activity in the form of gratuitous performance of works and (or) rendering of services for the purposes specified in the Federal Law "On Charity Activity and Voluntary Work (Volunteering)" (1995), among them for "social support and protection of citizens, including... social rehabilitation of the unemployed, persons with disabilities, and other persons who due to their physical, intellectual particularities, or other circumstances are unable to exercise their rights and legal interests independently" (2018).

In the context of history, volunteering is characterized as voluntary, socially important activity of people, regardless of their age, race, sex, and confession, within measures aimed at resolving social, cultural, economic, and environmental problems in the society without making profit (Tarasova, 2012).

In the study of incentives and motives of voluntary work activity and at various levels (macro-, meso-, and microlevels), social service embodied in the shape of volunteering activity, alongside its various contexts – the economic one, the psychological, cultural, organizational, social and demographic, institutional, and individual ones – is characterized as a sufficiently explored phenomenon (Gruver, 2017). Voluntary work is defined as an efficient method for integrating efforts and resources of both the society and the state in completing social tasks, mobilizing social initiative, social consolidation of the public. It is also a method

for improving the efficiency of social policy and, in general, achieving the well-being of the society. The following criteria are suggested for differentiating the kinds of volunteering initiative proceeding from: the fact of time consumption (on a regular, periodical, seasonal, occasional basis), the place of work (local, national, and international volunteering), age group, legal status (formal and informal), and domains of the said work (Bodrenkova, 2014).

The Government of the Russian Federation rates promotion of the development and propagation of voluntary work activity (volunteering) as one of the priority lines of the state social and youth policy. Special attention is paid to the following kinds of voluntary work: volunteers of the Victory, volunteering in emergency situations, social, event, medical, cultural, and educational volunteering, senior age volunteers, corporate, environmental volunteering, and volunteering at educational organizations (Martyanova, 2019). Pedagogical volunteering is singled out as an individual kind defined as the interaction of teachers and voluntary workers with representatives of the rising generation needing integrated assistance in solving the problems of personal establishment and self-development (Akimova, 2006). Researchers substantiate pedagogical volunteering as an independent kind of voluntary work activity performed by young students (Lyashenko & Lebedeva, 2017).

At pedagogical higher educational institutions, volunteer movement covers at least two key tasks: on the one hand, it optimizes the very process of professional training and personal development of students; on the other hand, it enhances the educational institutions' social and educational capacities.

In the present-day Russia, there is a social demand for volunteering work with persons having health limitations (HL) and disabilities. The federal statutory acts specify the necessity of organizing volunteer movement as a form of rendering personal, individualized social support to HL persons which contributes to socialization of this population category and to promoting integration processes among young people.

It is pedagogical higher educational institutions where future teachers are trained that are the centers that can provide such special instruction of volunteers for working with HL children, mentally retarded children having autism spectrum disorders (ASD) included. Nevertheless, with quite an impressive number of works discussing the specific features of organization of volunteering activity and the experience of its development within Russian higher education, the questions concerning readiness of students of pedagogical higher educational institutions for volunteering work with HL children still remain at the periphery of scientists' research interests.

### 2 Literature Review

In line with the objective of this research, let the specific features be presented which are highlighted in the content and organization of volunteering activity of higher educational institution students (including those of educational organizations of pedagogical focus) and discussed in the works of foreign and Russian researchers.

Foreign researchers characterize particularities of students' voluntary work as a gratuitous activity (Bussell & Forbes, 2002). Within the philosophical context, they specify that in its true essence, students' voluntary work is first of all focused on the experience of volunteers and not addressed to results of free work in the interests of the beneficiary (Kezar & Rhoads, 2001). It is also noted that volunteering which implies the development of an active civic stance and social responsibility is an effective route for one to gain a promising social and personal experience (Einfeld & Collins, 2008). C. Holdsworth & J. Quinn (2010) analyze the importance of presentation of the volunteer students' experience for developing volunteer movement at higher

educational institutions. In particular, on the one hand, the potential of volunteering is considered within the context of optimizing the process of students' mastering effective methods of interaction with the society, those in their professional sphere among them, and on the other – within the context of broadening their employment opportunities (Holdsworth & Brewis, 2014). E. Katz & J. Rosenberg (2005) call volunteering a signaling device: using that, students manifest their professional expertise to the future employers through presentation of their experience of voluntary work activity.

G. Armstrong (2016) considers volunteering within the context of social demand for institutions of higher education as for the necessity of cultivating an active civic stance in students: a specialist must not only possess knowledge in a scientific domain and opportunities for contributing to science but also be an active and socially responsible citizen. Citizen scientists are those who can identify and correct the imbalance of powers in the society using innovative solutions and, by doing so, promote the creation of a fair society.

C. Holdsworth & G. Brewis (2014) analyze the potential of enhancing the practice-oriented learning at higher educational institutions within the context of established integration of teachers' professional training curriculum and their voluntary work activity experience. These authors believe volunteering in pedagogical education consists in granting the future teachers an opportunity of taking a deeper "plunge" into the professional environment (Holdsworth & Quinn, 2010).

P. Salter et al. argue that engaging students into the activity of the professional community already before the work start – more extensively than only into practical teaching of academic subjects in classrooms of educational organizations – enables the teachers to more efficiently interact in the school communities where they expect their subsequent working life to take place. So, the future teachers learn not only teaching as such but also being a teacher. The researchers are certain that broadening the professional experience plays the decisive part in the future teachers' development. In this case, they are aware about and involved into the challenges of the communities where they teach in, be it considerations of the professional practice, diversity of students, moral and social problems of education. Most pedagogical educational institutions value the experience of pedagogical volunteering. In the researchers' opinion, for enriching the said experience, pedagogical volunteering has to have focused and structured representation in the academic process of the educational institutions (Salter et al., 2013). A. Coffey & S. Lavery (2015) substantiate in detail how pedagogical volunteering assists students: it renders the process of training of the future teachers for professional activity more intensive.

M. A. C. Bernardo et al. (2012) view programs of pedagogical volunteering as effective forms of interaction between higher educational institutions and the teaching community of educational organizations. Participation of the teaching community in higher education has the nature of trust-based and respectful partner relations within fulfillment of teaching and training processes that are determined by reciprocity of the objective and results projected. However, currently, there is no cutting-edge progressive evaluation of the outlined interaction between higher educational institutions and the teaching community; there is a necessity of reviewing the objective and updating the projected models and results of pedagogical volunteering consistently (Caspersz et al., 2012). C. W. Howe et al. (2014) believe the most promising formats of the interaction in question are implemented in the American context of professional education which is traditionally oriented to a combination of students' academic results with their social works.

Russian academic community highlights volunteering activity of students as an important psychological and pedagogical resource for solving social, cultural, economic, and other problems and building the socially responsible society (Gruver, 2017). Volunteering of the future teachers fits seamlessly within the

context of a multipositional system of relations between the participants of the educational process in conditions of network cooperation. Namely, it is potentially inbuilt into the content-related and procedural aspects of organizing the professionally focused practice for students of pedagogical higher educational institutions. Alongside this, it provides stronger guarantees for availability of varied options as for the content and forms of students' activity in the process of training (Shukshina et al., 2018).

Focus areas, forms, methods, and technologies of voluntary work activity depend on the target audience, i.e., on the population categories especially needing assistance. One of the important focus areas of volunteering is aid to mentally retarded children having ASD; these children must be provided with not only medical and social but also with psychological and pedagogical support, including the constituent of working with the environment (social milieu) for the children to get integrated into. The process of shaping the tolerant attitude to persons having HL is an important line of social activity relying on the use of information and network technologies, of the social humanitarian, social and political, and social and educational ones. This focus area gains special relevance among students, where the success of their future social and professional functioning depends directly on their level of tolerance.

In the modern science, tolerance is viewed as a complicated phenomenon incorporating sociocultural, political, economic, historical, and psychological elements. The concept of tolerance as a constituent of adaptive space represents a certain quality of interaction between the subject and the object of tolerance. It includes the individual and personal, social and public units, and it is characterized by the subject's readiness to accept the object's sociocultural distinctions (attributes of appearance, personal standpoint, particularities of behavior, etc.). Tolerance is developed as an integral personal quality which is manifested in daily practices in a relevant way. Most scientists share the opinion that the tolerant attitude plays the fundamental role in the structure of mind and self-consciousness, being a versatile personal formation. The tolerant behavior relies on the ability of maintaining one's psychological stability in problem situations, which allows considering this behavior as an individual's social and psychological competency of assessing the situation correctly and finding the optimal way out of it.

Thus, it can be stated that both Russian and foreign systems of higher professional education value the experience of pedagogical volunteering: its potential is sought after for the development of personal and professional qualities of the future teachers. Regrettably, scientific reasons behind the importance of volunteering work with HL children (including that with mentally retarded ASD children) for the future teachers' personal and professional establishment within the context of advance of inclusive education are only discussed in a limited number of research works. In the information sources available, the authors have not found any studies which would represent an integral process of exploring and shaping readiness of students of pedagogical higher educational institutions for volunteering work with mentally retarded ASD children.

### 3 Research Methodological Framework

The objective of the research consisted in identifying the phenomenon of readiness of pedagogical university students for volunteering work with mentally retarded ASD children. For achieving the said objective, the following tasks have been set and completed consistently: describing the phenomenon of students' readiness for volunteering work with ASD children; exploring this phenomenon in the course of studying the activity of volunteers of the "Rostok Dobrotы" (lit. Sprout of Kindness) team of Mordovian State Pedagogical University named after M. E. Evseev; summing up the findings and discussing them. The scientific research relied on the general methodological principles of scientific objectivity, consistency, and activity. The specific scientific reference points of the research were predetermined by the scientific concept of competency-based



approach which integrates, among others, personality-, activity- and context-related aspects. The principal research methods were the theoretical and the empirical ones. The former included analysis of scientific literature and pedagogical phenomena representing various aspects of the young students' volunteering activity. The empirical methods included summing up, systemizing, and interpreting the pedagogical experience in this domain (both the authors' own and that of teaching community in general); comparative analysis and synthesis of the empirical data obtained according to the results of the pilot psychodiagnosing study (questionnaire survey) and observation of the activity of MSPU volunteers. The respondents were 112 students of years 2–4 of the faculty of psychology and special education and the faculty of primary and artistic education of the said higher educational institution (aged 18 to 22, with 18 male and 94 female students) intending to join the "Rostok Dobroty" volunteer movement. The research was conducted in September – October 2020 in three stages. At the first stage, the level of the students' readiness for volunteering activity with HL children was found out using the questionnaire form developed on the basis of the authors' understanding of the phenomenon of readiness under study and A. A. Shagurova's guideline (2013) for the psychodiagnosing toolkit. The questionnaire form is represented by four scales incorporating 12 questions each that are oriented to identifying the set of competencies on which effectiveness of the activity depends. Two of them are within the psychological constituent – the scales on cognitive and personal competencies; within the activity-based one, there are two other scales – on communicative and labor competencies, respectively.

Summing up qualitative and quantitative parameters of the above competencies set was the basis for conventional identification of their formation levels. So, the elementary level implied copy competencies and competency generation when solving standard problems. At the reproductive level, standardized competencies were demonstrated based on previously learned behavior algorithms for certain situations with personal resources included into the system. Functionalization of competencies within the context of personal self-maintenance was the sign of the creative level.

At the second stage, the formation level of the students' tolerance toward HL persons was studied in the process of using psychodiagnosing materials designed for identification of the individual and personal, social and public components of the phenomenon in question (Minaeva & Karyakina, 2018). The third stage implied summing up the findings and interpreting them.

#### 4 Results and Discussion

Russian academic community continues the terminology-related debate on the essence of students' readiness for volunteering, defining it in several dimensions. Through the lens of the volunteering competency, it is determined as integral readiness for rendering others highly professional pedagogical, social, and other assistance at no cost (Karimov, 2011). In terms of the criterial framework, it is characterized as the formation level of the total of such components as motivation for success in volunteering and recognition of the values of volunteering and humanism focused interaction as the vital ones (Makovey, 2006). Via the model of volunteering activity, the said readiness is interpreted as a systemic psychological formation including the values- and meanings-related component, the cognitive, reflective, emotional and volitional, communicative, and activity-based ones (Konvisareva, 2006). By systemizing a volunteer's competencies, it is determined within the context of three clusters being represented – the worldview one (the ability to interpret the scientific picture for the purposes of volunteering), the statutory one (the ability to fulfill social standards), and the instrumental one (the operational and activity-based constituent of voluntary workers' abilities) (Bystrova et al., 2018). In terms of the social and psychological context, the above readiness is characterized as a complicated integral new formation ensuring the unity and coordination of

personality levels and subjective experience forms for successful performance of the said activity (Shagurova, 2013).

The authors' understanding of the phenomenon of students' readiness for volunteering work with HL children, mentally retarded ASD children included, relies on the scientific concept of the competency-based approach which integrates, among others, personality-, activity- and context-related aspects. In it, readiness is characterized as an integral subject quality of an individual – the integrity of knowledge and experience which manifests itself in the set of competencies determining the effectiveness of activity. The structure of the said personal quality can be represented by two basic constituents: the psychological (cognitive and personal competencies as such) and the activity-based one (communicative and labor competencies). Readiness is represented in the process of completing tasks available and in transforming the activity where its systemic nature ensures coordinated maintenance of all its competencies, and the extent of maintenance of a certain competency is determined by modality, complexity, and importance of the task (Lavrentyeva et al., 2020). Thus, the "perfect" portrait of a volunteer as a subject of successful volunteering activity within the context of personal self-fulfillment implies achieving the creative development level in both the psychological constituent competencies and those of the activity-based one.

At the initial stages, working with the respondents has revealed their potential capacities of performing volunteering work with mentally retarded ASD children, which is confirmed by their knowledge of requirements of the federal statutory acts and having professional competencies. It is confirmed, too, by their having a positive attitude to the development of inclusive practice and being ready for continuous professional progress.

The results obtained at the first stage prove that the students have differences in the formation level of their competency-based readiness for volunteering work with mentally retarded ASD children. Positive trends have been registered in the development of their cognitive competencies (knowledge of the agenda of mentally retarded ASD children, the level of universal cognitive competencies). So, 26,7% of the respondents have demonstrated the creative level, and 48,4% – the reproductive one. For the majority of the senior students, the reproductive formation level of competencies is characteristic. Namely, personal competencies (humanism, mercy, initiative, helpfulness, altruism, empathy, motivation for success) at this level have been demonstrated by 44,4% of the senior students; the communicative ones (openness and congruence in communication, developed communicative abilities) – by 37,8%; and the labor ones (designing one's own activity taking into account the specific context of work of an interdisciplinary team, provision of the relevant polymodal resource support, assessment of the results of designing and fulfilling the programs of volunteering, identification of effective interaction practices for all subjects of the support, expert appraisal of one's own activity results, and analysis of the context of difficulties) – by 28,4% of the senior students. Negative trends have been registered when analyzing the formation level of communicative competencies in 42,3% of cases and of labor competencies – in 44,4%.

Regrettably, it is so few as 16,1% the respondents who could demonstrate harmonious development of all the identified groups of competencies up to the creative level. As for the remaining pedagogical university students, their development extent of one or more groups of the said competencies has prevented them from getting close to the "perfect" portrait of a volunteer focused on working with mentally retarded ASD children.

The second stage results have allowed singling out conventional groups of the questioned ones. The first group includes the students having a high formation level of the tolerant attitude to HL persons. In these respondents, an active personal stance was clearly seen relying on social and moral motives of interaction with HL persons. The questioned ones demonstrated their readiness to contact with them in various social situations for

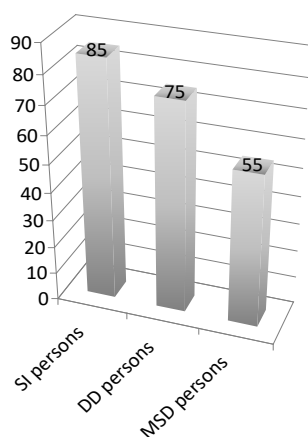
building constructive relations based on accepting other people for what they are. The respondents recognized rights of HL persons and showed a sensible attitude to their special needs. The students if this group are ready to acquire new knowledge, abilities, and skills required for successful interaction with persons of the said category.

The second group is the questioned ones featuring a medium formation level of the tolerant attitude to HL persons. In interaction with HL persons, these students tried to adhere to social and moral motives; they demonstrated their readiness to contact with them in various social situations, building a constructive relationship based on the tolerant attitude to them. The students recognized the necessity of observing these people's rights but were not always prepared to personally adapt to their special needs. The respondents voiced their readiness for acquiring the minimal scope of knowledge, abilities, and skills required for interacting with HL persons.

The third group is the surveyed ones having a low formation level of the tolerant attitude to HL persons. These respondents are not ready for adhering to social and moral motives within the interaction under study. They demonstrated low readiness for contacts in various social situations and did not see the point in building constructive relations with HL people. Although these students recognized the rights of HL persons, they believed meeting their special needs did not have to concern other members of the society, and, therefore, there was no necessity to acquire new knowledge, abilities, and skills required for successful interaction with HL persons.

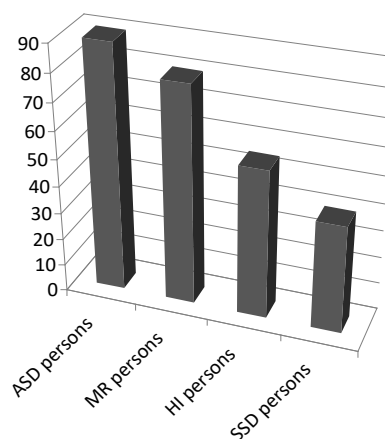
The questionnaire survey has shown that the students consider it the most convenient for themselves to interact with the following categories of HL persons: the sight impairment persons are noted by 85,0% of the questioned; the developmental delay (DD) ones – by 75,0% of the surveyed; and people having muscle-skeleton disorders (MSD) – by 55,0% of the respondents (see Figure 1). Meanwhile, interaction with the following categories of persons has been recognized as the least convenient: for 90,0% of the questioned – with those having ASD; for 80,0% of the surveyed – with those having deficiency of intellect (mental retardation / MR); for 55,0% of the respondents – with people having hearing impairment; and for 40,0% of the questioned – with persons having severe speech disorders (SSD) (see Figure 2).

Figure 1 Comfort in interaction with HL persons



Source: authors' own processing

Figure 2 Discomfort in interaction with HL persons



Source: authors' own processing

The students have considered the following ways of interacting with HL persons to be the most acceptable ones: assistance within charity and volunteering events is noted by 100,0% of the questioned; working as peers – by 75,0% of the respondents; co-education in one and the same group – by 70,0% of the surveyed.

As additional knowledge, abilities, and skills which the students would like to master for interacting with HL people, they have noted: special knowledge about mental and physical particularities of HL persons – 80,0% of the surveyed; further medical knowledge – 55,0% of the respondents; psychological support and conflict prevention skills – 40,0% of the questioned.

Therefore, special conditions are required to stimulate the development of tolerance as a component of personal competencies composing the psychological constituent of readiness for volunteering with HL persons, first of all, with mentally retarded ASD children.

## 5 Conclusion

The results of analysis of information sources on the problem in question and the authors' own teaching activity experience confirm the importance of studying readiness of pedagogical university students for volunteering work with HL children, with mentally retarded ASD children included. This is also relevant within the context of optimizing the activity of higher educational institutions in promoting students' personal and professional establishment. Significance of the materials of this paper is determined by the authors' finding that students' readiness to volunteering work with mentally retarded ASD children can be represented by the following basic constituents: the psychological (cognitive and personal competencies) and the activity-based ones (communicative and labor competencies). As for the set of competencies within each of these constituents, analysis of their features has been proven to allow stating the creative, reproductive, and elementary levels as the formation extent of the said readiness. It has been substantiated that in pedagogical university students, their acquired professional competencies and personal qualities potentially characterize their readiness for volunteering work with mentally retarded ASD children. However, such groups of competencies as the communicative (openness and congruence in communication), labor (design of volunteering activity, assessment of the results of its design and fulfillment, expert appraisal of the results of one's own activity, analysis of the context of difficulties) and personal (tolerance) ones need stimulation of their development – for this process, focused psychological and pedagogical support is essential. The authors' materials can be used in the educational process of higher educational institutions and within network interaction of various level educational organizations.

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**Primary Paper Section: A****Secondary Paper Section: AM, AN**

## EXPLORING THE EFFECT OF ART THERAPY ON THE DEVELOPMENT OF STUDENTS' CREATIVE ABILITIES

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**Abstract:** The development of creative abilities is one of the most interesting problems attracting the attention of many researchers. The problem of developing creative abilities by means of art therapy is associated with reforms of the modern educational system. So, the latter orients teachers to developmental teaching and adherence to the learner-centered approach in teaching, which implies creating conditions for the development of each student's personality, abilities, creative self-expression in various activities corresponding to the student's capacities and interests. In the paper, the most efficient methods of pedagogical influence promoting the development of students' creative abilities by means of art therapy have been identified and scientifically substantiated.

**Keywords:** creative abilities, art therapy, educational space, visual art therapy, art methods, students.

### 1 Introduction

In the course of the educational process, teachers and psychologists have to orient to such practices of interaction with students which offer opportunities both for the development of their creative abilities and for building up their psychological health, self-knowing, and positive self-awareness. These requirements are met by the classical art therapy which is represented by visual arts (painting, graphic arts, photography, drawing, and sculpturing) and termed visual art therapy.

The principal objective of art therapy is the development of creative abilities and self-assertion in creativity. Studying art therapy is relevant owing to the very individual being changed (the individual's forms and ways of thinking, personal qualities) in the process of creation, too, which is especially important: he or she becomes a creative person, one capable of creative making.

Relevance of the research is associated with the fact that the fundamental requirement set by the society for the contemporary education implies forming individuals who will be able to solve various problems independently and creatively, to think critically, to elaborate and defend their standpoints, to improve their skills and use them in reality in a creative way.

Social demand of the society for developing creative abilities in students is worded in the statutory documents pertaining to the system of education. So, Federal law "On education in the Russian Federation" (2012) specifies that the primary general, basic general, and secondary general education is aimed at "building students' personalities, developing their individual abilities, ... and the development of creative abilities of the students" (Ch. 7, Art. 66, Cl. 1-3).

### 2 Literature Review

Analysis of the category "creative abilities" requires addressing the concepts of "creativity" and "abilities", first of all.

Creativity has been studied as a psychological and pedagogical phenomenon by foreign and Russian scientists. However, no

uniform interpretation for this concept has been elaborated so far.

Let a number of dictionary and author definitions be discussed.

The most general, philosophical definition of creativity is suggested by Ya. A. Ponomarev (1969) who considers the essence of creativity as a "necessary" condition for the development of matter, for its new forms to emerge, with the very forms of creativity changing alongside the said emergence" (p. 223).

L. S. Vygotsky (2011) treats creativity as follows: "Any human act that gives rise to something new is referred to as a creative act, regardless of whether what is created is a physical object or some mental or emotional construct that lives within the person who created it and is known only to him" (p. 105).

S. L. Rubinshtein (2009) understands creativity as an activity of creating something new, original, later belonging to the history of the creator himself, of science, and of art (p. 384).

In dictionary of the Russian language by S. I. Ozhegov and N. Yu. Shvedova (2015) creativity is defined as creating conceptually new cultural and material values (p. 659).

The dictionary "Psychology" edited by A. V. Petrovskiy and M. G. Yaroshevskiy (1990) also considers the concept of creativity as an activity resulting in creation of new material and spiritual values. Meanwhile, this definition has an important addition pointing to factors that contribute to performance of the creative activity as a result of which a unique and original product is generated (Petrovskiy & Yaroshevskiy, 1990, p. 397).

By creativity, L. K. Veretennikova (2019) means an activity aimed at discovering and creating the new and novel; its novelty can be both objective and subjective at that.

I. Ya. Lerner (2016) describes creativity as "a process of one's creating the objectively or subjectively new and novel by means of specific intellectual procedures which cannot be represented as precisely defined and strictly regulated systems of operations or actions". The author highlights creative thinking as the vital condition of generating art and the top level of its manifestation (Lerner, 2016, p. 184).

So, the following shared points can be singled out in all the above interpretations of creativity: first of all, this is an activity; secondly, its objective and result is the creation of a new product.

Concerning abilities, professor B. M. Teplov (2003), a doctor of sciences in psychology, noted that "these are individual properties of personality which are subjective conditions of successful performance of certain activities. Abilities cannot be reduced to the knowledge, practical abilities, and skills possessed by an individual. They are discovered in the speed, depth, and solidness of the acquisition of methods and practices of a certain activity; they are internal mental regulatory meanings conditioning the possibility of gaining them" (Teplov, 2003, p. 133).

S. L. Rubinshtein (2009) believed that "each ability is an ability for something, for an activity. One's having a certain ability means one's fitness for the certain activity. The ability must incorporate various mental properties and gifts that are essential owing to the nature of this activity and requirements proceeding from it" (Rubinshtein, 2009, p. 200).

In their works by E. K. Zimina et al. (2020) and N. S. Petrova et al. (2020) is emphasized the fact of the objective and subjective novelty attribute of the product created by a person, as well as the use of productive learning methods: using those leads to building up creativity.

### 3 Research Methodological Framework

The objective of the research is to study opportunities of using art therapy as a means for the development of creative abilities of students.

Tasks of the research are as follows:

1. Completing a review of foreign and Russian studies of the use of visual art therapy as the principal art therapeutic method.
2. Researching and scientifically substantiating the effect of art therapy on the development of creative abilities in students.

Methods of the research:

The materials of the research were published works of authors discussing the problems of developing students' creative abilities by means of art therapy in the academic process and creation of certain conditions for the said process to take place.

The study relies on the following theoretical methods: analysis of psychological, pedagogical, and methodological literature; systemization, generalization, and comparison.

### 4 Results and Discussion

For identifying the influence of art therapy on the development of creative abilities in students, the authors of the paper have made clear the concept "art therapy". Etymologically, the term of art therapy derives from two words: the English "art" and the Greek "therapeia" meaning treatment or care. Art therapy originated as a "method for treating nervous and mental illnesses by means of art and self-expression in art" (Ozhegov & Shvedova, 2015).

Art therapy did not find its way into the Russian system of education for a long enough period of time (Kasen & Aitbaeva, 2019; Aitbaeva & Kasen, 2018). The authors call the year of 1997 and the published work by Yu. S. Shevchenko and A. V. Krepitsa (1998) "Principles of art therapy and art pedagogy in working with children and adolescents", where the term "art pedagogy" was differentiated from that of "art therapy", the beginning of "inscription" of art therapy within the framework of educational system".

As defined by R. A. Verkhovodova and R. A. Galustov (2011) "art pedagogy is a scientific and pedagogical domain relying on an integrative use of various arts in the educational process for the purposes of producing an efficient cultivating influence on students' personalities" (p. 15-18).

Visual art therapy is the fundamental and hence the best explored focus area of art therapy contributing to harmonization of students' mental state.

The first studies of the effect of visual art therapy on children's development were conducted abroad.

So, Austrian and American artist Edith Kramer (2010) demonstrated in her research works that classes on visual arts activity "imply the development of a set of abilities including mastering the artistic materials in such a way that they start acting as an equivalent of human experience and mental processes" (p. 2). The author has proven that the process of drawing promotes organization of mental processes and gradual transition from relatively primitive forms of the mental activity to more complicated and efficient ones.

In Russian science, there has been a number of studies, too, representing certain questions of the use of visual art therapy in developing students' creative abilities.

For example, E. A. Medvedeva, I. Yu. Levchenko, L. N. Komissarova, T. A. Dobrovol'skaya (2001), O. M. Korzhenko, and E. A. Zargariyan (2013) name the following principal conditions for the use of art therapy in the educational space:

- Firstly, there must be a system of moral and esthetic interaction relying on the domains of psychology, pedagogy, and art review;
- Secondly, teachers must organize independent artistic creativity of participants of the educational process.

L. D. Lebedeva (2001) has explored a broad range of questions of applying art therapy in education. In particular, she considers theoretical bases of art therapy. In the book, there is also a unit on diagnosing and outlining the scope of use of the art therapeutic diagnosing method, and a series of topical art therapy classes and exercises are demonstrated as a system (Lebedeva, 2001).

Another example of using art therapy elements in the educational process are works of L. A. Ametova (2003). She has designed the be your own art therapist program which is aimed at shaping art therapy culture in students and developing their intellectual and creative capacities. In the course of fulfillment of the program, a teacher holds classes and training sessions for students, organizes their perception and discussion of works of both figural art and music (Ametova, 2003).

As E. Yu. Ilaltdinova and A. A. Oladyshkina (2020) note, teachers must create conditions for the creative principle to be made relevant in students through involving them into various activities.

Having analyzed the scientific sources, the authors come to the conclusion that the use of art therapy methods in the educational process acts as one of the means for building up healthy, socially productive, and creative individuals.

The study of theoretical approaches to the problem of creative abilities being developed by means of art therapy has shown that for the most part, its use is associated with the cultivating and harmonizing effect it produces on students. The use of visual art therapy in the system of education as an art therapy method can be justifiably presented as a health-saving innovation which can manifest itself at the level of educational programs, innovation technologies, via the system of spontaneous creativity methods involving various materials and can be integrated with other technologies of the psychological and pedagogical work.

Based on the above, the authors of the paper have developed recommended practices for implementing art methods into teaching activity with the aim of developing students' creative abilities.

The objective of using art therapy methods at classes on visual arts is the development of students' personalities, their abilities of creative self-expression.

Tasks of the methods used are as follows:

- promoting accommodation for creative activity during which artistic images are created representing the reality and embodying the students' esthetic attitude to it;
- introducing students to new artistic techniques;
- teaching them how to use various artistic materials in their drawing, to understand the idiom of fine art, to use artistic expressive means (line, shape, composition, rhythm, color and so on);
- revealing and cultivating the students' creative capacities, leading them to creating their own variations and improvised works.

So, to implement art methods in their teaching activity, teachers have to: get a clear understanding of significance of these methods, the objectives and tasks of using art therapy methods combined with solving the educational tasks of the "Visual arts" academic subject; know methods of art therapy based on the process of drawing; realize and adhere to stages of carrying out the said art technologies.

Next, let the opportunities granted by the zentangle therapy and mandala therapy methods for developing students' creative abilities be considered in more detail.

Among the present-day most interesting and popular figural methods of art therapy, the zentangle technique is notable. As defined by B. Krahula (2014), zentangle is a graphic black and white drawing consisting of a special total of repeated patterns which form an abstract image bearing no semantic load. Another interpretation suggests the origin of the term zentangle being associated with the words zen (tranquility, calmness) and rectangle.

As an art therapy method, zentangle is simple to use as no special conditions, materials, or tools are required for it. All that one needs here - only a piece (tile) of paper and a pen or pencil.

The use of the zentangle technique drawing can contribute to achieving many diverse objectives:

- in personal terms – cultivating one's artistic taste and skills of using paper as an art material;
- in meta-subject terms – building motivation and the ability to organize one's artistic and creative activity independently;
- in subject terms – broadening one's ideas about depictive activity; gaining one's own experience of artistic and creative activity via modeling new images by means of transforming the known ones; learning artistic expressive means of drawing – such as composition and its construction, color (the black and white contrast), line (thin and thick, straight and wavy, flowing and sharp, spiraled, and sweeping lines), simple shapes of geometry, and the rhythm of lines, shapes, and color.

Concerning the development of creative abilities, results of studies give evidence about benefit from creating zentangles (Krahula, 2014).

The origin of the word mandala is associated with Buddhism and Hinduism. In its broadest sense, it correlates with the following meanings: globe, wheel, disc, orbit, ring, country, society, space, total, assembly. The shared tinge within all the above interpretations is the all-encompassing sphere embracing each person. So, the complex composition of a mandala can contain the most diverse elements: squares, ovals, wavy lines, curves, diamond shapes, triangles, etc. The rhythmic character of elements placement, their different sizes, and the use of whatever colors one pleases allows creating unique and inimitable pictures. The size of mandalas is not regulated, so it can range from a small picture of several centimeters up to vast walls.

The study of the mandala therapy method and its implementation into practice of therapeutic work is associated with the name of Carl Gustav Jung who defined a mandala as a material expression of one's mental state (a projection of the Self). He believed that using mandalas, the human inner condition can be transfigured. Drawing mandalas is associated with bringing one's inner state, emotions, and feelings from the internal world out to a sheet of paper where what is happening within a person is reflected via color and line just like in the mirror. That is, drawing mandalas allows transforming one's emotions (frequently concealed as prescribed by the modern culture) into a socially acceptable format. This is where the therapeutic effect of mandala therapy consists (Kopytin & Svistovskaya, 2017).

When suggesting students to draw mandalas, the teacher completes the following educational tasks:

- introducing the students to the art of patterns and different kinds of symmetry;
- developing their sense of rhythm, harmony, and order;
- creating conditions for the development of the students' imagination and creative abilities, as the absence of strict rules for creating mandalas grants them an opportunity of expression in a spontaneous, original, and non-standard way.

Building a mandala is a creative process in which ideas about beauty and harmony are expressed in a free symbolic shape via designing a pictorial composition in a circle, selecting, and

combining the rhythmically repeated elements colored as desired by the author of the mandala according to his or her current mood.

## 5 Conclusion

Studying the works of Russian and foreign scientists has shown that in psychology, creative abilities are viewed as a human personal quality characterizing the degree of the person's conformity to requirements of a particular creative activity and determining the level of its effectiveness. The study of opportunities of using art therapy to develop creative abilities has shown that the use of art therapy improves the interpersonal competency, self-awareness, self-esteem and communication skills; it reveals the creative potential manifested in creating new original products; it helps shape healthy needs, too.

Recommended practices of fulfillment of art methods in teaching activity have been developed. In particular, the following methodological aspects have been determined: meaning, objectives, and tasks of using art therapy methods combined with completing educational tasks of the "Visual arts" subject; certain kinds of art therapy methods relying on the process of drawing; fulfillment stages of the art technologies.

The opportunities of use have been described for the following methods:

- the zentangle method in developing creative abilities. Alongside rules of zentangle, the list of tools and materials required for zentangle drawing, and methods for learning the zentangle technique, the authors have identified the importance of drawing using this technique, the role of zentangle drawing at classes, and its opportunities for completing diverse tasks in personal, subject, and meta-subject terms;
- the mandala therapy art method in developing students' creative abilities. It has been demonstrated that building a mandala is a creative process in which one's ideas about beauty and harmony are expressed in a free symbolic shape via designing a pictorial composition in a circle, selecting, and combining the rhythmically repeated elements colored as desired.

In general, practice of art therapy methods at visual arts classes contributes to broadening students' ideas about kinds of depictive activity and gaining their own experience of artistic and creative activity via modeling new images by means of transforming the known ones. Thus, they learn artistic expressive means of drawing, such as composition and its construction, color, line, stroke, simple shapes of geometry, and the rhythm of lines, shapes, and color.

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**Primary Paper Section: A**

**Secondary Paper Section: AM, AN**

## SUPPLEMENTARY GENERAL EDUCATION PROGRAM “ARTISTIC AND AESTHETIC COMPETENCE OF A FUTURE TEACHER”: IMPLEMENTATION RESULTS

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**Abstract:** Since the developed artistic and aesthetic competence of a future teacher is one of the indications of the level of their training, high competitiveness and mobility in the modern world, the features characterizing implementation of this process become a topic of high relevance for exploration. The paper presents the experience of implementing the supplementary general education program "Artistic and Aesthetic Competence of a Future Teacher" within the educational process at Mordovian State Pedagogical University named after M. E. Evseviev, which has proven its effectiveness in raising the level artistic and aesthetic competence of future teachers during their learning at the university. This paper is of value for university lecturers, bachelors and masters in the field of pedagogy and for practicing teachers.

**Keywords:** supplementary general education program, outcome, future teacher, artistic and aesthetic competence, educational process.

### 1 Introduction

In the modern educational paradigm, the demands placed upon a modern specialist are changing, which in turn requires a review of the design, content, forms and methods of professional training of a future teacher at university for developing their artistic and aesthetic competence (Kuyumcu, 2012; Orkibi, 2012; Mullet et al., 2016). The relevance of the problem under research is high due to the social order from the community and the state for teachers who have not only theoretical knowledge and specialized professional skills, but also for those teachers who are upholding fundamental aesthetic values (Arslan, 2014; Kenny et al., 2015; Bereczki & Kárpáti, 2018).

The existing training programs for pedagogical staff based on the Federal State Standard of Higher Education in the field of training 44.03.05 Pedagogical Education (with two training specialties) of the following specialties: Russian language. Literature; Russian language. History; Russian language. Native language and literature; Preschool education. Primary education; Foreign language (English, German), as well as the existing educational practices are not sufficient for developing the above competence in future teachers (Shukshina et al., 2018).

Thus, completion of the supplementary general education program "Artistic and Aesthetic Competence of a Future Teacher" will result in acquisition of the framework of theoretical knowledge, practical abilities and skills of artistic and aesthetic orientation, which, in turn, will help to transform student into such a teacher who, on the one hand, will be able to embrace own artistic and aesthetic potential, and on the other hand, to develop artistic and aesthetic competence in the younger generation, conduct with students the artistic and aesthetic work in a specific professional (and problem-based) situation.

### 2 Literature Review

The phenomenon of artistic and aesthetic competence is the target of research by Almukhambetov, B., Tanirbergenov, M., Nebessayeva, Z. (2015), L. R. Ishmakova (2016), L. A. Klykova (2009), L. M. Massol (2006), Yu. V. Stewart (2012), S. A. Chernysheva (2014), N. V. Chechukova (2015), T. L. Chumakhidze (2016) and others. The proceedings of the above named researchers led us to understanding of the artistic and aesthetic competence of a future teacher as a combination of personality traits essential for the success of artistic and aesthetic activities, including artistic and aesthetic knowledge, skills, attitudes, artistic and aesthetic orientation and motivation, masterful use of artistic and aesthetic means, adequate

perception of artistic and aesthetic situations, readiness for the artistic and aesthetic activities (Ryzhov, 2018).

The supplementary general education programs represent a framework of knowledge, skills and abilities essential for the holistic development and education of an individual so that he/she could lead a full life in the modern socium. Such programs help to develop the multifaceted personal qualities, instill the universal human values in students and identify and satisfy to the fullest extent their need in cognition and creativity, help them to achieve self-fulfillment and personal self-determination, and prepare them for an independent professional life (Buylova, 2015).

By undertaking the supplementary general education program, the future teachers may broaden the range of targeted special professional competences, as well as value orientations (Gorshenina, 2014). The programs provide an opportunity for a teacher to strengthen versatile personality qualities of future teachers, to instill artistic and aesthetic values in students, and an opportunity for students to boost their determination to learn and create, fully realize their individual potential and achieve self-fulfillment as a personality ready for independent professional life (Ryzhov, 2020a, 2020b).

The effectiveness of such programs for successful development of artistic and aesthetic competence of future teachers has been proven by a great number of publications (Vardanyan & Lezhneva, 2012; Gorshenina, 2016; Loginova, 2018); Shukshina & Zamkin, 2018; Shukshina et al., 2018) and by practical experience. Training under the above program provides future teachers with the opportunity to acquire theoretical knowledge and practical skills to conduct artistic and aesthetic work in the setting specific to their professional activity, etc.

Development of students' artistic and aesthetic competence is the main goal of the program, which is achieved by addressing certain objectives such as: learning the theory; learning the methods, various forms and technologies for competence development; acquiring skills of performing creative and research assignments, modeling circumstances of real professional activity and work with projects; igniting solid interest in developing the artistic and aesthetic competence.

### 3 Research Methodological Framework

The purpose of this paper is to share the experience of implementing the supplementary general education program "Artistic and Aesthetic Competence of a Future Teacher" within the educational process at university on the example of Mordovian State Pedagogical University named after M. E. Evseviev. For achieving this goal the following objectives were identified: first, to analyze scientific literature, practical pedagogical experience and normative legal documents regulating the educational process at university; second, to develop a supplementary general education program "Artistic and Aesthetic Competence of a Future Teacher"; third, to run an experiment for developing the artistic and aesthetic competence based on the supplementary general education program referred to above; fourth, to measure the level of artistic and aesthetic competence of future teachers before and after completion of the program, and to conduct a comparative analysis of the obtained data.

In pursuance of the stated goal, within the framework of our experimental research, we relied on the theoretical (analysis and synthesis, consolidation and systematization) (Kraevsky, 1994) and empirical (V. S. Avanesov's method "Measurement of Artistic and Aesthetic Needs") (Ilyin, 2021) methods.



#### 4 Results and Discussion

The supplementary general education program "Artistic and Aesthetic Competence of a Future Teacher" is intended for the bachelor's degree course in the field of training 44.03.05 Pedagogical Education (with two specialties), specialties: Russian language. Literature; Russian language. History; Russian language. Native language and literature; Preschool education. Primary education; Foreign language (English, German). The total duration of the program is 24 hours and includes theoretical (4 hours of lectures) and practical (8 hours of practical classes) training, and 12 hours of unsupervised self-study (Ryzhov, 2020a; Ryzhov, 2020b).

Structure and content of the assignments included in the supplementary general education program correspond to the requirements of the Federal State Standard for Higher Education – Bachelor's Degree Course in the field of training 44.03.05 Pedagogical Education (with two specialties) (Order N 125 dd February 22, 2018) and the professional standard for teachers. It should be emphasized that this program was discussed at the meeting of the Pedagogy Department at Mordovian State Pedagogical Institute named after M. E. Evseviev (MSPI named after M. E. Evseviev), then was implemented in the Mordovian State Pedagogical University named after M. E. Evseviev (MSPU named after M. E. Evseviev), and some of its tasks (from the second module) were carried out in the general education facilities where the main departments of this university are present (Lyceum N 26, Secondary General Education School with In-Depth Study of Selected Subjects N 24, Secondary General Education School N 8 in Saransk), and where students, who are future teachers, get their practical training under internship programs (Shukshina & Zamkin, 2018).

A distinctive feature of the developed program is its practice-oriented approach to the process of future teacher preparation in the context of axiological and competence-based paradigms of education (Shukshina & Zamkin, 2018; Shukshina et al., 2018).

The implemented supplementary general education program included two main modules: theoretical training for studying the theoretical material, where the dominant form of study was lecture; and practical training for acquiring certain skills and abilities. Also, this course included out-of-class self-directed performance of assignments.

Training on the first module of the program which was focused on the theoretical foundations of the artistic and aesthetic competence was delivered in the form of lectures on the below topics: "Artistic and Aesthetic Competence of a Future Teacher as a Pedagogical Phenomenon", "Structure and Essence of the Artistic and Aesthetic Competence of a Future Teacher", etc. The lectures covered periods in evolution of the views on the problem of the competence under research, analysis of the course of developments in the aesthetic thought and artistic and aesthetic education, definition of the artistic and aesthetic competence at the modern stage and characteristics of its structural components.

As shown by experience, in implementation of the program the problem-based lecture has proven an effective form of study for developing the creating thinking, as well as the artistic and aesthetic culture due to the use of problematic questions having hidden contradictions which instigated students to search for own solutions. This form of study required that students already had certain bundle of knowledge which could have been obtained by referring to the recommended resources. All this made it possible to establish the logical connections between the existing knowledge and the new learning content acquired at the lectures, to reveal the key problems and didactic difficulties by showing students the possible ways to overcome them (Shukshina & Kasko, 2019).

The ongoing monitoring under the first module of the program included individual interviews, checks of students' lecture notes, mutual express testing of students. The module "Theoretical

Foundations of the Artistic and Aesthetic Competence" was completed with the final control in the form of a problem-focused discussion. For example, individual interviews help to reveal the difficulties which future teachers experienced when learning the material, to show the ways to overcome them, and recommend necessary literature for additional reading. In order to check how well the material was perceived at the lectures, the lecture notes on certain topics were checked. The program students with the help of express tests consisting of several questions checked the knowledge of classmates on the learnt topic, and after exchanging answers could assess the level of obtained knowledge. This helped students to focus on own mistakes in answers and gaps in knowledge, and to assess how well they know the material. The results under this module were assessed by means of questionnaires, which demonstrated that students have knowledge of main stages in the evolution of views on artistic and aesthetic competence, which development is the key intention of the program, as well as the content and characteristics of its structural components.

The second module, which covered the technologies to foster the artistic and aesthetic competence of a future teacher, was intended to develop artistic and aesthetic skills of students and transfer to them the knowledge on effective technologies to develop this competence, and was delivered in the form of practical training sessions on certain topics, including: "Technology of Collective Creative Activity", "Web-Quest Technology for Developing Artistic and Aesthetic Competence", "Technology for Organizing and Conducting an Excursion", "Technology for Organizing Festivities and Events of Artistic and Aesthetic Orientation". The results of the second module were controlled by checking the assignments completed by the program students.

The key purpose of the practical training within the second module of the program was to develop certain abilities and skills of students. During the practical studies the trainees presented the completed assignments and discussed them all together in order to identify deficiencies and introduce corrections. Traditionally, practical training is intended to systematize key concepts, consolidate the obtained knowledge and apply it in practice. In addition, practical lessons integrate knowledge from different subject areas (Shukshina et al., 2016).

For example, when studying the topic "Technology for Organizing Festivities and Events of Artistic and Aesthetic Orientation" the future teachers became familiar with the role of festive events in the fostering of artistic and aesthetic competence; details of how to proceed with organizing events of artistic and aesthetic nature, festivities, concerts, contests; functions of events for children; classification of events; requirements for organization of festivities and events of artistic and aesthetic orientation; technology for designing a festivity event of artistic and aesthetic orientation, which includes conception, construction of a composition, development of a script; rules of creating the event scenario; decorations for an event of artistic and aesthetic orientation; features peculiar to organization of events of artistic and aesthetic orientation; technology for conducting the festive event.

After studying this topic, students had to make a presentation of the training and methodological pack for pedagogical internship at school. The future teachers received a task connected with developing and offering the concept of an artistic and aesthetic event at school. Students who chose non-standard creative options shared opinions and proposed their ideas. This led to the task becoming the personal aspiration for the experiment participants.

It is worth highlighting the importance of self-directed work for the professional growth of future teachers in terms of organizational, scientific, pedagogical and methodological aspects. It gives a future specialist the opportunity to obtain the skill of self-education, and to ensure its continuity. Self-directed work in its essence is practice-oriented, and exploratory in nature.

The high importance of self-directed work today is undisputable in the preparation of future teachers; it has become the cornerstone of the educational process. When it is full-blown, students learn the methods of cognition, their interest in creative activities is triggered, and they become ready to undertake scientific and creative tasks.

Proceeding from the above, the course based on the proposed program included assignments to students for independent work. Here are some examples of such assignments:

- make a glossary of the key terms and concepts: competence, aesthetics, artistic and aesthetic competence, artistic and aesthetic education, etc.;
- schematically depict the structure and content of artistic and aesthetic competence of a future teacher;
- produce a table showing the main stages in the evolution of views on the problem of artistic and aesthetic competence of a future teacher;
- assess your level of artistic and aesthetic competence;
- select questions for a questionnaire that could be used to assess the level of artistic and aesthetic competence of students;
- select diagnostic methods to measure the level of artistic and aesthetic competence;
- make a plan of the organizational activities to hold a mass event of an artistic and aesthetic character (festive event, contests and games, collective creative activity);
- produce a plan for preparing and conducting a creative contest among students;
- produce a master plan of an artistic and aesthetic excursion for the school students.

After completion of the program the reflexive analysis was held and the level of competence was assessed.

All students in the experimental group who received training under this program successfully completed the tasks, as evidenced by the results of the final attestation.

It is worth noting that the objectives accomplished by the program (students learning theoretical foundations of artistic and aesthetic competence; methods, forms and technologies for developing artistic and aesthetic competence; skills to perform artistic and aesthetic tasks of creative and research nature, modeling of artistic and aesthetic situations from real professional life and work with design projects of artistic and aesthetic orientation; sparking a sustainable interest of a future teacher in developing their artistic and aesthetic competence), pursue the goal of providing future teachers with the knowledge of:

- role of the level of artistic and aesthetic competence for self-fulfillment in pedagogical activities;
- aesthetic values, their meaning for creative endeavours and daily life, along with deep understanding of such values;
- theoretical foundations of the artistic and aesthetic competence of a future teacher;
- structure and content of the artistic and aesthetic competence of a future teacher;
- main means and technologies for implementing artistic and aesthetic education.

Skills:

- select appropriate means to solve certain artistic and aesthetic problems;
- identify artistic and aesthetic meaning and purpose of different situations;
- take active part in discussion by choosing the language means best suited to a particular artistic and aesthetic situation;
- choose a style of artistic and aesthetic conduct that is socioculturally acceptable, taking into account the ethno-psychological characteristics of partners and social norms of behavior;

- participate in discussion of the artistic and aesthetic problem, formulate its essence and ways of its solution;
- carry out self-control and self-analysis of the results of artistic and aesthetic activity, critically assess the results of artistic and aesthetic activity;
- use the results of self-reflection for designing the artistic and aesthetic activities.

It is expected that by completing this program teachers will:

- learn modern technologies for developing the artistic and aesthetic competence of a future teacher;
- develop readiness to perform artistic and aesthetic activities in certain professional (problem-based) situations;
- strengthen their artistic and aesthetic power of observation as a professional quality.

The pilot testing of the program described above was carried out at MSPU named after M. E. Evseev (Shukshina et al., 2016; Ryzhov, 2020a, 2020b). The participants of the described pedagogical experiment were students of MSPU named after M.E. Evseev pursuing studies in the field of training 44.03.05 Pedagogical Education (with two specialties), specialties: Russian language. Literature; Russian language. History; Russian language. Native language and literature; Preschool education. Primary education; Foreign language (English, German) (159 persons). Students from six academic groups took part in our experimental research, 78 of which were included in the experimental group (EG) and 81 in the control group (CG).

Before implementing the program, we assessed the initial level of artistic and aesthetic competence of future teachers using such diagnostic tooling as the method of V. S. Avanesov "Measurement of Artistic and Aesthetic Needs" (Ilyin, 2021).

This method is a questionnaire comprising 32 questions concerning personality of a respondent, to which the respondent should answer affirmatively or negatively. The papers with answers of future teachers were processed based on the key.

The level of artistic and aesthetic competence of future teachers was revealed by answers 'Yes' or 'No' to certain statements. For each answer coinciding with the key 1 point was awarded. The total number of points for 'Yes' and 'No' answers to certain statements reflected the strength of aesthetic needs.

According to the research results, the total scores of respondents varied in a range from 7 to 29 out of 32 maximal points. Thus, the level of artistic and aesthetic competence in the experimental group was low for 53.4% of the respondents, medium for 32.5%; and high for 14.1%; and in the control group it was low for 49.9%, medium for 31.0%; and high for 19.1%.

The students from the experimental group (EG) were offered to complete the supplementary general education program "Artistic and Aesthetic Competence of a Future Teacher".

The last stage in implementation of the supplementary general education program "Artistic and Aesthetic Competence of a Future Teacher" involved the repeated diagnostics of the level of artistic and aesthetic competence of future teachers and comparison of the initial and final levels. We should underline that the data obtained in both control and experimental groups of students were analyzed, but the control group was not trained under the supplementary general educational program.

The results of assessment showed that only 17.7% of respondents in the CG has high level, 34.1% had medium level, and 48.2% had low level. This indicates an insignificant change in the level of competence. Results obtained in the EG: 44.2% – high level, 37.7 % – medium level, 18,1 % – low level. Dynamics in the level of artistic and aesthetic competence of future teachers in experimental and control groups is presented in the below table.

Table 1 Dynamics in the Level of Artistic and Aesthetic Competence of Future Teachers in Experimental and Control Groups, %

Level	Average value CG		Average value EG	
	Before program completion	After program completion	Before program completion	After program completion
Low	49.9	48.2	53.4	18.1
Medium	31.0	34.1	32.5	37.7
High	19.1	17.7	14.1	44.2

Source: authors' own processing

Thus, the results of the repeated assessment of the level of competence in experimental and control groups were as follows: In the experimental group, the high level of artistic and aesthetic competence of future teachers increased by 30%, medium level increased by 5.2% and low level decreased by 35.3%. Meanwhile, no significant changes were revealed in the control group.

The positive effect of supplementary general education programs has been confirmed by a number of studies devoted to the development of future teacher competences. Thus, supplementary general education program may play an integrating and organizing role as a mechanism for personal self-improvement of future teachers, which will enhance greatly their appeal in the labor market (Gorshenina, 2016). The distinctive features of this form of training are the in-depth study of various problems enabled by development of the variable component of the core training program, its pronounced practical orientation (Movsesyan, 2017). By completing the supplementary general education program, students receive the opportunity to expand the range of their special professional competencies developed under the core professional training program of higher education (Lapshina, 2015).

## 5 Conclusion

The developed supplementary general education program "Artistic and Aesthetic Competence of a Future Teacher" that was implemented on the basis of the Mordovian State Pedagogical University named after M. E. Evseev among students pursuing the field of training 44.03.05 Pedagogical Education (with two specialties) plays an important role in developing the artistic and aesthetic competence of future teachers. Assessment of the level of artistic and aesthetic competence of a future teacher before and after completion of the program has proven its effectiveness. The obtained results provide grounds for making a conclusion about the positive dynamics in the level of the artistic and aesthetic competence of all future teachers from the experimental group who were trained under the program. While in the control group the level of artistic and aesthetic competence remained low for most of students (48.2%), in experimental group most respondents (44.2%) demonstrated a high level. So, the difference found between the control group and the experimental based on the final assessment suggests the program's usefulness in the system of supplementary education for future teachers.

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**Primary Paper Section: A**

**Secondary Paper Section: AL, AM**

## PROFESSIONAL GROWTH TRAJECTORY OF PRIMARY SCHOOL TEACHER

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Abstract: The paper analyzes the problem of building a professional growth trajectory for primary school teacher. The interpretation of the concept "professional development of a teacher" has been explored within the frames of innovative processes in education. Different levels of professional development of a modern teacher have been described (from pedagogical skillfulness to pedagogical innovativeness). The authors paid special attention to analyzing the motivational component of continuous professional education (motivation of professional growth, double assessment of professional competence). It has been asserted that building an individual professional growth trajectory for each teacher with account of their personal motivation will improve the teacher's competitiveness.

Keywords: professional competency, professional development of a teacher, professional growth trajectory, motivational sphere, pedagogical activity.

### 1 Introduction

High demands for professional competency and competitiveness of a teacher place major emphasis on the teacher's professional growth.

Contradictions between numerous studies dealing with the mechanisms of work of a primary school teacher and unsolved problems associated with the pedagogical practice become more and more acute.

It should also be taken into account that in the modern world the constant changes and challenges become the new normal. Intense digitization in all areas of life, determination to train future competitive specialists in all fields of knowledge on the global arena require that the pedagogical community changes approaches to education of the next generation. Correspondingly, for developing the skills of the 21st century in modern children the teachers, who are the meta-resources conveying knowledge, need recalibration to make them capable of developing their own universal competences and to tie the subject content down to getting hold of the most relevant principles and basic ideas at each particular moment in various types of educational activity.

The teacher's competency is a dynamic category which requires ongoing advancing. As is known, the higher is the level of competencies, the more valuable is the specialist. It should be noted that development is only possible when teacher has a proactive approach to life and has a true idea of own level of professional competence. However, the analysis into pedagogical activities of educational facilities seeking to help primary school teachers achieve professional excellence, led us to the conclusion that the use of unified work practices does not transform a teacher who is the passive object of influence into the active purpose-driven and competitive subject. A professional growth trajectory of each primary school teacher should be individualized. By building individualized educational trajectories, it becomes possible to embrace professional and personal needs, current level of training, experience of pedagogical activity, personal qualities of each teacher, and to identify the developmental prospects and professional growth opportunities of each primary school teacher.

The aforesaid highlights the need to define the main areas of focus when building professional growth trajectories for primary school teachers based on their level of professionally relevant qualities.

### 2 Literature Review

The basic concept in terms of the considered problem is the teacher's professional development. This process has been analyzed by many scientists, including K. A. Abulkhanova-Slavskaya (1991), E. F. Zeer (2007), N. V. Kuzmina, A. L. Rean (1993), A. K. Markova (1996), V. A. Slastenin (2006), V. D. Shadrikov (1982), L. M. Mitina (2004) and others.

Some researchers examine professional development through the lens of psychological dimension of the teacher's personality, while others rely on the activity-based approach for comprehending the progressive advancement forward which triggers qualitative transformations in professional skills of teachers.

Professor E. F. Zeer (2007) describes professional development as a mental change within the framework of professional-educational, labour and professional activity (p. 22). V. A. Slastenin (2006) characterizes the same concept of development as "a process of personality formation focused on high professional accomplishments and achievement of personality, professional activity and professional interactions" (p. 15). L. M. Mitina (2004) sees pedagogical orientation and flexibility as "effective factors of professional development" (p. 15).

Professional development of a teacher is a continuous process that involves creation of a trajectory and step-by-step movement along a certain route. In their works, scientists N. A. Krivolapova, N. N. Voytkovich (2018), as the goal of continuous professional education put forward the growing of versatile creative personality of a teacher, which is harmonious and free thinking.

Professional advancement of a teacher hinges on the development of all kinds of competencies and literacies. Information and communication technologies and digitalization of all spheres of human life have become the main trend of modern society. The modern society is steadily coming to grips with the need to raise people of a new kind who will become the representatives of yet non-existing professions (Kirschner et al., 1997; Kirschner & Stoyanov, 2020).

A number of studies focus on the development of information competence, which becomes a necessary component of the development trajectory for teachers, who are the transmitters of educational content through the lens of the development of competencies and functional literacy in children from the very first lessons at primary school (Tsareva et al., 2018; Pöntinen & Rätty-Záborszky, 2020).

The issues concerning development of professional competencies in the process of training of future teachers were considered at the level of content transformation (Nguyen et al., 2020; Shukshina et al., 2018) and at the level of technologies used in pedagogical practice (Vardanyan et al., 2018; Julia et al., 2020; Chiranova et al., 2020; Molchanova et al., 2020).

### 3 Research Methodological Framework

The research purpose is to explore the approaches to building individual professional growth trajectories for primary school teachers. The research objectives are to explore the motives for professional growth; to propose the methods to build professional growth trajectories for primary school teachers based on the revealed motives.

The research employed both theoretical methods, with priority given to the analysis of scientific literature, systematization of material on the problem of research, and empirical methods, in particular, observation, interview and testing.

The experiment was held in the academic year 2020 - 2021. It included 520 primary school teachers from 39 municipal educational facilities in Saransk (Republic of Mordovia, Russia). The first stage of experimental research using the achievement motivation questionnaire of A. Mehrabian (1981) helped to reveal motivational tendencies of teachers directed towards their professional growth. The questionnaire for measuring the achievement motivation is aimed to reveal two generalized stable motives of personality: the motive to achieve success and the motive to avoid a failure. Each person has a combination of two, with one of them prevailing. The experimental research assessed which of the two motives is dominant in a respondent. Since the test is essentially a questionnaire of two options (for males and for females), the anonymous respondents were only asked to identify their sex. The second stage of experimental research included the double (subjective and objective) questionnaire survey with the use of the teacher's professional competency assessment method (Tikhomirova, 2020).

#### 4 Results and Discussion

Presently, the education goals are undergoing major revision. The innovations extend not only to the vector of pedagogical process, but also the development of professionally relevant qualities of the modern teacher. Before the first priority of education was to ensure that students possess a certain set of knowledge, skills and abilities, but today the primacy is given to the healthy lifestyle, to raising creative personalities while cherishing their distinctness and authenticity. For a teacher to be able to help a child develop the above-mentioned qualities, the teacher himself/ herself should be continuously seeking professional self-improvement. Only a professional teacher will be capable to handle the arising problems.

Continuous professional development is necessary for a teacher to adjust to ever changing content and forms of education, to adequately respond to the need to develop new learning programs, methods, techniques and ways of their implementation in practice. This renders high flexibility to the process of professional development envisaged by the Bologna Agreement.

Presently, it seems reasonable to distinguish four steps which a teacher climbs up in their professional advancement.

The first step corresponds to the level of a fledgling teacher, or pedagogical skillfulness. When on this step, a teacher gets the right to undertake pedagogical activities after obtaining diploma and completing all qualification tests satisfactorily. This level is virtually the foundation for professional growth of a teacher, and when there is no such foundation, it means the impossibility to teach at school. The fledgling teacher is able to set goals and formulate objectives, knows the lesson's structure, may select the content adequate to the studied topic and use the educational technologies appropriate to a certain situation.

The second step is the level of advanced teacher, or pedagogical excellence. The activity of a teacher who is firmly standing on this step can be characterized by demonstration of high level of professional competencies in practical activities. An excellent teacher has deep knowledge of their subject, and skillfully uses in practice their psychological and pedagogical knowledge, incorporates the recent advances in organizing the process of teaching and upbringing.

The third step is the level of a methodologist-teacher, or pedagogical creativity. A teacher who reaches this level has the ability to transmit teaching methods and technologies to other teachers; and uses innovative approaches without breaking the conventional teaching system. These teachers make great mentors.

Mentoring teachers are worth a separate discussion. Within the frames of this discussion, a mentor is important because he or she can guide and stimulate a novice teacher's professional growth from the very beginning. Emotional stress associated with the beginning of a new activity requires activation of all

internal resources, which is possible sometimes only through the help of a person from outside, a mentor. The correctness of the initial vector will determine all the further way of the fledgling teacher up the steps of the pedagogical ladder.

And the fourth step is the level of a researcher-teacher, or pedagogical innovativeness. A teacher who has reached this level has the ability to consolidate the existing professional experience and develop new educational technologies, to test them and to implement innovative technologies into the educational process, thereby improving the quality of education in general.

The demands placed on modern teachers sound louder every day. It becomes crucial that each of the modern teachers sets goals for themselves, achieves them, and becomes able to apply the obtained results not only within the school walls, but also outside them. The teacher should be able not only to learn from the experience of others, but also to transmit their own experience, which means that building a trajectory of professional growth should be the teacher's own initiative coming from within.

But do all representatives of the teaching profession have a strong motivation to climb up the numerous steps on their way to excellence?

In the academic year 2020-2021, an experimental study into the motivational sphere was conducted among 520 elementary school teachers from 39 general educational facilities of the city of Saransk (Republic of Mordovia, Russia). Conducted experimental research allowed to identify motivational tendencies which, according to psychologists, can be divided into two opposed groups: striving for success (the motive to achieve success) and anxiety to avoid a failure (the motive of avoiding failure) (McClelland, 1965; Atkinson, 1974; Heckhausen, 1986).

If somebody is motivated by the avoidance of failure, they try to organize their behavior, and when they are teachers, their pedagogical activity in such a way that there are as few mistakes, miscalculations, inaccuracies as possible. Such a person will never take risks, which means will never experiment or try to use something new and extraordinary in their work. Naturally, in case of such a teacher, new technologies will remain new, untouched, and unused. Such an attitude hinders not only the professional growth of a certain teacher, not only impedes the development of certain students, but also obstructs the educational process as a whole.

If somebody is motivated to achieve success, they are ready to overcome obstacles, solve problems and are looking for new approaches. Such a teacher is not afraid to take risks, use innovative approaches and cutting-edge methods in his/her work. Such an attitude spurs the teacher's professional growth, invigorates students and makes a positive contribution to the development of the educational process in general.

It is believed that people strongly motivated to win, achieve much more in profession, compared to those who have a weaker motivation or no motivation at all. Possessing information about motivation of each teacher, it becomes possible to predict with a high degree of accuracy the probability that this teacher will express creativity in their professional activity.

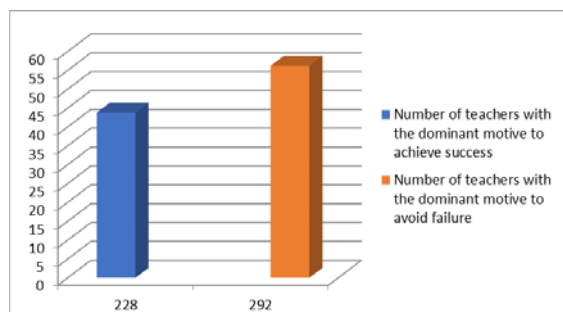
For assessing the motivation for professional growth, the achievement motivation questionnaire of A. Mehrabian (1981) was used.

Analysis of the obtained data led us to the conclusion that, unfortunately, 56.2% of the primary school teachers who took part in the survey demonstrated motivation to avoid failure. This indicates that in order to facilitate their productive creative activity specific organizational-pedagogical efforts should be taken. 43.8% of the respondents who agreed to participate in the experiment demonstrated their striving for success, and readiness

to overcome obstacles that may be encountered in pedagogical activity and to adequately solve arising professional problems.

The results of the survey based on the achievement motivation questionnaire of A. Mehrabian (1981) are presented in Figure 1.

Figure 1 The survey results based on the achievement motivation questionnaire of A. Mehrabian (1981)



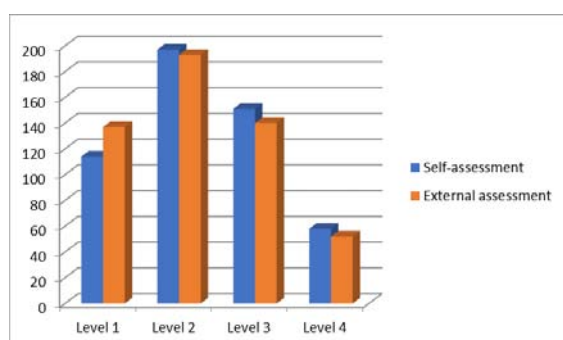
Source: authors' own processing

Having analyzed the differentiation of primary school teachers in the motivational sphere, we conducted a study using the teacher's professional competency assessment method (Tikhomirova, 2020) to find out how teachers see themselves on the ladder of professional growth. The validity of this assessment method has been tested and verified. The method consists of a questionnaire with 45 binary questions (two alternatives are offered as answers - Yes or No).

For objectivity of the conducted research, the teachers' self-assessment was supplemented with non-participant observation carried out by methodologists and deputy principals of general education facilities. The observation sheets included items correlating with the questionnaire items. Statistical processing of the collected data showed that there were some differences in assessment, but they were insignificant, from 0.8 to 0.9. Correlation between the observation results and the questionnaire results was found to be 96%.

Figure 2 shows the results of self-assessment and non-participant observation under the method of O. V. Tikhomirova (2020).

Figure 2 The results of self-assessment and non-participant observation under the method of O. V. Tikhomirova (2020)



Source: authors' own processing

Based on the data obtained in the experimental study, we can distinguish two main directions in building the professional growth trajectories of primary school teachers. The first direction, creation of a competitive and professional environment, will contribute to satisfaction of the teacher's need for continuous self-development and self-improvement. This may include participation in research and practice conferences, seminars, meetings, pedagogical marathons and professional competitions. Teachers may present their creative work on their own website, in messengers.

The second direction, creation of conditions for comfortable pedagogical activity for minimizing the level of anxiety and uncertainty, is important in helping those teachers whose motivation for professional growth leaves much to be desired.

It is known that in all spheres of activity, and educational activity is no exception, more and more weight is given to such personal qualities as social responsibility, adequate perception and agile response to new factors, independence and efficiency in decision-making, readiness for democratic communication, social engagement, the ability to quickly adapt to new conditions. All these qualities predetermine the competitiveness of a teacher.

With the data on the dominant motives of teachers and their current level of professionalism in hand, it becomes possible to build individual professional growth trajectories for each teacher.

## 5 Conclusion

A modern primary school teacher, pursuing continuous development in pedagogical profession, should be ready not only to strengthen the competences of students, but also to wisely build own trajectory of professional growth and continuous professional self-improvement.

A professional growth trajectory of each teacher should be individualized. An individual educational trajectory makes it possible to take into account professional and personal needs, experience of pedagogical activity, personal qualities of each teacher, and analyze their motives for this type of activity. The teachers in their work should be driven by the motive of professional growth and adequate professional self-assessment, and should have an aspiration to achieve the level of pedagogical innovativeness in a stepwise fashion.

Thus, the teacher will become able to successfully climb all steps up the ladder of professional development, while the individual professional growth trajectory will help the modern primary school teacher to become proactive, goal-oriented and competitive.

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## STUDENTS' SCIENTIFIC ACTIVITY AS A MECHANISM OF METHODOLOGICAL AND TECHNOLOGICAL SUPPORT OF THE PROFESSIONAL ESTABLISHMENT OF FUTURE SPECIALISTS

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Abstract: The paper substantiates the relevance of enhancing the role of science in professional training of future specialists. Analysis of scientific literature, scientific and methodological sources discussing questions of the role and importance of developing students' scientific potential and their spheres of scientific interests is presented. Factors affecting the development capacity of student science at higher educational institutions are detailed; the young students' scientific potential, the sphere of their scientific interests, and their attitude to scientific activity have been identified. The authors also outline and substantiate possibilities of enhancing the effectiveness of the activity line adopted by higher educational institutions for forming scientific research competencies in students.

Keywords: the information society, young students, scientific interests, scientific activity, the academic process.

### 1 Introduction

At the beginning of the 21<sup>st</sup> century, there was a surge in the relevance and importance of questions concerning methodological and technological support of the professional establishment of future specialists, regardless of their focus area and profile. The early 21<sup>st</sup> century was characterized by professional school's adopting the distinct stance expressed in the necessity of training future specialists in line with new challenges of the time, with the requirements of the oncoming information technology epoch. In the world community, specialists and scientists of all developed countries keep looking for yet new approaches, means, and techniques, developing models and technologies to help enhance the future specialists' level of professional training in conditions of professional learning.

As for training of young specialists, higher target professional level has resulted from many causes (pervasive globalization, the oncoming information epoch, capitalist production requirements, escalation of fierce competition among countries of the world community, marked growth of the role of science in the development of the countries' social and economic, military potential worldwide, etc.).

Currently, the realia are that as demonstrated by sociological surveys of all kinds, the contemporary Russian higher professional education is one step behind the needs of time and labor market. According to the data of the survey conducted by the Federal State Statistics Survey and the NRU HSE, 91% of Russian employers believe that "university graduates lack practical skills for work". Meanwhile, as noted in the research, over 25% of graduates get excessive education. Managers of Russian companies are dissatisfied with graduates' self-organization skills, ability to analyze, solve problems in non-standard situations, and they assess the graduates' professional preparation as 3,5-3,7 points of 5 (Russia: Why do Millions of Graduates Work not in Line with Their Speciality?, 2018).

As for both the Russian professional education system and needs of the developing labor market, the actual situation taking shape does not satisfy both parties – nor does it satisfy the Russian state and society in general. This problem is of the multi-factor nature, and its solution largely depends on coordinated effort of three parties: the Russian state, the system of education, and the labor market.

Practice shows serious difficulties, too, experienced by Russian higher professional education in its development. Here, causes are numerous (unjustified dismantlement of the previous pattern of the system of education; uncertainty in elaborating its development strategy, poor financing; disruption of the education management system at all levels; Russian young people's loss of stable motivation for systemic learning, and others).

Although education is adopted as the priority line of the state policy, improvement of the scientific constituent of Russian education is slow and challenging. Given the powerful development trend of the information environment, the science factor within the system of professional training of future specialists, regardless of their focus area and profile, currently represents an important point of the state policy engaged in development of the Russian state and its national security. Thus, the development of students' scientific activity within professional training turns into a highly urgent task.

This circumstance has stimulated the scientific group to work out the outlined range of problems and solve some questions of raising the level of student science.

### 2 Literature Review

When discussing topics related to the role of development of education and student science, many researchers indicate the necessity of upgrading the modern education, considering it to be the priority line in social and economic development of the Russian state and society (Kotukhov, 2014; Martynov, 2016; Chistyakova, 2016; Kislov, 2017; Nikitin, 2017; Subetto, 2017; Nagornova et al., 2018; Egorychev et al., 2019, 2020; et al.). Today a lot is also said about internationalization of science and education and its influence on the activities and career development of researchers (Chigisheva, 2015a; Chigisheva, 2015b).

So, speaking about the necessity of upgrading Russian education, A. N. Kotukhov (2014) notes quite fairly that "...if we are too late to "swing into the train of globalization", then we risk staying on the margins of the mainstream civilization development forever" (p. 653).

Taking a critical stance to the current condition of the country's professional education and its upgrade rates, A. G. Kislov (2017) points out that "... professional education, in high-tech, science-based professions at least, has to become advancing" (p. 9). As viewed by the authors, Russian education must achieve the world level in all focus areas and profiles.

It has to be noted that Russia's higher professional school is trying to develop mechanisms helping it function successfully, while accepting challenges of the new time. With regard to this, the most important mechanism for any higher educational institution of the country to act efficiently is the integral educational process of future specialists' professional training in all social spheres of Russia. It is in this process that all resources are contained to enable the country to massively deploy its vast social and natural potential available, responding to challenges of the new time (Belovodskaya, 2017; Bodina et al., 2018; Fedulov, 2019; et al.).

I. I. Belovodskaya (2017, p. 179) writes that higher school professional training needs new orientation of the pedagogical process, which is associated with the use of new pedagogical approaches, educational technologies, and the content of professional training of modern specialists. Meanwhile, the latter are expected to be able to solve difficult scientific and technical, design and engineering problems in the production process independently.

Discussing the same topic, Yu. P. Fedulov (2019) notes that currently, new trends for the system of education clearly manifest themselves in the world community, and they have to be taken into account when upgrading the said system. So, he outlines the principal trends as follows:

- they keep expanding the range of academic and organizational measures aimed at both meeting the students' diverse interests and developing their abilities;
- at higher educational institutions, the educational process is characterized by large-scale reinforcement with modern information technologies, extensive use of the Internet with its richest resources and rapid development of distance learning forms for students;
- the objectives, content, and technologies of higher professional education are updated on a regular basis; they adjust curricula proceeding from achievements of the scientific and technical, social advance, as well as requirements of the world standards of education.

The above and many other trends and processes having emerged at the beginning of the 21<sup>st</sup> century also require the new approach to organizing the professional training and upbringing (establishment) of the new person. This person must be able to respond to the endless flow of challenges brought by the oncoming information epoch – the society of knowledge where, as put by V. I. Vernadsky (1998), science will act as the determining "geological force" capable of creating the new rational world (noosphere).

However, as noted by many Russian researchers and experts, at present, the country's system of education is not quite ready to provide the labor market with proficient specialists for developing high-tech productions and organizing the sphere of various services getting more and more complicated.

It can be summed up with confidence that Russian professional education is currently in a difficult situation requiring fundamental comprehension of its upgrade process in part of the future specialists' professional training. This situation necessitates reinforcement of the scientific and creative constituents in the upbringing and educational process of higher educational institutions, too.

### 3 Research Methodological Framework

This research was both analytical and empirical in nature. It was built upon works of prominent Russian scientists (Aleksandrov, 2018; Belovodskaya, 2017; Beschasnaya & Shemchuk, 2018; Bodina et al. 2018; Gavrin & Rebysheva, 2015; Subetto, 2017, et al.) relying on their scientific concepts, theories, provisions, and principles determining design and performance of the research. The leading research approach is the dialectic one based on the laws of dialectics which allow using basic methodological principles (the scientific character, consistency, objectivity, systemicity, etc.) and viewing the problem in an integrated and consistent way. *The objective of the research* is to analyze the scientific potential and spheres of scientific interests of the RSSU students and to identify promising focus areas for developing it using the obtained results. *The principal tasks of the research are as follows:* to conduct analysis of scientific literature, scientific and methodological sources discussing questions of the role and importance of developing the students' scientific potential and their spheres of scientific interests in conditions of professional training at the university; to conduct a survey of the RSSU students for finding out their scientific potential, sphere of scientific interests, and attitude to scientific activity; to identify conditions enhancing motivation for

scientific research work in the teaching staff (TS) and students of the university.

The selective survey involved 894 students (respondents) of years 1-4 (bachelor degree students) and years 5-6 (master degree students). The participants were representatives of 14 faculties of the Russian State Social University (RSSU) studying in the focus areas of training provided by the faculties of: social work, A. G. Schnittke higher school of music, the humanities, information technologies, communicative management, medicine, linguistics, psychology, social sciences, administration, physical training, ecology and technosphere safety, economics, and law. The age of the questioned ones ranges within 18-25, with 590 of them being young women, and 304 – young men. The information collection methods included talks and questionnaire survey.

### Data Collection and Analysis Toolkit

The survey included three stages:

- *the theoretical one* (analysis of scientific literature on the said problem);
- *the empirical one* (collection of materials characterizing the students' scientific potential and sphere of scientific interests, their attitude to scientific activity);
- *the final one* (processing of the research materials and based on them elaboration of promising problem-solving lines).

Results of the first (theoretical) stage of the research have enabled the authors to clearly lay out the second (empirical) stage, conducted within the time span of April 04 – December 21, 2020. The empirical research toolkit was developed which included the questionnaire "Your opinion on the university students' scientific research initiative in their professional training" for surveying the students of RSSU.

The questionnaire consisted of 3 units as follows. *Unit 1* "Some information about you" contained the request to specify the faculty, professional focus areas of training, year of studies, sex, and age of the students. *Unit 2* "Professional training" had only 3 items concerning the academic performance of the surveyed ones and their satisfaction with the process of learning. *In unit 3* "Scientific research work", there were 15 questions, with 14 of them suggesting answer options to choose from, and one of them implying free expression only. The questions touched on various aspects of organizing the university's student scientific research work, its role in their professional training, the students' extent of satisfaction with the said organization, and so on. Meanwhile, almost all suggested questions had the free answer option to voice one's opinion. The obtained results of the sociological survey of the RSSU students were subjected to mathematical processing, scrutinized, generalized, and conclusions have been made as appropriate.

### 4 Results and Discussion

This scientific research addressing the development of students' scientific potential and spheres of scientific interests in conditions of their professional training is associated with the following reasons. First of all, the Russian state and society need specialists of the new level possessing the high scientific resource and innovation thinking up to challenges of the oncoming information technology epoch. It is also conditioned by the necessity to advance the upbringing and educational process at the university as for the focus areas associated with cultivating the high level of the students' (young students') scientific potential, foster their interest in scientific research activity within the professional domain being mastered. Finally, higher educational institutions need promising methodological and technological support of the professional establishment of future specialists.

#### 4.1 Analysis of Scientific Literature, Scientific and Methodological Sources Discussing Questions of the Role and Importance of Developing Students' Scientific Potential and Their Spheres of Scientific Interests within Professional Training at Higher Educational Institutions

The research required an in-depth analysis of scientific literature dealing with questions of the role and necessity of developing the scientific potential in young people studying at the modern higher educational institutions. So, various concepts, scientific provisions, and theories touching on the theoretical and methodological framework of the problem of this research have been analyzed, compared, and contrasted. It has been found that currently, many aspects of the problem of the modern professional education functioning and progress, as well as the question of training of highly-skilled specialists for all spheres of the society, draw the attention of both foreign and Russian scientists and specialists from the most diverse domains (politicians, philosophers, social scientists, historians, economists, and so on). Alongside this, the following principal scientific fields related to the outlined problem of the research conducted have been identified; they are also worked out in the scientific and educational community extensively:

- the role and importance of the modern science and education in development of the world community;
- the phenomenon of risk in the sustainable development of modern society associated with setback of the institution of general and professional education;
- conceptual bases of philosophy, methodology, and anthropology pertaining to the development prospects of modern education;
- kinds of competencies, quality, assessment of development state and prospects for modern education;
- students' scientific research activity at higher educational institutions, its effect on the process of forming professional readiness in future specialists;
- pedagogy and psychology of higher school: optimization of the young students' professional training process.

It has to be noted that both Russian and foreign scientific literature contains rather numerous materials addressing the development of scientific potential in students as the pivotal competency of higher educational institution graduates. Irreversibility of the powerful trend of sociocultural and information technological processes witnessed by the modern world community of the early 21<sup>st</sup> century is understood and recognized, too. Proceeding from this, most authors share the viewpoint that it is the scientific constituent that acts as the necessary (profile) basis in professional training of future specialists in virtually any focus area (Gavrin & Rebysheva, 2015; Filatova, 2015; Suprun & Khalikova, 2016; Aleksandrov, 2018; Beschasnaya & Shemchuk, 2018; Tamochkina, 2018; et al.).

A group of Russian authors (Bezruchko et al., 2018) have attempted to identify the following clusters of competencies of the nearest future.

1. *Ability to interact and co-operate with others.* It makes up the first and largest cluster of "competencies of the future".
2. *Thinking and problem-solving.* This cluster ranks second in size, incorporating 15 competencies.
3. *Aptitude for learning and openness to the new.* This one rounds out the above top three, respectively.
4. *Innovation and creativity.* This set of competencies implies first of all braveness, readiness for experimenting creatively and making mistakes.
5. *Digital knowledge and skills.* This group includes programming, the knowledge of fundamental robotics, and the ability to understand and use new technologies.
6. *Awareness and self-management.* This involves the ability to control one's attention, find meaning in work and life, resilience, the ability to build one's own plans and to understand oneself in general.

The said authors note that "these six clusters encompass around 80% of "competencies of the future"... They are no individual skills to be "leveled up" quickly, but they are elements of one's personality" (Bezruchko et al., 2018).

It is quite clear that specialists have to seamlessly integrate the professional and the personal within themselves in the nearest future. According to the authors, this requires elaborating the new educational paradigm, new methodological framework in organization and fulfillment of the upbringing and educational process at higher school.

Many modern Russian researchers (Filatova, 2015; Tamochkina, 2018; Nagomova et al, 2018; et al.) are convinced of the necessity to update the upbringing and educational process in higher professional education and to orient it to forming the research competency in future specialists.

L. B. Filatova (2015) writes: "Scientific research work is a professional activity, so it is important to consider the process of staged and consistent cultivation of specialists' research competency during their studies at higher school and postgraduate education" (p. 47).

O. A. Tamochkina (2018) believes that training of highly creative specialists is unthinkable without involving creativity, creative self-fulfillment, and building up students' creative potential in conditions of higher school.

When the future specialists' level of preparation for activities in the information technology society is discussed, there is certainty that the said specialists have to possess not only the required total of basic and special knowledge, but also certain skills of creatively solving practical problems; they also have to continuously upgrade their qualification and quickly adapt to changing conditions. All these qualities have to be shaped at higher educational institutions by means of students' active participation in scientific research work. The latter gains increasingly high importance at the current stage and turns into one of the principal components in professional training of future specialists.

Analysis of the array of scientific materials discussing the student science development problem allows making the following conclusion. *In conditions of modern Russian higher educational institutions, professional training of future specialists, regardless of their focus area and profile, requires the consistent and focused state policy. This policy has to be targeted at the systemic upgrade of professional education; within the latter, the priority place has to be given to preparation of future specialists for scientific activities in their professional domain.* So, A. S. Gavrin and L. V. Rebysheva (2015) are sure that "In the modern conditions, the role of the state in developing science and education is a prerequisite for building up the spiritual, intellectual, scientific and technical, social and economic progress of the Russian society and state, as well as for maintaining its national security".

#### 4.2 Sociological Survey of the RSSU Students Aimed at Finding Out Their Scientific Potential, Sphere of Scientific Interests, and Attitude to Scientific Activity

The first unit of the questionnaire, "Some information about you", was dedicated to some data required for the survey: name of the faculty, code of the professional focus area of training, year of studies, sex, and age of the students (see the data given in the section "Methodological framework of the research").

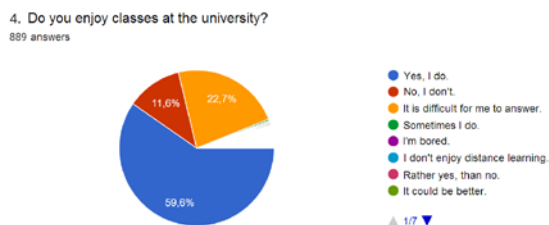
*The students' assessment of the level of knowledge they get at the university.* The results of sociological survey of the RSSU students obtained in the second unit of the "Professional training" questionnaire show that the students' opinion about the level of knowledge they get at the university looks not bad at first sight: the very high level was chosen by 7,2%, the high – by 20,7%, the good one – by 38,5%. The total here makes 66,4%. The satisfactory rating was given by 22,6% of the students, while the options of the unsatisfactory level and difficulty

answering the question were given by 10,1%. In general, the level of knowledge received at the university is rated as good (the very high, high, good one – 66,4%). Nevertheless, a significant quantity of the students (22,6%) assess the level of knowledge they get as satisfactory, while 10,1% give the unsatisfactory score, and 1,9% of the students have difficulty answering the question. That is, one third of the students (32,7%) take an extremely "anxious" stance. For the university, this is an alarm urging for both some reflection and for making decisions as necessary.

Similarly, the students' assessment of their own academic performance landed at a quite high level: 22,8% said they had excellent marks, 54,1% – good and excellent marks, 22,8% – mainly good marks but sometimes C marks, and 0,3% of the students said they got C marks mainly. According to results of the latest exam session, the students' self-assessment of their academic performance was positive enough. Summed up, the students who get excellent marks, good and excellent marks number 76,9%, while there are 22,8% of those mainly getting good marks but sometimes having C's. These figures are not bad, but there is the reserve getting mainly satisfactory marks – which is nearly one third of the students – 22,8%.

The rate of the students' enjoying classes at the university turned out to be at the fairly good level (see Figure 1).

Figure 1 The results of the students' answering the questions about enjoying the university classes



Source: authors' own processing

As it can be seen, 59,6% of the surveyed ones answered in the positive, with only so few as 11,6% saying no, and 6,1% marking insignificant options (such as "sometimes", "I am bored", "it could be better", "I do not enjoy distance learning"). The percentage of the students having difficulty answering (22,7%) is alarming. Satisfaction with the university studies is an important factor of well-being of the young students. So, the indicator showing that almost two fifths of the students (11,6% + 22,7% = 34,3%) are either dissatisfied or at a loss to answer kindles concern.

*The university students' appraisal of scientific research work.* The results of the sociological survey of the RSSU students obtained in the third unit of the "Scientific research work" questionnaire demonstrate that the young students' level of involvement into scientific research work is not high enough (37,7% of the students rated their participation at the medium level, 19% - at the low one, while 13,9% - at the very low level; 1,3% of the surveyed had difficulty answering the question, and only so few as 13,9% of the respondents marked the high rating). Moreover, almost one third of the questioned (28,1%) take virtually no part in scientific research work. All the above is indicative of the necessity of reinforcing this focus area in the activity of all structures of the university.

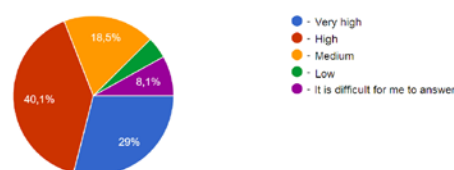
The principal reasons behind the young students' failure to get involved into the university scientific research activity are rather matter-of-fact: they lack motivation; they lack support on the part of their faculties; there are no scientific advisors; there are no conditions for working at home, and so on. The students noted some factors that could enhance their motivation for scientific research activity, too (16% of them believe it to be awareness building, 26% – introduction of material incentives). The said issues can well be addressed by efforts of the TS and administration of the university faculties.

Although the students give fairly positive and satisfactory opinions about the way scientific research activity is organized at the university, nevertheless, results of their answering the question "In your opinion, does the process of learning at the university contribute to forming researcher skills in the students?" look alarming. The obtained answers make one think: so few as a half of the surveyed students (54,8%) believe that the process of learning at the university helps form the students' researcher skills, one fifth of them (19,2%) answering in the negative ("It does not"), and almost one third of the respondents (26%) had difficulty answering. The findings speak for themselves: an in-depth analysis of this question is required.

According to the surveyed ones, the role of teachers is high enough in stimulating the students to participate in scientific research activity (Figure 2).

Figure 2 The results of the students' answering the question concerning the teachers' role in motivating the students to participate in scientific research activity

13. How do you rate teachers' role in motivating students to participate in scientific research work?  
876 answers



Source: authors' own processing

It can be seen that 40,1% of the students ("high") + 29% ("very high") = 69,1% - rated the said role as high and very high. 22,8% of the answers had the "medium" and "low" options, with 8,1% of the surveyed choosing "It is difficult for me to answer". Admittedly, the students show partial dissatisfaction related to their scientific advisors (e. g., the scientific advisor hardly interacts; it is difficult to find a scientific advisor). Nevertheless, the respondents believe teachers can get the students interested in scientific activity (hold scientific practical classes on certain topics; organize meetings with scientists and practitioners dealing with problems related to the faculty students' professional training; hold scientific conferences in the subjects under study; involve the students into working on their own scientific research projects, and so on).

*The students' view on cultivating motivation for practicing science.* The students taking part in the sociological survey (the open answers) voiced their wishes for the university management as for ways how they can spark the interest in the students to pursue science. So, creative meetings with the students can be organized; permanent scientific centers can be set up at the university to conduct research in educational and professional profiles of the university, with foreign partners to be invited on a compulsory basis, including young researchers from the number of the best students. They can also revive the scientific outreach activity on the basis of the university – hold open public lectures of the leading scientists, open debate, presentations of scientific works, etc. with compulsory involvement of young students. The university's publishing activity can be well established, too, to cater for scientific needs of the student scientific community.

The results obtained in the course of the sociological survey are of certain interest for all specialists dealing with questions of professional training of the social university students for their future professional activity.

## 5 Conclusion

Results of the research conducted allow concluding that the set objective has been achieved and the tasks have been completed. Careful analysis of findings has enabled the authors to word a number of provisions adhering to which makes it possible to advance promising focus areas related to the development of

student science at universities. It is this that acts as the solution of the third research problem (identifying conditions to enhance motivation for scientific research work in TS and students).

Let the principal provisions and conditions be outlined.

1. The university's teaching staff act as the principal resource, factor, and condition contributing to organization of not only the upbringing and educational process at the university but also efficient organization of student scientific research activity. Motivation of the TS for inclusion into intensive scientific research activity jointly with students can be enhanced if the following conditions are met:
  - work of the university's and faculty's scientific community has to be scaled up in terms of popularizing its scientific research work;
  - academic boards have to be established to hold defense of theses for the degrees of candidate and doctor of sciences in the professional profiles of the university faculties;
  - information support and material basis of scientific research activity have to be improved by administration of the university and faculty.
2. *The university's scientific and educational sociocultural environment acts as an essential condition for building and reinforcing young students' motivation to be included into scientific research activity.* In its turn, this implies the necessity to:
  - include compulsory scientific practical classes into the mainstream educational program in all academic subjects (addressing particular topics);
  - consistently organize events for young students to meet prominent scientists and practitioners dealing with problems related to professional training according to the faculty profile;
  - consistently organize and hold scientific forums (conferences, round tables, etc.) up to the profile of the profession studied, with all students participating on a compulsory basis;
  - involve all students into working on their own mandatory scientific research projects within the student scientific community.
3. The system of awarding young students for their active participation in scientific research activity is a powerful stimulation factor for its development. It involves various kinds and forms of promotion for students having shown themselves in scientific activity. They can be recommended by the scientific board of the faculty (higher educational institution) for enrollment to a budget-funded place in postgraduate studies; they can be awarded personal scholarships; scientific business trips to another city or town can be provided by the higher educational institution for its best students; those having shown themselves in scientific activity can be included into teachers' scientific group, etc.

The results of the research can be of use not only within the higher education system but also at other levels of education (schools, lyceums, vocational schools, colleges), which can contribute to higher quality of the upbringing and educational process aimed at developing students' interest in scientific activity and forming the bases of their scientific research work. The said results can also be used in developing (supplementing, upgrading) the effective curricula and programs at higher educational institutions and colleges of the relevant profiles, the system of further education included.

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**Primary Paper Section: A**

**Secondary Paper Section: AM, AO**

## THE RESULTS OF PILOT EXPERIMENTAL WORK ON FORMING YOUNGER SCHOOLCHILDREN'S COMMUNICATIVE UNIVERSAL LEARNING ACTIVITIES IN THEIR STUDIES

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Abstract: The paper deals with developing, bringing together, and testing out of the model of forming younger schoolchildren's communicative universal learning activities in their studies, as well as finding out the trends of their progress in mastering the communicative activities. The model has been developed and its components – the target, content-related, processual, and criterial and diagnosing ones – have been described. The paper details the results of summative, formative and control stages of the pilot experimental work. They give evidence about the fact that based on educational organizations, communicative abilities of younger schoolchildren are formed proceeding from the developed model, as well as substantiated and tested out pedagogical conditions.

Keywords: communicative activities, younger schoolchildren, formation of communicative activities, model, pedagogical conditions.

### 1 Introduction

Russia is currently seeing sizeable change in all spheres of education, which is associated with change of the paradigm of training and upbringing of the young generation, as well as priority of the activity-based approach in the process of design and creation of new educational standards. Within the educational system, personal qualities are cultivated in students by forming universal learning activities which make up the backbone for new competencies. With regard to this, most researchers (Asmolov et al., 2008; Davydov, 1996; Kostromina, 2009, et al.) focus on students' self-education, self-development, the formation of general intellectual abilities in them which are associated with analysis and synthesis, generalization and independence in setting academic goals and designing ways for achieving them. This is why the process of forming universal learning activities, the communicative ones among them, becomes relevant.

According to the Federal law "On education in the Russian Federation" (2012), universal learning activities (ULA) are the total of ways of action and associated with them learning activity ways that ensure schoolchildren's ability to independently absorb new knowledge and abilities, self-develop, and self-improve. This standard stipulates the necessity of forming four kinds of universal learning activities (the personal, cognitive, communicative, and regulatory ones) in primary school students – corresponding to the main objectives of general education.

Analysis of research works on psychology and pedagogy, in particular, ones conducted under the guidance of A. G. Asmolov (2010), allows identifying two units of main ULA kinds corresponding to the key objectives of general education:

1. the personal unit;
2. the meta-subject unit (it includes regulatory, cognitive, and communicative ULA).

In this research, it is communicative universal learning activities (CULA) that are of interest, namely:

1. planning of academic cooperation with teachers and peers;

2. identification of the objective, participants' functions, and interaction ways;
3. conflict resolution;
4. management of partners' behavior (control, correction, assessment of their actions);
5. the ability to express one's thoughts in line with communication tasks and conditions at the sufficient extent of completeness and precision;
6. mastery of monological and dialogical forms of speech up to grammatical and syntactical standards of the native language, modern means of communication (Asmolov et al., 2008).

### 2 Literature Review

Communicative abilities were discussed in research works of E. A. Markushevskaya (2018), A. S. Baranova (2018), et al. Depending on the domain where the "communicative abilities" concept is used (in psychology, pedagogy, didactics, philosophy), its interpretation varies. By "communicative abilities", they understand the abilities of exchange, direct and mediated interpersonal communication. Conventionally, communicative abilities are the abilities to explain one's ideas correctly, properly, and clearly and to perceive the information from communication partners in a relevant way (Hasson, 2015). The study of S. K. Ovsyannikova's scientific works on communication (2011) allows defining communicative abilities as follows: they are the total of intended communicative activities, ways, and forms in the sphere of communication and interaction organization which enables one to build relationships with representatives of another social, moral, and cultural environment on a constructive basis and which forms communicative behavior styles in younger schoolchildren. In I. M. Mikhailova's definition (2018), communicative abilities are the mastery of mental and practical actions aimed at establishing and maintaining desirable relationships with people in the process of academic – and later professional – activity, against the background of digitization of both education and society.

B. S. Volkov (2010) believes communicative abilities to be a set of intended communicative activities based on an individual's high theoretical and practical competence which allows using the knowledge creatively for representing and transforming the reality. The development thereof is coupled with new personal formations taking shape in the sphere of intellect (Adair, 2016). Owing to the transition to learner-centered paradigm of teaching and changed requirements for FSES of primary general education (2009), the approaches to composition of learning, its principles have been changed; alongside these, wording and conceptual interpretation of individual notions have been modified, too. They have started considering communicative abilities in a more precise way, meaning "actions" (universal learning activities) by "abilities". Thus, in this research, by communicative universal learning activities, the authors understand a set of communicative theoretical and practical knowledge used for dynamic interaction in the society.

### 3 Research Methodological Framework

The objective of the research is to develop the model and test out pedagogical conditions of the process of forming younger schoolchildren's communicative universal learning activities in their studies.

Tasks of the research are as follows:

1. to identify the formation levels of younger schoolchildren's communicative universal learning activities;
2. to develop the model, substantiate, and test out pedagogical conditions for forming younger schoolchildren's

communicative universal learning activities in the course of their studies;

- to find out the younger schoolchildren's progress pattern in mastering communicative universal learning activities.

The pilot experimental work was conducted within the period from 2018 to 2021 covering three stages (the summative, formative, and control experiments) and was brought together on the basis of the municipal educational institution "Secondary comprehensive school No. 8" of Saransk urban district. Here, 28 younger schoolchildren of grade 4, aged 10 to 11 took part in the experiment as the tested ones (14 children made up the experimental group (the EG) and 14 – the control group (the CG)).

When carrying out the pilot experimental work, the authors used the following research methods: the theoretical (analysis of regulatory and statutory documents, foreign and Russian literature; generalization, systemization, and classification of research results) and empirical ones (the summative, formative, and control stages of the experiment). At the stage of the summative and control experiments, simulators were used which were developed in Microsoft PowerPoint 2010 software and registered with the Federal state unitary enterprise "Scientific technical center "Informregistr" (No. 0321903075, No. 0321903076). The simulators included 28 assignments each for each of the said experiment stages and ensured measuring the formation levels of CULA. Assignments of the simulators were more complicated or simplified, depending on the children's individual particularities. The diagnosing assignments were oriented to the content of educational subjects "Russian language", "Mathematics", and "The World Around Us". The answers to the assignments were calculated automatically according to the following criteria: 0 points – incorrect answers, 1 point – partially correct answers, 2 points – correct answers. During the formative experiment, the authors used the following methods of training: the verbal, visual, and practical ones; the explanatory illustrative, assisted discovery, and research ones. At the control experiment stage, the second simulator was used; its assignments were adapted taking into account the students' progress in mastering CULA. Depending on individual particularities of each child, instructions for performing the assignments could vary. The quantity of assignments and assessment criteria were similar to the ones presented in the first simulator employed in the course of the summative experiment.

#### 4 Results and Discussion

Let findings of the summative experiment be characterized. When performing assignments aimed at diagnosing the formation level of CULA (planning of academic cooperation with teachers and peers, statement of questions, conflict resolution, management of partners' behavior, the ability to express one's thoughts in line with communication tasks and conditions completely and precisely enough), it was so few as 14,29% of the EG students only (2 people) who dealt successfully with diagnosing tests and demonstrated the high level of mastery of speech abilities. This category of children identified the objective and functions of utterances effortlessly when communicating with the experimenter, named and substantiated ways of in-class interaction, and were active in answering questions. Completing conflict resolution assignments, they compromised, chose answers without recurring to a situation fraught with conflicts, and performed assignments in pairs while controlling the partner's actions. These students composed monologs easily and were active participants in dialogs. In the CG, 21,43% of the younger schoolchildren (3 people), completed the assignments successfully, just like the EG students. The assignments were completed partially by 35,71% of the EG tested ones (5 people). This part of the respondents had no difficulty identifying the objective and functions of utterances when communicating with the experimenter. However, they named and substantiated ways of in-class interaction if assisted by leading questions only, and they answered the experimenter's questions with brief phrases. Completing conflict resolution assignments, these students

compromised, chose answers without recurring to a situation fraught with conflicts, and performed assignments in pairs while controlling the partner's actions. Alongside this, they understood existence of various viewpoints but could not give reasons for their own stances. These students composed monologs easily; participating in dialogs, they made some mistakes in sentence structure. Similar mistakes in the assignments were found in 35,71% of the younger schoolchildren in the CG (5 people).

50% of the EG students (7 people) completed the assignments incorrectly. The younger schoolchildren of this group identified the objective and functions of utterances when communicating with the experimenter not without difficulty. Composing utterances presented a problem for them; if unassisted, they could not name and substantiate ways of in-class interaction and could hardly answer the experimenter's questions. When working on conflict resolution assignments, these children chose answers without falling back upon a situation fraught with conflicts but performed assignments in pairs struggling to control the partner's actions. As for composing monologs, the students had difficulty selecting the appropriate words. They participated in dialogs with multiple pauses, there was no substantiation in their reasoning, and they needed the experimenter's assistance for composing dialogs. Just like the said EG students, 42,86% of the younger schoolchildren in the CG (6 people) failed at the experimental assignments.

Results of the EG and CG performing the CULA diagnosing assignments are given in Table 1; here, it is clearly seen that the children have significant difficulty mastering the ULA to be formed.

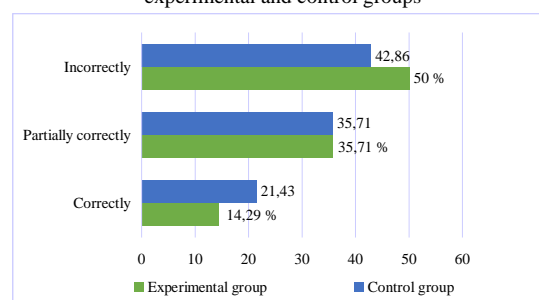
Table 1 Quantitative indicators of the formation level of universal learning activities in the younger schoolchildren

Diagnosed ULA	Answers											
	The assignment completed correctly		The assignment completed partially correctly		The assignment completed incorrectly							
	EG	CG	EG	CG	EG	CG						
	abs.	%	abs.	%	abs.	%	abs.	%				
Communicative ULA	2	14,29	3	21,43	5	35,71	5	35,71	7	50	6	42,86

Source: authors' own processing

Results of the EG and CG performing the CULA diagnosing assignments are given in Figure 1 illustrating the primary school students' results of mastering CULA.

Figure 1 Younger schoolchildren's performance of assignments diagnosing their communicative universal learning activities: the experimental and control groups



Source: authors' own processing

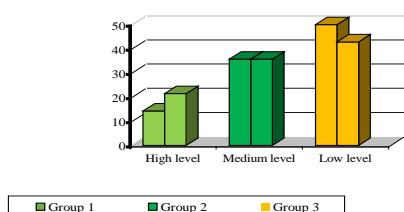
Relying on D. B. Elkonin's works (2006), the authors differentiated their findings into three levels: 0 points – the low formation level of CULA; 1 point – the medium formation level of CULA; 2 points – the high formation level of CULA. So, findings of the experiment allowed conventionally singling out three differentiated groups of the primary school students depending on their formation levels of CULA. The first group (14,29%) included the EG tested ones having the high formation level of CULA who performed all the suggested assignments independently and could correct a mistake by themselves if making one. In the CG, this group amounted to 21,43%. The second group (35,71%) included the EG tested ones with the medium formation level of CULA who made a minor quantity of



mistakes but needed prompts. Their answers were characterized by the relative independence and forethought, although there were attempts to complete the assignments by guess. In the CG, this part of the children was 35,71%. The third group (50%) united the EG tested ones who had the low formation level of CULA, got frequently distracted when performing the assignments, and had difficulty coming back to work. These students made a lot of mistakes and could not correct them independently, they got confused in the unknown words, too, and lost their interest quickly. In the CG, this group amounted to 42,86%.

Quantitative distribution of the primary school students into groups is visualized in Figure 2. Here, it can be seen that there are one and a half as many children having the low formation level of CULA as those with the medium level, and twice as many children with the low formation level of CULA as the tested ones having the high level.

Figure 2 Distribution of primary school students into groups depending on their formation level of communicative universal learning activities, EG and CG



Source: authors' own processing

Thus, results of the summative experiment conducted with the EG and CG have confirmed the authors' suggestion that forming CULA in the course of studies requires targeted organized pedagogical work with younger schoolchildren. The EG and CG students have demonstrated identical results at the assignments, which is confirmed by the qualitative and quantitative data. Results of the summative experiment have highlighted the necessity of organizing targeted training aimed at forming CULA.

For the integral perception and identification of the logic of forming communicative universal learning activities in younger schoolchildren, the authors have developed the pedagogical model and characterized its components. *The target component* of the model is composed taking into account the social mandate of the state and society as represented in the Federal law "On education" and the FSES of primary general education. The essence of this component is determined, first of all, by the development of motives, interests, and needs of children; secondly, by their realization of the importance of communicative activity. This component represents the target reference points in forming the primary school students' CULA and ensures the coordination of the expected result of the said formation of communicative universal learning activities with the social mandate and requirements of the regulatory documents. *The methodological component* of the model is represented by pedagogical approaches (the systemic, competency-based, learner-centered, and the activity-based ones) and principles (systemicity, consistency, differentiation, individualization) making up the methodological framework of forming younger schoolchildren's CULA. This component contributes to establishing methodological reference points and determines the logic of building the very process of forming younger schoolchildren's CULA. *The content-related component* of the model details the content of forming younger schoolchildren's CULA with the focus on universal activities:

1. planning academic cooperation with teachers and peers (identifying the objective, participants' functions, and interaction ways);
2. statement of questions (initiative cooperation in searching for and collecting information);

3. conflict resolution (problem identification, searching for and evaluating alternative ways of conflict resolution, decision making and fulfilling);
4. management of partners' behavior (controlling, correcting, assessing their actions);
5. the ability to express one's thoughts in line with communication tasks and conditions completely and precisely enough (mastery of monological and dialogical forms of speech according to grammatical and syntactical standards of the native language, modern means of communication).

*The processual component* of the model represents forms, methods, and means of forming younger schoolchildren's CULA. This component implies the practice-oriented nature of the formation of CULA, which is achieved by using diverse forms, methods, and means contributing to higher motivation for mastering the communicative abilities. The same component includes pedagogical conditions. *The criterial and diagnosing component* incorporates the criteria (planning of academic cooperation; identification of the objectives, functions, and interaction ways; conflict resolution; management of partners' behavior; completeness and precision of the expression of one's thoughts; mastery of monological and dialogical forms of speech) for monitoring the progress in formation levels of CULA, indicators (the ability to plan academic cooperation with teachers and peers; the ability to identify the objective, functions, and ways of interacting with others; the ability to resolve conflict situations; the ability to control communication partners' behavior; the ability to express one's thoughts up to the tasks and conditions of communication completely and precisely; the ability to use monological and dialogical forms of speech according to standards of the native language and modern communication means), and levels (the high, medium, and low). This component allows interpreting the diagnosing data, cross-referencing them to each other, and conducting qualitative and quantitative analysis of the results of forming communicative universal learning activities. The authors believe that in the case of building academic work in line with the pedagogical model described, significant progress in mastering CULA will be observed in younger schoolchildren.

To form the younger schoolchildren's CULA, the authors have substantiated and tested out the following pedagogical conditions in the course of the formative experiment:

1. analysis of the training complex "School of Russia", in particular, of the content of study subjects such as "Russian language", "Mathematics", "The World Around Us", for making relevant the communicative material;
2. formation stages of communicative universal learning activities;
3. the use of active organizational forms, methods, and means for forming communicative universal learning activities.

*The first pedagogical condition* was fulfilled during classes in study subjects such as "Russian language", "Mathematics", "The World Around Us". The authors conducted training of the younger schoolchildren in the EG, with an emphasis on the targeted organized process of forming CULA at the lessons. CULA were formed in conditions of the educational environment of the municipal educational institution "Secondary comprehensive school No. 8". The basis of the research was provided by the content of the "School of Russia" educational program which is one of the most widely known and rather successfully absorbed by all children. The primary objective of the program is regulation of various aspects of mastering the learning activities by means of the "School of Russia" package, the communicative ones included. In the said educational environment, the formation of CULA was carried out within the context of mastering various study subjects such as "Russian language", "Mathematics", and "The World Around Us". It should be noted that the content of any subject possesses a certain potential for forming CULA in primary school students.

Within bringing together of *the second condition*, the authors have singled out and updated the following six stages of forming CULA. At the first stage, academic cooperation with teachers and peers is planned (during the work, the activity plan for the class was discussed jointly with the schoolchildren). The second stage is associated with identifying the objective, functions, and interaction ways (the authors conducted work on identifying the objective and functions of this process with the younger schoolchildren in relation to teachers and peers, and ways of in-class interaction were found out and used). The third stage involves conflict resolution (during the work, conflicts were found, the problem was identified, and alternative ways of resolving the conflict were searched for and evaluated jointly with the children; i.e., questions were discussed as for how one can perform a particular assignment without entering a conflict, by finding a compromise solution). Next, the fourth stage suggests managing partners' behavior (work in pairs and micro-groups was conducted where the students performed controlling, correction, and assessment of their communication partners' actions; various kinds of assistance were offered to the students). The fifth stage is given up to the ability to express one's thoughts in line with communication tasks and conditions completely and precisely enough (certain tasks were set for the children, and conditions were identified for them to express their thoughts completely and precisely). Finally, the sixth stage is focused on mastery of monological and dialogical forms of speech according to standards of the native language and modern communication means (intensive work was conducted to cultivate monological and dialogical forms of speech according to grammatical and syntactical standards of the native language, modern means of communication; various assignments were offered to the children for them to prepare and present their speech independently or to compose dialogs in pairs).

Within *the third condition*, active organizational forms, methods, and means of forming CULA have been tested out. The following organizational forms of teaching were used extensively: the frontal (classes of various types and kinds), group (creative assignments and projects), and individual ones (individual talks and assignments). While carrying out the said forms of teaching, various teaching methods were used efficiently: the verbal, visual, and practical ones; the assisted discovery, explanatory illustrative, and research ones. The teaching aids used by the authors included the verbal (teacher's speech, word) and visual ones (diagrams, pictures, visual aids, videos, presentations).

Let the students' progress in mastering CULA be demonstrated, as represented by results of the control stage of the pilot experimental work. When performing assignments aimed at diagnosing the progress in formation levels of CULA (planning of academic cooperation with teachers and peers, statement of questions, conflict resolution, management of partners' behavior, the ability to express one's thoughts in line with communication tasks and conditions completely and precisely enough), 71,43% of the EG students (10 people) dealt successfully with diagnosing tests and demonstrated the high level of mastery of speech abilities. The children of this group identified the objective and functions of utterances effortlessly when communicating with the experimenter, named and substantiated ways of in-class interaction, and were active in answering questions. Completing conflict resolution assignments, they compromised, chose answers without recurring to a situation fraught with conflicts, and performed assignments in pairs while controlling the partner's actions. These students composed monologs easily and were active participants in dialogs. In the CG, 28,57% of the younger schoolchildren (4 people), completed the assignments successfully, just like the EG students. The assignments were completed partially by 21,43% of the EG tested ones (3 people). The children of this group had no difficulty identifying the objective and functions of utterances when communicating with the experimenter. However, they named and substantiated ways of in-class interaction if assisted by leading questions only, and they answered the experimenter's questions with brief phrases. Completing conflict resolution assignments, these students compromised, chose answers

without recurring to a situation fraught with conflicts, and performed assignments in pairs while controlling the partner's actions. Alongside this, they understood existence of various viewpoints but could not give reasons for their own stances. These students composed monologs and participated in dialogs making some mistakes in sentence structure. Similar mistakes in the assignments were found in 42,86% of the younger schoolchildren in the CG (6 people). 7,14% of the EG students (1 person) completed the assignments incorrectly. The student of this group identified the objective and functions of utterances when communicating with the experimenter not without difficulty. Composing utterances presented a problem, the schoolchild could name and substantiate ways of in-class interaction if assisted by leading questions and could hardly answer the experimenter's questions. When working on conflict resolution assignments, the student chose answers without falling back upon a situation fraught with conflicts but performed assignments in pairs struggling to control the partner's actions. When composing monologs, the schoolchild had difficulty selecting the appropriate words. The student's participation in dialogs was characterized by multiple pauses, reasoning – by the lack of substantiation, and the experimenter's assistance was needed for composing dialogs. Just like the said EG student, 28,57% of the younger schoolchildren in the CG (4 people) failed at the experimental assignments.

The progress of the EG and CG younger schoolchildren in mastering CULA is given in Table 2; here, significant changes are clearly seen in the EG students' mastering CULA after the targeted organized training which was conducted with the created pedagogical conditions borne in mind.

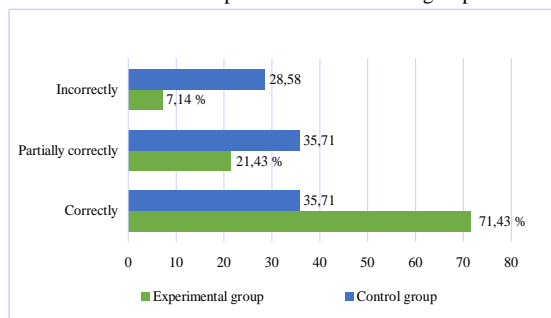
Table 2 Analysis of the formation level of universal learning activities detected in the younger schoolchildren

Diagnosed ULA	Answers											
	The assignment completed correctly		The assignment completed partially correctly				The assignment completed incorrectly					
	EG		CG		EG		CG		EG		CG	
	abs.	%	abs.	%	abs.	%	abs.	%	abs.	%	abs.	%
Communicative ULA	10	71,43	5	35,71	3	21,43	5	35,71	1	7,14	4	28,58

Source: authors' own processing

Results of the EG and CG performing the CULA diagnosing assignments are given in Figure 3 illustrating the primary school students' progress in mastering the communicative abilities.

Figure 3 Younger schoolchildren's performance of assignments measuring their progress in communicative universal learning activities: the experimental and control groups

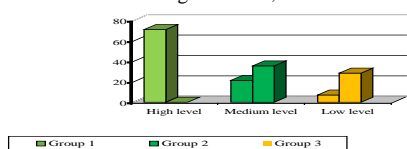


Source: authors' own processing

The findings were processed according to the above criteria used at the summative experiment stage. Findings of the control experiment allowed conventionally singling out three differentiated groups of the primary school students depending on their formation levels of ULA. The first group (71,43%) included the EG tested ones having the high formation level of CULA who performed all the suggested assignments independently and corrected mistakes themselves if making any. In the CG, there were 28,57% of the students having the high level. What can be seen is significantly improved results of the EG after the training conducted by the authors versus minor

steps up of the CG with whom no training was conducted. The second group (21,43%) included the EG tested ones with the medium formation level of CULA who made a minor quantity of mistakes but needed prompting. Their answers were characterized by the relative independence and forethought, although there were attempts to complete the assignments by guess. Here, this group was smaller in number, unlike the CG which amounted to 35,71%, so the result demonstrated by it is similar to the summative experiment one. The third group (7,14%) included the EG tested ones who had the low formation level of CULA, got frequently distracted when performing the assignments, and had difficulty coming back to work. These students made a lot of mistakes and could not correct them independently, they got confused in the concepts unknown to them, too, and lost their interest quickly. In the CG, this group amounted to 28,57%. Again, here, significant progress in mastering CULA can be observed in the EG students as compared to minor shifts of the CG. Quantitative distribution of the tested ones into groups is visualized in Figure 4 from which the significant progress of the younger schoolchildren in mastering CULA in their studies is evident.

Figure 4 Distribution of primary school students into groups depending on their formation level of communicative universal learning activities, CG and EG



Source: authors' own processing

Thus, results of the final diagnosing have shown that the younger schoolchildren did better at the experimental assignments after targeted training. This is confirmed by noticeably higher quantitative and qualitative indicators of the younger schoolchildren from the EG, as distinguished from the results of the CG students. Results of the research have shown the efficiency of diagnosing conducted by means of the digital simulator. Proceeding from the above, the data of the control experiment have proven efficiency of the substantiated and adapted pedagogical conditions (analysis of the training complex "School of Russia", in particular, of the content of study subjects such as "Russian language", "Mathematics", "The World Around Us", for making relevant the communicative material; formation stages of communicative universal learning activities; the use of active organizational forms, methods, and means for forming the younger schoolchildren's CULA).

## 5 Conclusion

Analysis of literature has enabled the authors to define "communicative universal learning activities" as a set of communicative theoretical and practical knowledge aimed at efficient interaction in the society.

The model of forming younger schoolchildren's CULA in their studies represents a "designed object" which inherits the entire structure of formation of the said activities in an integral and consistent way, demonstrating it in a simplified and clear form. The model of forming CULA is viewed as a poly-component structure consisting of the following components: the target, methodological, content-related, processual, and the criterial and diagnosing one. Pedagogical conditions for bringing together the model of forming younger schoolchildren's CULA have been substantiated and adapted.

Results of the summative experiment representing the younger schoolchildren's formation levels of CULA are shown. So, 14,29% of the tested ones from the EG and 21,43% of the CG students had the high formation level of CULA. 35,71% of the EG children and 35,71% of the tested ones from the CG had the medium formation level of CULA. The low formation level of CULA was found in 50% of the EG tested ones and 42,86% of the CG students.

By comparing results of the summative and control stages of the experimental work, the progress trend can be traced in the younger schoolchildren's formation levels of CULA. A steady growth pattern is observed in the quantity of younger schoolchildren being at the high and medium formation levels of CULA. The data obtained confirm the correctness of the hypothesis suggested and give evidence about positive results of work on forming CULA in the primary school students. Testing out of the pedagogical conditions developed by the authors has contributed to the schoolchildren's mastering certain communicative skills. So, 71,43% of the tested ones from the EG and 28,57% of the CG students have reached the high formation level of CULA. The medium formation level of CULA has been found in 21,43% of the EG schoolchildren and 35,71% of the CG tested ones. 7,14% of the EG students and 28,57% of the CG tested ones have the low formation level of CULA.

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## Primary Paper Section: A

## Secondary Paper Section: AM, AN

## THE ROLE OF INTERACTIVE METHODS IN TEACHING SOCIAL SCIENCE FOR DEVELOPING THE RESEARCH COMPETENCE

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Abstract: Today, the current education policy in our country provides for the phased self-development of student's personality aimed to develop their framework of applied research and value orientations. The modern school strives to intensify the process of training and education by implementing various innovative technologies. Thus, the use of interactive training methods is an effective way to develop different competences, such as, for example, the research competence implying the ability to make hypotheses, build the research plan, select most appropriate methods by examining literature and systemizing the collected data. It seems logical that the development of a research competence is possible through the school subject Social Science, as its content implies self-reflection and perception of own self as a part of community.

Keywords: research competence, interactive methods, competence-centered approach, project methods, discussion, debates, business games.

### 1 Introduction

Presently, the development of research competence is highly relevant, as the informational society places ever changing demands on each and every person, since the resource of information gains ultimate importance. Everybody should be able to handle different kinds of information, to identify problems, to find and assess possible ways to solve them. Until recently it was assumed that the research skills were needed only by those who work in universities and research and development centers, while now such skills are becoming integral to every profession (Chekushkina et. al., 2020).

The course of social science is highly important for establishing essential elements of social, moral, legal, economic, and political culture, since practical orientation and the possibility to apply the acquired knowledge and skills for solving problems in public life are the main objectives of the course.

As shown by practice, students experience the major problems when dealing with the tasks related to searching for, analyzing and systematizing social information, making judgements and reasoning, using examples to illustrate the studied theoretical postulates (Shamigulova, 2013).

The methods of interactive learning may be useful in addressing such problems, as they engage various psychic processes, thus boosting creative thinking and in general invigorating it. At the emotional level, a positive attitude to solving problems develops. The situations of success, that are phased, strengthen the intrinsic motivation, giving rise to a desire to continue a specific type of activity bringing it further than was initially required (Nilson, 2010). The cognitive processes strengthen analytical skills, imagination and help to overcome the inertia of thinking (Chekushkina & Rodina, 2015).

The use of such methods of training as discussion, debates, business games, project method fuels the development of research competence and in general facilitates implementation of the personality-centered training.

### 2 Literature Review

Amidst profound social changes, our state puts forward new imperatives for the education of citizens. Nowadays, the competence-centered approach has been proclaimed in the

educational process, which is a modern approach to the process of learning and modernization of education.

The competence approach in education has been studied by different scholars such as I. A. Zimnyaya (2004), O. E. Lebedev (2004), A. V. Khutorskoy (2003) and others.

This approach implies independence in setting the goals of cognitive activity, selecting information sources, explaining cause-effect relations, choosing directions in all areas of life, etc. (Safonova et. al., 2020).

According to A. A. Verbitsky (2009), "the ultimate goal of competence-based education is not the acquisition of a certain amount of knowledge in the disciplines studied at school, but the acquisition of certain competences and building of general competency" (p. 81).

According to modern scholars of education, today the acquisition of different competences gives the ability to respond quickly to the problems of society. Various authors put their own meaning in the content of this concept. For instance, A. V. Khutorskoy (2003) offers the following interpretation: "competence is a combination of interrelated qualities of personality which reflect requirements to the quality of education of graduates" (p. 59).

Doctor of Science in Pedagogy G. S. Vyalikova (2006) defines competence as "informational awareness, profound knowledge of a particular subject, on the one hand, and the range of certain powers, rights, on the other hand" (p. 29).

In V. M. Polonsky's (2004) dictionary, the following definition is provided "competence is a sum of certain knowledge, skills and abilities in which a person should be proficient and should have practical experience" (p. 45).

Having examined some explanations of the concept "competence", we may see that as yet there is no single interpretation, while on the basis of the above definitions a conclusion can be made that the concept "competence" is based on different key aspects: "a combination of personal qualities", "informational awareness", "readiness to take action", "an alloy of knowledge, abilities, skills and personal characteristics of a student" (Weinert, 1999, p. 35).

In the system of school education, the competence-centered approach is developed by A. V. Khutorskoy (2003). He identified a range of competences that every schoolchild should obtain: value-meaning, general cultural, learning and cognitive competences, communicative, social-labour competences, personal self-improvement competences, and information competences (Khutorskoy, 2003).

The research competence belongs to the group of information competences. At present time, there exist many points of view on the definition of this concept differing in what constitutes the core of the definition.

Doctor of Science in Pedagogy, A. V. Barannikov (2008), defines research competence as a combination of skills in receiving and processing the information, finding various sources of information and using them in practice, systematizing information in independently organized activities. These skills, in his opinion, can be developed through any of the academic subjects.

Russian psychologist and educator A. I. Savenkov (2008) believes that "research competence is a special functional system of psyche with its associated holistic set of human qualities which help a person to become an efficient subject of activity" (p. 32).

Based on the analysis of the given definitions of the concept "research competence", we understand under this concept, the necessary quality of the learner, including knowledge, abilities and skills, aimed at the development of research abilities, as well as the drive for self-education.

Using the scheme of research competence of a teacher proposed by E. V. Nabieva (2008) and the list of the most important characteristics, it is important to highlight the main components of research competence: cognitive (gnostic), motivational-personal, intellectual-creative and substantive-operational.

Development of research competence occurs through implementation of research activity by students, which boosts their intellectual potential when they apply their knowledge in practice and produce something new. Engagement of high school students in research activities sparks their cognitive interest, teaches them to predict their actions and deeds (Habermas, 1995).

As a result of phased efforts that include identifying the technologies to be used in the project, structuring the materials on the topic of research, presentations during lessons in the form of reports, messages, essays followed by discussion, analysis and systematization of all obtained data, students study the academic topic in more detail and consistently, mastering the basics of research activities.

An important role in the development of research competence belongs to the writing of essays. The topics of social science essays are usually the statements of famous people which represent five branches of knowledge: philosophy, economics, social psychology/sociology, political science, and law. Writing essays implies a complex analytical work, as students have to reveal the meaning of the statement, relying on social science terminology, and using scientific theories to prove the proposed theses, while citing examples from different sources (Chekushkina et al., 2016).

Students can also be given assignments of the cognitive type: find a website on the topic and write a review; make a presentation or a summary on the lesson's topic; find three pictures or diagrams on the topic and prepare assignments to them.

### 3 Research Methodological Framework

The purpose of this research is to determine the most efficient methods of interactive training used at the social science lessons at school for developing the research competence.

The research objectives include:

1. analyzing the group interactive methods: discussion, debates;
2. assessing the heuristic potential of business games;
3. examining the project method and developing recommendations regarding its use at the social science lessons.

The research employed the range of methods: theoretical (study and analysis of the scientific literature, systematization of effective methods that help to strengthen the students' research competence; comparative which help to get the knowledge of the essence of various interactive methods for teaching children at social science classes.

### 4 Results and Discussion

The term "interactive" means a dialogue, an interaction with someone (a person) or something (for example, a computer). Interactive learning implies a dialogue interaction between a teacher and a student.

The primary objectives of interactive learning include the development of skills of independent search for, analysis and evaluation of information, formation of one's own opinion and

reinforcement of teamwork skills. Interactive learning helps to increase the amount of information learnt by students (Izmailova & Kuznetsova, 2013).

Interactive learning requires teachers to be independent and self-organized. The teacher should clearly define the goals of the learning process and ensure that the learners receive and perform the following:

- knowledge: recognize and reproduce special information;
- understanding: understand the meaning of any message;
- application: apply the acquired knowledge without being told to do so;
- analysis: breaking down the material into structural parts and gaining its understanding;
- synthesis: connecting separate studied elements into a single whole;
- evaluation: developing and forming value judgments about solutions, ideas, methods, etc. (Bermus, 2005).

It is worth noting that the primary role as concerns the use of interactive teaching methods at school belongs to organizing the group form of learning.

A feeling of community in the group, in our opinion, arises during a special lesson warm-up. Students are offered two or three exercises for attention concentration. The next stage of interactive learning consists in organizing the learning activities of students within a group. At this stage, the tasks offered to the class differ by a non-standard problem presentation urging students to seek help from each other, to share their points of view with each other. The tasks may be different, for example, to choose from the numerous qualities those which, in the common opinion, characterize the subject, phenomenon, etc. most precisely.

Learning interaction and cooperation should be organized in two forms: Teacher - Learner and Learner - Learner.

Today a rather high number of group interactive methods, for example, discussions, are used in practice. For a group discussion the class is divided into micro groups, each defending its point of view on the problem discussed. For example, the topic "Family and Relationships". Problematic questions on the topic: "Why do people get married? Is it necessary to regulate the age difference for people willing to get married? What can be the reasons for divorce? Does it make sense to ban divorces?"

In the course of a discussion, students analyze the information presented, critically reflect on it, and make conclusions based on the previously studied material. Cause-and-effect relationships underlie the reasoning. Work in small groups stimulates imagination, motivates, and fosters a sense of responsibility, since each participant understands that all others pin their hopes on him/her for progressing toward solution of the problem.

The primary role in preparation of the lesson-discussion belongs to the teacher who is supposed to consult the students. The discussion begins with the introductory words from the teacher, who formulates and explains the main problem of the lesson, and establishes the rules for conducting the discussion. Then each of the groups discusses the task, after which the discussion participants make their speeches.

When holding the lesson-discussion, the teacher should not interrupt the speakers and interfere in the discussion, but he/she should be providing guidance to students in their contemplations helping them to reach the right conclusions and to reach the consensus view on the issue in question. Group activities, such as discussion and debates, help to develop independent thinking, skills of cooperation and communication (Habermas, 1995).

During debates the class is divided into two teams, they discuss a given topic, which is announced by the teacher in the form of a thesis, and provide their convincing argumentation. One team supports the thesis and the other team refutes it. In the process, participants in the debate develop the ability to present their

point of view, based not only on their own conclusions, but on known documented facts.

The following topics of debates in high school may be suggested: "Labor Migrants in Russia"; "Market Economy in Russia: Good or Evil?"; "Teenager's Life in the 21st Century Has Become Easier than Before"; "The Changing Role of Women in Society". The main thing in this method is to have two teams, presenting arguments and counterarguments based on convincing proof-points in the form of quotations, statistical data, and examples.

In the classroom most often such types of debates are used as problem debates, which convey to students' various concepts touching upon the most important problems of the course. Express debates are based on the materials of the textbook or the teacher's story for consolidation of the studied content or for boosting cognitive activity in the classroom.

It is also possible to organize debates that involve students' work with various documents that will teach students how to logically analyze scientific sources of information. For example, in order to prepare for the debate on the topic: "Will stricter sentences lead to the lower crime levels in our country?" students are expected to look through scientific publications, statistical data, and mass media.

Debates can be used as a technology for revisiting and summarizing everything learned at the lesson (Shibaev, 2012). For example, the topic "Family and Relationships". Problematic questions on the topic may include: "Why do people get married? Is it necessary to regulate the age difference for people willing to get married? What can be the reasons for divorce? Does it make sense to ban divorces?"

The game as an interactive method has an immense potential for building research competence as it creates exploratory situations, offering the challenge of selecting, analyzing and evaluating the information needed to solve the pending problems. It is possible to use games that take little time, such as brain-twisters, quizzes, crosswords.

Business games are of a particular importance at social science lessons because through them students learn different social roles, such as banker, politician, salesman, lawyer, etc., which brings learning more relevant to reality, requiring them to interact, express creativity and initiative (Buyanova, 2013). Children's participation in such games is an important part of their socialization, as it gives them the opportunity to get a glimpse into a vein of possibilities offered by certain activity or profession, helps them to get included in the system of social institutions (Butcher, 1993). A business game can be conducted at different stages of learning, for instance, as a generalization lesson before proceeding to a new topic.

Business games should be based on the following algorithm: selecting the game topic → defining the game objectives and methods to reach them → developing a script and a game plan → preparing necessary aids and didactic materials → dividing participants into teams → assigning roles → preparing necessary paraphernalia and decorating space for the game → the game itself (the main stage) → the final stage (analysis, assessment and self-assessment, conclusions, generalizations, recommendations).

Introduction of games as a way to support the learning process makes it possible to maintain unfading interest in the content of the studied course, in the learning itself, to invigorate creativity, to develop and strengthen practical skills, to gain a better understanding of the relationship between theory and practice (Mikhalkina et al., 2018).

Today, due to transition to new educational paradigms, the project method draws more and more attention, since the named pedagogical technology is in high demand and implies independent efforts of students in searching for information and analyzing it. Project technology in the classroom implies that

students "live through" a certain period of time in the learning process, thereby contributing to a deeper understanding of Russia's past and present, teaching them to analyze a particular problem or task that has emerged at a certain stage of societal development (Kuznetsova et al., 2020).

Through project activities they learn to make their own judgements and develop critical thinking, integrate different types of activities, and make the learning process more exciting, interesting and effective.

Projects can be of the following types: research, informational (familiarizing-orientating), role-playing, applied (practice-oriented), creative.

When conceiving topics for projects, the teacher should take into account the study program in a particular class, as well as the age and interests of students. So, in the fifth and sixth grades the children may find interest in the topics related to the rights of children, various professions, family, while more relevant for high school students are such topics as "Youth Subcultures", "Juvenile Delinquency", "Mass Culture", "Special Considerations about Conclusion and Termination of Employment Contracts", "Prenuptial Agreement", etc. (Chekushkina et al., 2020).

Educational projects require students to examine and systematize many various sources of information. Project work may be carried out by schoolchildren in various forms and may include: search for the necessary information in the library, mass media, over Internet, conduction of questionnaire surveys, polling, interviews with participants of social processes, representatives of various social groups. Different stages in the project are geared toward achievement of personal, subject and meta-subject results.

Students in the lesson should focus on identifying differences in studies on the same problem predetermined by the scientific views and interests of their authors, and defining clear criteria for selecting relevant material.

The observation projects may be effectively used at social science lessons. For example, observations over people of different professions which outcome may be a verbal story, a drawing, or photographs. The success in the project is a stimulus that will inspire students to take up other projects independently and spur their personal development. The use of the project method is responsive to the needs and imperatives of the modern society: the ability to formulate objectives; to make own autonomous decisions; to embrace individual potential and unlock capabilities.

High school students can make an alternative scenario for the development of society, both in all or in some areas: politics, economics, culture. For example, after completion of a secondary school course students may be offered such a topic as "Russia in 2025". The teacher and the class will then choose a scenario of the country's development and will start working with this educational project. Such projects will be understandable to today's schoolchildren, as they will fit perfectly into their way of life (in many respects already dependent on computer technologies and games), because such projects actually represent a virtual model of development.

In general, the following benefits of the project method may be highlighted:

- acquisition by schoolchildren of useful skills and abilities through exploratory activities;
- finding out different points of view on one and the same topic or problem;
- strengthening the ability of students to use the scientific research methods.

Interactive learning becomes an effective vehicle to accomplish objectives consisting in the development of general learning skills and promotion of joint activities.

In today's education, the role and importance of those forms of learning that sustain strong interest and engagement of students in the learning process is increasing. There exist many different interactive forms of lessons: discussion, debate, project method, etc.

Through the dialogue interaction students develop empathy and ability to self-cognition. The group work helps to organize cooperation for accomplishing the pursued objectives. Interactive methods imply broad cooperation between students and between students and a teacher. Teacher should encourage students to take the lead, stimulating them to independently fulfill the intended objectives. Interactive methods are highly efficient for developing the ability of students to self-actualization, as they catalyze their hidden potential, and help to find ways toward the ultimate goal. Create the learning space where students become willing to acquire new knowledge independently, and to apply it later in practice (Zhuina, 2014). Enhance learning motivation, enrich personal experience, facilitate self-development, help to develop communication skills, invigorate inner resources of students, and create a friendly and optimistic atmosphere.

## 5 Conclusion

Thus, we believe that upon emergence of the competence-centered approach in educational space, the ultimate goal of learning is no longer the accumulation by students of a certain amount of knowledge on academic subjects, but the development and strengthening of certain key competences of students, including research competence, which is reduced to an organic synthesis with the obtained knowledge and the skills of its use in educational and real-life situations. Research competence is aimed at solving urgent problems with reliance on the acquired knowledge and life experience. Its level among students depends on how productively the general education facility organizes the research activities.

Social science lessons at school provide ideal ground for using such interactive methods of learning as discussion, debates, business games, project method, which boost creative thinking and other qualities: creativity, flexibility, ability to find non-standard solutions, to go beyond stereotypes, perfectionism.

Lessons organized with the use of the above methods spark noticeable interest in students. They break the ordinary pattern of a lesson, allow each student not only to be a passive listener, but also to take the active part in organizing the educational process. The described methods help to embrace the potential of all students, provide everybody an opportunity for self-fulfillment through problem solving, which ultimately results in enhanced motivation for research activities.

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**Primary Paper Section: A**

**Secondary Paper Section: AM, AN**

## ENHANCEMENT OF THE TEXT COMPETENCY IN PHILOLOGY STUDENTS WITHIN COGNITIVE AND COMMUNICATIVE APPROACH

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Abstract: The paper details principles of work for enhancing the text competency in philology students within the cognitive and communicative approach. In the research, a set of methods are used, including both theoretical and empirical ones (forecasting, observation, assessment of the text-based activity). It has been found that in the process of improving the text competency, texts are sampled so as to meet communicative needs of students; as a didactic unit, the complex syntactic whole (CSW) is determined within which functional semantic types of speech (FSTS) are singled out. The study process relies on first learning analysis of the text while taking into account specific circumstances where its FSTS occur, next – reproducing a text of the set type and style, and finally, producing one's own utterance.

Keywords: language and literature teachers, cognitive and communicative approach, text, methodological system, text competency.

### 1 Introduction

In the system of the contemporary philological education, professional training of future language and literature teachers incorporates not only the knowledge of fundamentals of subjects determined by the curriculum but also motivation for the continuous pursuit of self-education and self-improvement. In other words, professional abilities of future language and literature teachers are directly associated with their ability to learn and ability to use the acquired knowledge in practice.

The objective of the cognitive and communicative approach is to form and develop professional skills that are necessary for modern language and literature teachers, to teach students fluent spontaneous speech by cultivating a system of professional pedagogical knowledge in them. This approach is based on consideration of students' individual particularities, opportunities, and interests. It is aimed at helping them in their professional self-fulfillment in the spheres of cognition and communication. It is also the condition for the development of cognitive and communicative facets of future language and literature teachers in the process of their higher education training.

One of the most important instructional media that contribute to enhancing learners' speech activity is the text. It acts as a unit of learning integrating in it the semantics of concepts under study, detailing their functional characteristics, and being a part of a speech act. For students of philology, the cognitive and communicative approach to working with the text, its units, categories, and formation means, is especially important; the same applies to pedagogical tasks, too, which are fulfilled via text-based activity. This is so because success of future specialists, their mobility, and competitiveness in the labor market largely depend on the high level of communicative competence – compulsory constituents of which is the ability of text-based activity and the ability to create professionally important texts and incorporate them into the process of professional communication efficiently.

Relevance of this research is determined by the tasks of enhancing skills and abilities to analyze, reproduce, and produce texts using the material of FSTS.

### 2 Literature Review

Research into the text, into the processes of understanding and producing it relies on concepts elaborated by L. S. Vygotsky (1999), N. I. Zhinkin (1982), A. A. Zalevskaya (2001), I. A. Zimnyaya (1989), A. A. Leontiev (2010) and on results of numerous experiments summed up and theoretically conceptualized in the works of L. I. Velichko (1983), A. D. Deykina and T. M. Pakhnova (2002), N. I. Ippolitova (1998), G. V. Kolshansky (1985). The researchers' works are distinguished by the integrated approach: in them, the questions of structure, categories, and attributes of the text are combined with the technique of acquisition thereof. The scientists analyze specific circumstances of formation of the text-based activity in students (Belova & Kashkareva, 2015), paying special attention to training of future language and literature teachers (Belova et al., 2019). They emphasize the importance of practice-oriented training, too (Shukshina et al., 2018) and they identify opportunities granted by the text-based activity in supplementary education (Kashkareva et al., 2018). Alongside this, methods of enhancing students' communicative competency are discussed (Babushkina et al., 2017; Kadakin et al., 2017). Other authors identify pedagogical technologies of learners' socialization by means of introducing them to the texts of Russian literature (Zhindeeva et al., 2018) and pay attention to specific features of the study text (Aleksandrov & Vorontsova, 2015). The process of learning is also influenced by the polycultural composition of participants of the educational space, so researchers frequently discuss specific features of learning within the polycultural educational space of higher educational institutions. Some works can be noted representing the text in its culturological aspect (Ashurova, 2020), analyzing its didactic potential in conditions of bilingual learning (Mosin et al., 2017), detailing the technique of forming students' ideas about resources and esthetic capacities of the very language and about the way its esthetic capacities are brought together in the text (Vodyasova, 2017), and so on. It should be noted that exploration of the text, teaching its interpretation and reproduction is an extremely useful kind of work at practice classes: during it, functional and systemic approach to language studying is carried out, and interdisciplinary relationships become quite obvious, too. As a result, the linguistic system (vocabulary and grammar) and language material (texts) are presented in the process of learning in a seamless way, manifesting itself in speech activity (the processes of speaking and understanding). Thus, it is completely justly stated by A. D. Deykina and T. M. Pakhnova (2002) that "the text becomes the pivot, key concept of the discipline, and text-oriented learning creates the speech environment for students which contributes to enhancement of the sense of language and development of linguistic feeling..." (p. 5).

In recent years, functionalism has been suggested among the prevailing focus areas of the text research. It relies on the activity-based, communicative, information and functional, and cognitive research results. It also takes into account both extra- and intra-textual attributes, in other words, the correlation of particular devices for expressing the semantic structure of the text with its aim based on its kind and genre. In characteristics of the said approach, it is noted to consider preconditions of author's freedom in choosing certain semantic structure expression devices. So, for example, Zh. E. Fomicheva (2014) stresses that the text is simultaneously the result of speech activity, its product, and the very text creation process, due to which it is processual and dynamic by its nature (p. 284). As viewed by a number of researchers, the most important aspects of functionalism are the communicative and the cognitive approaches. The former emphasizes consideration of the text as the communicative act kernel, ensuring the opportunity for analyzing it in the process of communication (as a subject-process unity). Meanwhile, what matters for the latter is the fact that in the text, the speaker's and recipient's knowledge about the reality is expressed, which ensures reconstruction of cognitive



mechanisms of text generation and understanding. A. A. Chuvakin (2007) is completely right arguing that when the communicative and cognitive approaches are coupled, the opportunity is created for one to see the text as a unity of the cognitive, subject, and communicative activities, to see the text "in its life" (p. 333–334).

In works discussing linguistic methodology, it is given that it is in the text that a certain communicative intention is brought together, and it is to this task that all its components are subordinated. So, the smallest unit of communication is required which incorporates all properties of the text being analyzed or generated, i. e., which is a model for learning. According to the researchers' idea, the principal attributes of this model have to be its topical and semantic unity, completeness in detailing a particular topic, and a set of structural-semantic and grammatical attributes organized in a special way. There are several definitions of such a unit; the authors opt for the term of the complex syntactic whole (CSW) (Vodyasova, 2012, p. 11). Within the CSW, functional semantic types of speech, or FSTS (also termed rhetorical modes), are singled out on the logical and semantic basis; they have stable semantics expressed in the relevant language structure (Vodyasova, 2018, p. 157). So, it is taking into account the correlation of logical and semantic principle with the functional syntactic one that is considered the most fruitful basis for singling out FSTS. FSTS are present in the text depending on its kind, objective, and conceptual idea. One speech type changing another is associated with the author's efforts to express his or her idea more completely, describe his or her standpoint, help perceive it better, and influence the readers or listeners more efficiently. Analysis of FSTS is important for not only cultivating grammatical skills and abilities in students, but also for enhancing their processes of understanding, interpreting, and producing the text, based on the knowledge of structure and pragmatic capacities of speech types.

### 3 Research Methodological Framework

The objective of this research is to identify ways of enhancing the text competency in philology students within the cognitive and communicative approach. According to the objective set, the following tasks are completed: a) to characterize the essence of the text-based activity within the cognitive and communicative approach; b) to identify problems solved in the process of enhancing students' text competency; c) to define as the principal didactic unit the CSW within which FSTS are singled out; d) to describe specific features of occurrence of FSTS; e) to detail efficiency of enhancing the text competency within the way FSTS are brought together.

When completing the objective and tasks of the research, the authors used theoretical level methods; the most important ones of them are analysis, systematization and expert appraisal of scientific and scientific methodological literature discussing problems of the text, methodological aspects of its understanding, perception, and production, comparison and generalization of statements suggested in various sources. When comparing different FSTS within the principal unit of the text – the complex syntactic whole (CSW), – the analysis of oppositions and the method of modeling were also used. The methods of observation and experiment have been carried out in the process of teaching students the text-based activity. In the experiment conducted at Mordovian State Pedagogical University named after M. E. Evseviev from September, 2020 to May, 2021, students of years III–IV (48 people) training in speciality 44.03.05 "Pedagogical education" profile "Russian language. Native language and literature" took part. The method of analyzing the text as a product of the text-based activity was used in assessing the formation extent of the students' text-based activity abilities. Predictive methods were employed when modeling the study process in variable pedagogical contexts.

### 4 Results and Discussion

Enhancement of the text competency allows comprehending the integral system of working on the text and being guided by the

principles of the cognitive and communicative approach to the said work. Owing to this, the students' activity can be forecast. So, in the process of this activity, which suggests orienting oneself in the communicative situation, identifying extra-linguistic factors which condition the genre choice, analyzing the source material (the initial study text), and processing it (interpreting and transforming the source information), integral communicative and cognitive units are created and interpreted, and the writers' repertoire of genres and topics is broadened. The students master new registers of speech, fundamentals of critical reading and academic writing, too.

Language teaching practice (teaching the native, non-native, and foreign language) has shown that in the process of enhancing the text-based activity skills and abilities, the following tasks are completed: 1) selection of texts meeting the students' communicative needs; 2) identification of the didactic unit containing all attributes of the text. Meanwhile, this didactic unit has to be quite compact in size: with a lengthy text, the process of learning cannot be carried out, as this leads to disruption of the main methodological principle "from the simple to the complex". As noted previously, it is the CSW that becomes such a didactic unit, within which FSTS are singled out on the logical and semantic basis. The FSTS represent typified varieties of monolog conditioned by communication.

The text competency enhancement process implies creation of the differentiated work technique relying on first teaching linguistic analysis of the text while taking into account specific circumstances where its FSTS occur, next – reproducing a text of the set type and style, and finally, producing one's own text. Proceeding from this, the study process is organized in such a way that the text-based activity skills and abilities were improved using the accessible material and already known assignment definitions, as it must not require additional time for mastering a new system of works algorithms.

Efficiency of the said technique was checked in the course of experimental teaching held at Mordovian State Pedagogical University named after M. E. Evseviev from September, 2020 through May, 2021. It involved students of the faculty of philology (years III–IV, 48 people) training in speciality 44.03.05 "Pedagogical education" profile "Russian language. Native language and literature". The first stage (September 2020) implied initial diagnosing of text-related abilities. The students performed viva voce and written works (miniature compositions, text editing, reviews, etc.) and completed tests. Results of the diagnosing have shown they sometimes fail at connecting parts of the text, wording its ending and they have difficulty using lexical diversity. This has enabled the authors to identify the strategy of subsequent work, having selected the relevant materials.

The second stage consisted in classes involving familiarization not only with distinctive features of linguistics concepts under study but also their text-forming role and text creation potential. The students were introduced to key topics using the material of certain assignments or within special practice classes.

As the authors adopted the CSW as the principal didactic unit, what was necessary first of all was to provide the created methodological system with the text material, i. e., a set of CSW in which FSTS are singled out possessing characteristic features of narration, description, reasoning, or the contaminated forms thereof. The set of assignments was designed in such a way as to enable the students to use their background knowledge of linguistics as much as possible, on the one hand, and on the other hand – to readily learn any new facts required for completing communicative tasks successfully. They have received the following information: although there are numerous devices enabling one to express one's idea, the author must always bear in mind that whatever linguistic means, methods, and practices could be used, the information has to be represented in a precise, complete, and consistent way, while adhering to the rules for constructing particular genre texts, style options for beginning and ending, for passing from one part to another, practices of bringing together retrospection and prospection. The authors rate

the following ones as the most productive kinds of work: oral or written reproduction of the text heard or read featuring the required extent of compactness (plan, highlights); presentation of FSTS of various genres with conscious choice of language means organization up to the communicative task; speaking in front of the peer students defending a project. Some assignments were associated with creating FSTS in various styles (literary, publicistic, and academic scientific ones); others involved comparing the text continuation written by a student with the author one or comparing variants of one's own text to improve it. There were tasks of finding departures from speech esthetics in the created text and editing it; in yet other assignments, students had to demonstrate their ability to draw the relevant information from different sources, including those provided in the digital form on various information carriers, and so on. When developing the assignments, the students' personal interests were taken into account, as well as their involvement in the discussion process at the stages of defining objectives, planning, checking, and assessing the results of their text-based activity. This has enabled the authors to markedly increase the students' motivation for learning.

Repeated diagnosing was conducted in May, 2021 and implied a review work with elements of linguistic composition and test points. It has confirmed that the students' knowledge of specific circumstances of occurrence of certain FSTS optimizes the process of general and professionally oriented speech training. When summing up results of the experiment, it has been found that the students in working with whom the developed technique was applied feature a higher level of the text-based activity skills and abilities. The training set consisting of a system of assignments correlated with certain FSTS allows stimulating the students' text-based activity. It represents an algorithm of actions by completing which one creates conditions for analyzing, reproducing, and producing the text as a piece of speech in an individually optimal way. Successfulness of this process is also determined by the fact that all assignments are correlated with certain stages of the text-based activity. For higher efficiency of improving the text-based activity skills, all assignments have been supplemented with relevant reference materials. The latter have enabled the students to independently find out the semantics of linguistic categories being used and, importantly, all attributes identifying the FSTS, as well as the analysis parameters according to which texts of certain typological and semantic belonging are studied. The work is further facilitated by learning the procedure and practices of linguistic analysis of the text. This is observed because the very methodological system starts generating its own rules logically justified by the specific features of the topic under study and learning objectives – once it has gained the basis in the form of the materials bank containing CSW meeting the didactic objectives (texts of certain size, typological and stylistic belonging) and the analytical model to be applied to them.

## 5 Conclusion

Proceeding from the above, it can be stated that the students' knowing specific features of occurrence of a certain FSTS contains a developing potential and intensifies the process of their language training. This supposition is based on: a) specific features of the linguistic material determining the correlation of each FSTS with a particular set of devices of the language system; b) the broad opportunities granted by FSTS in generation of text; c) application of the new system of assignments for cultivating skills and abilities of fluent conversation. The cognitive and communicative approach to organization of instructional text-based activity suggests naturally involving students into the process of producing utterances. Meanwhile, attention must be paid to compulsory constituents of communication which represent extra-linguistic factors, among other things: motive-need, communicative goal, addressee, the structure and stages of the activity, its result, analysis of the obtained texts, and reflection or assessment of the efficiency of solving the set problem. Working with the text at classes is viewed as a specific kind of activity during which mutual exchange of thoughts and emotions, information

exchange takes place with the communication participants contacting directly.

Theoretical significance of the research is associated with identifying the didactic potential of FSTS. Its practical importance consists in the following: 1) the authors have identified practices and methods of linguistic analysis of the text, of reproducing and producing one's own text based on the material of FSTS; 2) they have suggested the technique for enhancing certain skills and abilities of the text-based activity which allows successfully improving the level of professional communication in the native (non-native / foreign) language; 3) the authors have introduced a system of purpose assignments – in other words, a set of assignments aimed at intensifying and optimizing improvement of students' text competency.

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**Primary Paper Section: A**

**Secondary Paper Section: AI, AJ, AM**

## THE USE OF DIGITAL TECHNOLOGIES FOR PROFESSIONAL TRAINING OF FUTURE FOREIGN LANGUAGE TEACHERS

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**Abstract:** The paper deals with the problem of training future foreign language teachers from the perspective of education digitalization. The paper substantiates the idea that modern society needs a specialist who may quickly respond to the challenges of modernity and is capable of self-development and self-organization. The set of competencies necessary for a modern teacher includes universal, professional and digital competencies. The authors focus their attention on the digital competencies which are crucial for a modern teacher: ability to model virtual content, to use digital tools in the educational process, and to create online learning resources. The paper also describes the ample didactic possibilities of using certain online resources helpful in development of digital competencies of students.

**Keywords:** digital competencies, digital resources, foreign language teaching, learning materials, self-organization and self-development.

### 1 Introduction

The process of digitalization has touched all sectors of society, including the sector of higher education. In his address, Vladimir Putin, the President of the Russian Federation, noted that the advanced telecommunications will open the endless possibilities of the digital world for citizens. Digitalization is a tremendous breakthrough resource (Presidential Address to the Federal Assembly on March 1<sup>st</sup>, 2018). The process of digitalization in education is aimed to achieve two interrelated goals. The first goal is the creation of a digital learning environment incorporating digital learning tools, online courses and electronic educational resources. The second goal relates to the profound modernization of the learning process intended to prepare a person for living in a digital society and carrying out professional activity in a digital economy (Blinov et al., 2019). The process of information transformation into a digital form is associated with introduction of modern technologies, use of creative opportunities, saving labor costs in various areas of human activity (Kuznetsova, 2020).

The process of digitalization catalyzes fundamental changes in the very structure of learning, calling for a need to find innovative approaches to organizing the educational process. These changes will affect not only the selection of material for creating and delivering training courses, but also the way how the educational facility should be managed. As is commonly known, a modern teacher should possess the following combination of competencies: professional competencies, supraprofessional, or, as the Federal State Standard of Higher Education calls them, universal competencies, and digital competencies. The professional standard for teachers requires that teachers have the ability to apply modern educational technologies, including digital technologies. The multifaceted process of education digitalization leads to the imperative need to adopt new ideas and create new educational programs for training teachers with necessary digital competencies.

According to the Federal State Standard of Higher Education in the Field of Training 44.03.05 Pedagogical Education (with two training specialties) (2018), the future teacher should have digital competencies related to the search for information over the Internet, the use of online tools and social networks for implementing the most advanced teaching practices and facilitating professional development, as well as for expanding educational opportunities for students, the creation and editing of virtual sites and multimedia content, the dissemination of digital learning resources (Federal State Standard of Higher Education

in the Field of Training 44.03.05 Pedagogical Education (with two training specialties), 2018).

High relevance of the research presented in this paper is stemming from the need to revise the content of vocational training of future teachers in the context of education digitalization. The research makes its contribution to the development of foreign language teaching methodology, as the considered digital technologies and their application in the educational process will significantly expand the skill set of a modern foreign language teacher.

### 2 Literature Review

As noted by researchers, the training of specialists undergoes changes under the influence of new knowledge and modern technologies (Lazutova & Piskunova, 2020; Soltovets et al., 2019; Meyers et al., 2013). The need to bring changes into the teacher training is driven by the interests of public and state development (Antonova et al., 2019). The state together with IT companies and the pedagogical community is facing the task to develop, test and implement new teaching methods in the practice of education, to find the most optimal balance between digital and classical education, which shapes the new trends in modern education (Kazinet & Trinadtsatko, 2020). As their potential employee the employers want to see a graduate who is able and ready to successfully master new technologies within a short time, to independently fill the gaps in knowledge and skills, to learn how to apply them in practice in a plenty of unforeseeable situations, to ensure the effectiveness of professional activities (Kizrina & Yankina, 2016). This is due to the imperatives of a new socio-technical reality which requires that users have not only the skills and abilities related to the use of technological tools, but also the knowledge regarding their practical application (Meyers et al., 2013).

Currently, such concepts as "digital didactics," "digital content," "digital literacy," "digital education," and "digital transformation" are on the active agenda in professional circles (Bortvik & Hansen, 2017; Kroksmark, 2015; McKnight et al., 2016; Jahnke & Norberg, 2013). Today's digital world has changed our lives and is technologizing the system of education (Deryuga, 2020). The potential of new information, learning and communication technologies and digital tools, keeps growing, and the scope of their application in the educational process is expanding. In the current conditions, for effective planning of lessons and use of innovative technologies in the classroom the teachers need additional knowledge and new skills (Potemkina, 2018). It is during the period of schooling that one becomes familiar with the broad possibilities of digital tools and obtains the first skills of their use. Thus, the advanced development of students is achieved. Modern school students obtain the competences necessary for living in a digital society before their professional training, which, in turn, significantly improves absorption of new knowledge and academic mobility of future students. Digital tools facilitate social development and learning (Smith & Hull, 2013). The modern teacher must be media competent, meaning their ability to find necessary and useful information in the virtual space (Blatt, 2000).

### 3 Research Methodological Framework

The research purpose is to analyze the modern digital technologies from the perspective of their use in the professional training of foreign language teachers. The stated purpose predetermined the need to address the following objectives:

- 1) provide an overview of the didactic possibilities of trello.com, an online project management tool, for training foreign language teachers;
- 2) describe the potential of an educational platform Stepik.org for creating an online training course;

- 3) reveal the methodological value of visualization in foreign language education;
- 4) present the infographics tool, Canva.com, as a means of forming foreign language communicative competence.

As the research methods the general scientific methods of cognition were used, the main of which were the methods of analysis and synthesis of the phenomena under scrutiny.

#### 4 Results and Discussion

Among the multitude of digital tools, trello.com, a cloud-based program, deserves special attention as a way to develop digital competencies of future foreign language teachers. It is a visual tool that helps to plan lessons and the trajectory of professional development, to organize classes and collaborative work with colleagues. In addition, the resource allows the teacher to monitor how the students perform the received assignments. In the templates on trello.com in the Education tab exists a board "Learn a foreign language". In practical training, students may design foreign language lessons by creating virtual boards on any topic. The board may represent elements (columns) of the lesson's technological map: stages of the lesson, teacher's activity, students' activity, targeted universal learning skills. The advantage of the virtual technological map of the lesson on trello.com is the possibility for the teacher to assess the level of universal learning skills after students complete all homework. As is known, the use of digital controls in the educational process is an obligatory component of the teacher's professional pedagogical competence (Bates, 2015). The teacher may in real time monitor how students perform the assignments, identify problems related to the learning of certain material related to a foreign language, write comments and assign additional checklists containing necessary tasks.

By designing lessons on trello.com, the future foreign language teacher may search for the necessary authentic multimedia materials on the Internet, since it is impossible to teach a foreign language without such materials. Among the educational Internet resources that may be effectively used in the classroom we may mention Learn English (2021) - educational website of British Council; Online-Aufgaben und Übungen (2021) - service for learning German language Schubert Verlag; Learn German (2021) - service of Deutsche Welle. After selecting the relevant content, the teacher includes a link to it into the card's checklist, formulates the task, and establishes a deadline for students. It is a common knowledge that the main goal of teaching a foreign language is to develop a foreign language communicative competence for all types of speech activity. With the help of trello.com designing tool, future teachers may structure lexical and grammar material, audios, videos, texts for reading by class and thematic planning. This tool can be used in distance learning.

One of the requirements concerning the expected results of the study program prescribed by Federal State Standard of Higher Education in the Field of Training 44.03.05 Pedagogical Education (with two training specialties) (2018) is the development of future teachers' competence UC-6, i.e. the ability to manage own time, build and follow a trajectory of self-development based on the principles of lifelong learning. Continuous professional education is considered as a holistic systemic organizational process of learning throughout the entire working life or a person. Its implementation requires employers to comply with a number of regulatory prescriptions. In particular, if changes in the working environment are associated with imposition of new labor functions on employees, employers must provide the necessary conditions for their employees to acquire new professional knowledge and skills. This will help employees to perform their duties effectively, remain competitive in the domestic and foreign labor markets, and maintain proper social living conditions (Skvortsov, 2013). With the help of trello.com service, future teachers can improve their self-organization and plan their own self-development trajectory. By creating a board "Trajectory for Self-Development", teachers may assess their personal resources for achieving professional

goals, determine the best time management strategies, build a trajectory for professional and personal growth, and in particular: plan time for professional development, organize research and experimental work, publish research papers, work with children with disabilities.

The rapid advancement and rollout of digital technologies in educational space became a spur for the revision of technologies and methods used in teaching foreign languages. The development of blended learning concepts is one of the promising avenues for further research (Rösler & Tschirmer, 2005). It is hard to imagine creation of a foreign-language digital learning space without a properly planned and developed online course.

Especially relevant to the development of digital competencies of future teachers in the era of pandemic is the use of the constructor Stepik.org. This platform helps to design a foreign-language digital learning space and to create educational materials. Thus, students who are deprived of the opportunity to conduct foreign language lessons in a face-to-face format during their internships can create a course on the Stepik.org platform covering the topics from the school textbook. This resource allows students to create various online courses, develop interactive lessons using authentic video material and various assignments for students, and offer private courses for a limited audience. Using this platform, it is possible to organize subject olympiads and competitions, launch programs for professional retraining and qualification upgrade, and exchange experience with colleagues. One of the advantages of digital courses created on the Stepik.org platform is their public accessibility, which fosters the competencies related to the spread of digital resources among colleagues.

When teaching a foreign language, teachers often resort to such a teaching aid as the graphic visualization. Through the use of digital tools, the foreign language teacher may independently create interesting infographics relevant to the lesson. One of the digital tools for creating graphic visualization is canva.com. Infographics are graphic visual representations of information. When teaching a foreign language in the absence of an immersive environment, the modelling of objective world becomes possible through visualization. Visualization is not only an important tool of semantization, but also a means conveying situational causation of foreign language speech. Visualization in the learning process makes it possible to create learning situations for practicing various skills, including oral communication skills, which are crucial for a speech response to objective reality and various life situations.

The possibilities of Canva tool in the professional training of foreign language teachers make it possible to model a foreign language lesson from the perspectives of creative and activity approaches. By using this digital tool, a teacher can not only teach intercultural communication to students, but also teach them how to use this tool throughout life. Let's closely examine this resource. Canva.com. offers bright design solutions for designing a foreign language lesson, including by teams. Today, all professionals, and students as well, should possess the skills of teamwork, as teamwork is the key to success in handling the tasks at hand. With the help of canva.com it becomes possible to jointly prepare a presentation in a foreign language on a topic proposed by the teacher, and to work on different projects, both regional and international. Using the ready templates for Instagram stories, the teacher can develop students' lexical and grammatical skills and skills of creative writing in a foreign language on the topics from the school textbook.

The tools of infographics include not only images, but also other elements such as text, as well as arrows, diagrams, blocks and charts. Infographics are intended to quickly, clearly and vividly present the material. In the methodology of foreign language teaching, infographics is seen as a means of developing the language and speech skills of students in the framework of communication in foreign language. It is known that for teaching a foreign language various genres of texts are used: advertising text, culinary recipes, text with statistical data, instruction texts.

After mastering the digital resource canva.com., a foreign language teacher will be able to independently model infographics with texts, thereby developing both reading skills with a varying degree of reading comprehension and the ability to analyze data in a foreign language.

When teaching a foreign language, it is important to use thinking visualization technologies that facilitate the processing and memorizing of information. Canva allows to model mental maps as aids for retelling text in a foreign language, mental maps as excursions to cities in the countries of the studied language, mental maps for discussions, as the template allows demonstrating the relationships between ideas, to search for alternative solutions.

## 5 Conclusion

The development of digital competencies of future foreign language teachers hinges on the practical application of digital tools and technologies by students in the learning process. This means that the structure of the basic professional education programs should include digital components contributing to the following learning outcomes: ability to use different forms and methods of foreign language teaching; to develop scenarios for foreign language classes based on digital technologies; to organize various forms of work for fostering the foreign language communicative competence; to strengthen the learning motivation of students; to boost critical thinking of students through foreign language and digital tools; to cooperate with teachers in a meaningful way to jointly solve problems related to the use of digital technologies.

The use of digital technologies for professional training of students improves their readiness to apply them in future professional activities (designing lessons using the cloud program trello.com, creating online training courses with the help of the platform Stepik, creating graphical visualization using a digital tool canva.com, etc.) and the necessary practical skills for doing this.

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**Primary Paper Section: A**

**Secondary Paper Section: AI, AM**

## FOSTERING ARTISTIC AND AESTHETIC COMPETENCE OF A FUTURE TEACHER THROUGH TEACHING INTERNSHIP

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**Abstract:** This paper describes the experience of using the selection of practice-oriented tasks aimed to foster the artistic and aesthetic competence of a future teacher through teaching internship. The research relied on theoretical methods (analysis and synthesis, generalization and systematization) and empirical methods (M. Simkin's tests "Masterpiece or Parody?", "Artist or Monkey?", "Famous or Unknown Artist?"). The main outcome is the data which prove effectiveness of the selection of practice-oriented tasks intended to foster the artistic and aesthetic competence of a future teacher through teaching internship which were offered to the participants of the pedagogical experiment, who were students of the Mordovian Stated Pedagogical University named after M. E. Evseev.

**Keywords:** selection of tasks, practice-oriented tasks, future teacher, teaching internship, artistic and aesthetic competence.

### 1 Introduction

In the present stage of societal development, the Russian system of education faces the challenge of raising highly qualified teachers capable to understand art, the beauty of this world, with a good aesthetical taste, strong artistic and aesthetic skills, having the ability to work proactively and productively for the public good. The global competitiveness of the Russian education and the Russian Federation ranking among the top 10 countries in terms of the general education quality are the goals of the National Project Education. At the same time, the developed artistic and aesthetic competence of a future teacher is one of the indicators of their competitiveness and mobility in today's world (Moroz, 2018).

According to the professional standard "Teacher" (pedagogical activity in the field of pre-school, primary general, basic general, secondary general education) (Educator, Teacher)" (approved by the Order of the Ministry of Labour and Social Protection of the Russian Federation dd October 18, 2013 N 544n) (as amended by the Order of the Ministry of Labour dd August, 05, 2016 N 422n), the major educating efforts of a teacher should be focused on utilizing the educating potential of various activities undertaken by a child, and in particular, the artistic and aesthetic activity, while the essential skills of a teacher include finding the value aspect in the knowledge and information transmitted during the lesson, ensuring that students understand and pass it through themselves, organizing various extracurricular activities: artistic-productive and cultural-leisure, which is impossible without a developed artistic and aesthetic competence. In such circumstances, training at university takes on special meaning as concerns fostering of the artistic and aesthetic competence of a future teacher (Aryabkina, 2015).

### 2 Literature Review

Following B. A. Almukhambetov, Z. O. Nebessayeva, A. S. Smanova et al. (2016), E. Yu. Volchegorskaya, M. Zh. Ordasheva (2019), L. A. Klykova (Klykova et al., 2018), L. M. Masol (2018), J. A. Stewart (2015), S. A. Cherkhysheva (2015) we define the artistic and aesthetic competence of a future teacher as a set of personal qualities, including artistic and aesthetic knowledge, abilities, skills, attitudes, capability to use appropriate means, adequate perception of artistic and aesthetic situations, as well as readiness to carry out artistic and aesthetic activities with students (Ryzhov, 2018).

The existing programs of teacher training based on the Federal State Standard of Higher Education in the field of training 44.03.05 Pedagogical Education (with two specialties) (Order

No. 125 dated February 22, 2018), as well as teaching practices, do not fully ensure the development of the aforementioned competence in future teachers. A selection of practice-oriented tasks with artistic and aesthetic focus for future teachers during their teaching internship may be useful in addressing this objective (Shukshina & Movsesyan, 2018; Shukshina et al., 2018).

The teaching internship is of paramount importance for the professional becoming of a future teacher, because it is during the internship that theory gets integrated with practice. It is through the teaching internship that future teachers become ready to carry out professional activity and fulfill their creative potential. The works of such educators as O. A. Abdullina (1990), E. P. Belozertsev (2000), L. V. Vedernikova (Vedernikova et al., 2019), V. K. Rozov (Rozov et al., 1981), T. G. Cheshuina (2006), R. R. Shakhmarova (2003), M. V. Shustova (Shustova et al., 2019), and others, are devoted to the problem of formation of personality of future teachers, improvement of their professional-methodological proficiency, intensification of practice-oriented process of delving into the chosen profession.

Traditionally, teaching internship at school serves as kind of a bonding thread connecting theoretical knowledge obtained by a future teacher with practice. Preparing students for professional activity as teachers, equipping them with necessary professional skills and abilities, and teaching them how to creatively comprehend the key types of teacher's educational efforts - all these are the basic aspects which the teaching internship is intended to cover.

In the system of future teachers' training, teaching internship is one of the major forms of teacher's professional becoming, which allows synthesizing theoretical knowledge and practical experience (Aryabkina et al., 2019; Gadzaova, 2015). It becomes possible to master the art of teaching and develop readiness for pedagogical activity only through interpenetration and intertwining of theoretical and practical training of a future teacher: none professional skill or ability may be developed only in the classroom (Bermus, 2019; Mamontova et al., 2016; Shukshina et al., 2018; Vardanyan et al., 2018). The use of a selection of artistic and aesthetic tasks during teaching internships at school will help to solidify the readiness of future teachers to implement artistic and aesthetic activities with their students (Kuyumcu, 2013; Shukshina et al., 2020).

### 3 Research Methodological Framework

Typologically, this study can be described as quantitative, as in essence it is the collection and analysis of primary information from accurate, statistically verified numerical data array. The collected data are statistical in nature, and the results are presented in the form of a table.

The purpose of this paper is to describe the experience of using the selection of practice-oriented tasks aimed to foster the artistic and aesthetic competence of a future teacher through teaching internship.

**Objectives:** to carry out experimental work on fostering artistic and aesthetic competence based on the selection of practice-oriented tasks during teaching internship; to measure the level of artistic and aesthetic competence of future teachers before and after completion of the mentioned selection of tasks, and to conduct a comparative analysis of the obtained data.

The research used theoretical methods, of which the most important were analysis and synthesis, generalization and systematization (Kraevsky, 2010), empirical methods (M. Simkin's tests "Masterpiece or Parody?", "Artist or Monkey?", "Famous or Unknown Artist?" (M. Simkin, 2021).

The participants of the described pedagogical experiment were students of Mordovian State Pedagogical University named after M. E. Evseev pursuing studies in the field of training 44.03.05 Pedagogical Education (with two specialties), selection of specialties: Russian language. Literature; Russian language. History; Russian language. Native language and literature; Preschool education. Primary education; Foreign language (English, German) (159 persons). Students from six academic groups took part in our experimental research, 78 of which were included in the experimental group (EG) and 81 in the control group (CG).

The experiment consisted of three stages: ascertaining, formative and control stages. The first ascertaining stage of the experiment (2018) was intended to find out the initial level of artistic and aesthetic competence of future teachers using the selected diagnostic tools. The second formative stage of experiment (2016-2018) consisted in testing the selection of practice-oriented tasks aimed to foster the artistic and aesthetic competence of a future teacher through teaching internship. The third control stage of experiment (2020) involved processing, consolidation and analysis of data which were obtained during the research, formulation of conclusions and documentation of the research results. Also, at this stage of experiment the final level of artistic and aesthetic competence of future teachers was analyzed.

#### 4 Results and Discussion

For fostering the artistic and aesthetic competence of future teachers during the teaching internship we created the selection of practice-oriented tasks. The practice-oriented tasks mean the tasks which primary purpose is to strengthen the skills and abilities of students in practical work, and to bring about understanding about when, how and why such abilities should be used in practice. The practice-oriented tasks facilitate integration of knowledge, urge students to read supplementary literature which boosts the interest to studying in general, and have a positive effect on the solidity of knowledge and its quality.

The created selection of practice-oriented tasks with artistic and aesthetic focus includes the assessment by future teachers of aesthetic intelligence of students; checking the school curriculum and study books for ethical aspects of teaching the subject; attending lessons on the subject of the future teacher's specialty and reviewing the elements and means of ethical education and upbringing used at the lessons; planning and conducting a lesson with the use of the means of aesthetic education; organizing a homeroom hour on the artistic and aesthetic topics; organizing excursions of students to local art monuments, parks or botanical gardens, museums, exhibitions of fine arts or native arts and crafts; planning and holding the "Festival of Good Taste"; organizing a homeroom hour on the artistic and aesthetic topic; making a report on the results of teaching internship within the frames of the final conference.

The final conference held at the end of teaching internship is a traditional event for summing up its results. At the final conference, future teachers make a report on the performed work, and the specialists representing school and university provide their comments and recommendations.

Based on the above, the future teachers studying at MSPU named after M. E. Evseev after getting to schools of their internship and being assigned to certain classes, completed a number of practice-oriented tasks of artistic and aesthetic focus.

During teaching internship, the future teachers assessed the level of aesthetic intelligence of students in their classes. The program for assessing the aesthetic intelligence of schoolchildren was developed, which included: assessment of the aesthetic worldview, including theoretical knowledge about the beauty of the world and works of art; emotional responsiveness to the aesthetic manifestations; aesthetic hobbies, tastes, and aspirations; artistic and creative abilities; manifestation of aesthetics in educational and creative activities, manner of behaviour, sports and social activity, visiting theatres, museums,

involvement in the work of art schools, studios, hobby clubs, etc. For that, future teachers used such methods as pedagogical observation and interviews with students, parents and teachers; questionnaire surveys; examination of creative works of students; immersion of students in certain circumstances, etc.

Future teachers examined school curricula and study books on the disciplines of their specialty and analyzed how well they reflect aesthetic aspects in teaching such disciplines. They attended lessons on the subject of their specialty. The teaching interns received a task to analyze the artistic and aesthetic components of the teaching and educational process and to identify the means to which the teacher resorts for that purpose.

Further, the teaching interns planned and conducted lessons on the subjects of their specialty with the use of the means of aesthetic education. The prior consultations with methodologists were held, and the best pedagogical practices and special literature were explored. The plan was developed to introduce students to the aesthetic culture during non-school hours. Based on the level of aesthetic development and interests of students, the resources at disposal of the school of internship, the vectors and tasks of future work were identified, the events were planned which were supposed to shape the worldview, tastes, aspirations and artistic and aesthetic proactiveness of students.

The homeroom hours on the artistic and aesthetic topics became the first in a succession of such events; they were planned and conducted with involvement of the class activists who were provided the necessary assistance. The topics of homeroom hours were as follows: "The true beauty of man - what is it?", "Who is he - a hero of our times?" (based on literary works and modern cinematography), "About outer and inner beauty", "About kind and noble feelings" (Love and friendship in adolescence), "Aesthetics of behavior", "What is aesthetic culture", "Let's have a dispute about... tastes", "People in the world of things", "Fashion in the 21st Century", "True and false values", "Aesthetics of leisure time", "Art and man", "Let us talk about music", "Is classics still relevant?" and "How to become an aesthetically intelligent person?" The homeroom hours were organized in such a manner as to ensure that the presentation of material enabled ongoing interaction between students and teacher.

The interns appointed a group of students responsible for organizing the homeroom hour, who performed certain functions (preparing questions for discussion, selecting literature, music, videos on the chosen topic, searching for interesting personas to attend the event, appointing a host for the homeroom hour, creating an event poster, decorating the class, etc.). In several days before the homeroom hour, a questionnaire survey was held, the questionnaire included interesting questions related to the topic of the event. The answers of students helped to expose and compare the differing opinions on the discussed problems. In discussions with students about controversial aesthetic issues, the tact was shown and no pressure was put on them. Future teachers took position of a senior mentor showing respect to the views of students and having the ability to adequately express own opinion.

Another event conducted by future teachers was "The Evening of Good Taste". The event program featured the modern fashion show for young people, demonstration of trendy hairstyles and interior designs and contests: "Who can dress tastefully?", "The best hairstyle", "What do gifts say about us?", "What makes a home comfortable?", "Table manners", "Beauty in dance".

Also, excursions were organized for students to local museums of architecture, to the exhibition hall of the museum named after S. D. Erzya and the Mordovian Republic United Museum of Local History named after I. D. Voronin in Saransk to the exhibition of native crafts, after which students were asked to describe their impressions in short essays and reviews.

The final stage of pedagogical practice was the presentation of the future teachers at a key conference on pedagogical practice at school and at their faculty in university. They presented reports



on various topics, such as "Art and Artistic Education in the Classroom", "Art as a Learning and Educational Tool", "Artistic and Aesthetic Development of Students through Extracurricular Activity", "Organization of Extracurricular Activities of Artistic and Aesthetic Orientation for Schoolchildren", "Technology for Organizing a Homeroom Hour on Artistic and Aesthetic Topic", "Technology for Organizing Creativity Contests", "Means of Instilling Ethical and Aesthetic Behavior in Students", "Activation of Children's Artistic and Aesthetic Potential Beyond the Classroom" and others.

During performance by future teachers of practice-oriented tasks within their teaching internship, students also actively participated in preparation and organization of certain events, which aroused great interest on their part. This helped to engage students and future teachers passing their internship in active practical work. In the course of internship, future teachers turned to various possible forms of extracurricular activities, involving students of their classes in various activities: a homeroom hour on the topic "On our aesthetic Culture", "Let's argue about tastes", "People and things", "Leisure time culture", "What we look for in art", etc., the event "The Evening of Good Taste" was organized.

Completion by future teachers of the selected practice-oriented tasks of artistic and aesthetic focus during their teaching internship at school helped to strengthen their readiness for artistic and aesthetic activities with students.

Before implementing the practice-oriented tasks of artistic and aesthetic focus the assessment was made of the initial level of artistic and aesthetic competence of future teachers participating in our experiment, who were divided into the experimental group (EG) with 78 persons and control group (CG) with 81 persons, with the help of M. Simkin's tests "Masterpiece or Parody?", "Artist or Monkey?", "Famous or Unknown Artist?" (M. Simkin, 2021). These tests are intended to determine the level of responsiveness and ability to perceive and interpret the pieces of art, individual aesthetic tastes of respondents, their ability to decipher and understand the language of art and the artistic images. According to the test results, the average score was 57.28 out of 100 maximum, which indicates the insufficient level of the competence under research.

The survey aimed to measure the initial level of the artistic and aesthetic competence of future teachers with the help of M. Simkin's tests "Masterpiece or Parody?", "Artist or Monkey?", "Famous or Unknown Artist?" (M. Simkin, 2021) revealed that 57.7% of respondents from the EG and 51.1% of respondents from the CG have the low level of this competence, 28.1% EG and 33.1% CG have medium level and 14.2% EG and 15.8% CG demonstrated high level. The obtained results illustrated that the level of artistic and aesthetic competence among future teachers is insufficient, and targeted work is required to develop this competence during the teaching internship.

The students of experimental group were offered to implement the selection of practice-oriented tasks during teaching internship.

After future teachers completed the teaching internship and as part of it performed the practice-oriented tasks of artistic and aesthetic focus, the repeated diagnostics of the examined competence was held, and then, the initial and final levels were compared. It should be highlighted that the data were analyzed for both groups, experimental and control, but no work was performed in the control group for developing artistic and aesthetic competence of future teachers during their teaching internship. The repeated diagnostics in the EG and the CG had the following results: the low level of artistic and aesthetic competence was demonstrated by 15.9% of respondents in the EG and 46.5% of respondents in the CG, the medium level - by 35.2% in EG and 32.5% in CG, the high level - by 48.9% in the EG and 21.0% in the CG.

Dynamics in the level of artistic and aesthetic competence of future teachers in experimental and control groups is presented in Table 1.

Table 1 Indicators of the Level of Artistic and Aesthetic Competence of Future Teachers in Control and Experimental Groups, %

Level	Average value CG CG		Average value EG EG	
	Before experiment	After experiment	Before experiment	After experiment
Low	51,1	46,5	57,7	15,9
Medium	33,1	32,5	28,1	35,2
High	15,8	21,0	14,2	48,9

Source: compiled by the authors

The results presented in the table show that after the control stage of the experiment no significant changes were found in the CG in the competence levels of students, as compared to the EG, where significant qualitative changes in the distribution of students by level occurred: in the experimental group the number of students with high artistic and aesthetic competence increased by 34.7%, the number of students with the medium level increased by 7.1%, the number of students with the low level decreased by 41.8%; whereas, the control group showed a 5.2% increase in the number of students with the high level, a 0.6% decrease in the number of students with the medium level and a 4.6% decrease in the number of students with the low level.

Understanding of the practice-oriented educational task not only as a means of familiarizing with the educational content, but also as a way of comprehending the value of acquired knowledge, anticipating its use in educational, scientific, professional pedagogical activity, developing the ability to take responsibility, solve problems independently, find constructive solutions is reflected in the works of O. A. Abdullina (1990), T. V. Tatyana (2014), T. G. Chesuina (2006) and others.

The development of artistic and aesthetic competence, as well as in general the solidification of motivation, interest in educational activities becomes more effectively if practice-oriented tasks are performed by students on the basis of schools and educational institutions, where the problem under study is successfully addressed (Baiborodova, 2015).

The most important means is the teaching internship of students, which purpose is to consolidate and deepen theoretical training of students, to form and develop their professional competencies, to strengthen practical skills of organizing educational activities of children as well as experience of independent professional activity (Mamontova et al., 2016).

## 5 Conclusion

The conducted experiment helped to reveal that the implementation of a selection of practice-oriented tasks of artistic and aesthetic focus by future teachers during their teaching internship, contributed to changes characterizing the increase in the level of artistic and aesthetic competence of future teachers. This has been supported by the consolidated results of the study conducted at Mordovian State Pedagogical University named after M. E. Evseev which included six academic groups of students pursuing studies the field of training 44.03.05 Pedagogical Education (with two specialties). The obtained data indicated that before the experiment, 51.1% of future teachers in the control group and 57.7% in the experimental group had a low level of artistic and aesthetic competence, and after performing the tasks their number changed to 46.5% in the control group and 15.9% in the experimental group. At the same time 15.8% of respondents in the control group and 14.2% in the experimental group demonstrated the high level. After the students of the experimental group had completed selected practice-oriented tasks, this changed to 21% in the control group and 48.9% in the experimental group.

Therefore, the results obtained at the ascertaining and control stages show that the future teachers from the experimental group achieved more significant results as compared to the control group.

Completion of these tasks brought to future teachers understanding of the high importance of strong artistic and aesthetic competence for self-fulfillment in pedagogical activity, appreciation of the value of artistic and aesthetic knowledge for solving the applied tasks in pedagogical activity, acquisition of knowledge on basic means of artistic and aesthetic education, and reinforced their readiness to develop artistic and aesthetic taste in future students.

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## DEVELOPMENT OF THE RUSSIAN ARCTIC WITHIN THE CONTEXT OF CRISIS CAUSED BY COVID-19

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Abstract: The paper discusses the phenomenon of the present-day unique crisis generated by COVID-19 which has pushed forward conceptually new aspects of scientific comprehension, in particular, the development of the Russian Arctic. The pandemic COVID-19 has demonstrated its impact to have gone beyond the medical context resulting in sizable disruptions of social and economic life. The authors discuss the "Arctic" invariant phenomenon that may affect the economy of regions of the Arctic adversely, aggravating the unemployment and speeding up the population outflow. Thus, the consequences of the COVID-19 pandemic for the Russian Arctic are more than long-lasting.

Keywords: Russian Arctic, COVID-19, crisis, economy, risks.

### 1 Introduction

The paper deals with the phenomenon of the present-day unique crisis generated by COVID-19 which has pushed forward conceptually new topics and aspects of scientific comprehension of all social processes. This crisis has aggravated considerably systemic problems of the development of economies and social sphere both of the world's countries and regions, raising new issues having no analogs in the recent history. This predetermines the relevance of considering literally each and every aspect of the influence of the crisis generated by COVID-19.

In spite of the measures undertaken worldwide to curb spread of the virus, 17064064 confirmed cases of COVID-19, including 668073 cases of WHO registered deaths, were recorded as of July 31, 2020. All experts believe there are more real cases of infection and deaths due to COVID-19 that are not being reported. The situation with the spread of confirmed COVID-19 incidence and death rate is extremely non-uniform across regions: the North and South America – 8771,4 ill people per 1 million population (338,5 deceased per 1 million population); Europe – 3540,1 patients per 1 million population (227 deaths per 1 million population); East Mediterranean Region – 2078,8 ill ones per 1 million population (53,6 dead per 1 million population), Southeast Asia – 963,7 patients per 1 million population (21,3 deceased per 1 million population), Africa – 671,7 (11,4 deaths per 1 million population), Western Pacific Region – 154,8 (4,3 dead per 1 million population). Notably, Russia has adopted stringent restrictive measures; however, its incidence rate is one of the world's highest. So, as of July, 31, in Russia, the number of COVID-19 patients amounted to 839981, with the death toll being 13960.

There are no clear dependences of the incidence and death rates on the economic development level of particular regions and countries, which stems from not only the quality of the data, but also management, including the speed of introducing restrictive measures and their harshness.

This crisis has shown that what mainly determines the level of losses – not only the human, but the economic ones, too – is management (Yoo & Managi, 2020; Ismaila, Haniffb & Kassimc, 2020). Let it be explained, it is certainly the processes in the world's three production centers (China, Europe, and the USA cater for 63% of the world import and 64% of the export in production and sales chains) that set the general trends and conditions of the world economy restart (Uzan, 2020). However,

the timing and pace of the said world economy reboot is and will go on to be determined largely by management of a particular country and its regions (obviously, the extent of its influence depends on the size and structure of the national economy).

Thus, the impact of the crisis caused by COVID-19 will be country-specific not only due to the unique influence of the headwinds, specialization of the economies, but also due to the unique decisions of the management, as there are no uniform standard measures of responding to qualitative changes. Thus, covering the issues and consequences of the crisis in terms of particular areas goes to the forefront of both basic research and scientific and practical studies.

The study of the processes taking place in the specific areas of the Russian Arctic requires particular attention. Higher relevance of the scientific support for social and economic processes of the Russian Arctic is predetermined by the presence of a series of fundamental controversies of the development of this area. So, on the one hand, exploitation of natural resources of the Russian Arctic has to be stepped up for replenishing the budget of Russia, and the set task of raising the level of socio-economic development has to be accomplished. On the other hand, high costs of operation of the economy and social sphere, remoteness, unfavorable climate, and other adverse factors limit the economic activity and social development objectively, generating the clash between the requirements of exploitation of natural resources and those of ecology, etc. (Leksin & Porfiriev, 2015; Samarina et al., 2020; Larchenko, Gladkiy & Sukhorukov, 2019). The authors' studies have clearly shown that these systemic controversies demand compulsory enhanced participation of the state in all questions of operation in the Russian Arctic. They also determine that liberal economy functioning principles can only be used to a limited extent here due to higher costs of running the economy and social sphere of these areas (Baranov, Skufina & Gushchina, 2020; Serova, Korchak & Skufina, 2020; Skufina & Mitroshina, 2020).

The COVID-19 pandemic has led to disturbances of social and economic life. What consequences will there be for the Russian Arctic? How will the priorities of the policy and management change? The answers to these questions are still unknown, but it is they that are to determine the population's life activity and the economy of the Arctic in conditions of the monostructural economy. Mistakes of the post-Soviet management have resulted in systemic problems of the development of the Russian Arctic emerging – they are infrastructure losses, increased migration from these areas, simplification of the economy, and worse quality of life of the population (Leksin & Porfiriev, 2015; Skufina, Baranov & Samarina, 2021). There are concerns that these systemic problems will be aggravated under the effect of the objective causes of the present-day crisis. The past management experience gives evidence about further risks – the flaws of management of the Russian Arctic overlap with these destructive processes. Obviously, to bring the risks to the minimum, one has to know in detail the specific aspects of the current processes of the development of the Russian Arctic within the context of the crisis caused by COVID-19. This is exactly what determines not only the scientific importance but also the practical relevance of the research suggested which is aimed at diagnosing the current situation in the Russian Arctic.

### 2 Literature Review

The questions of the progress of the Russian Arctic within the context of the impact of the current non-economic source crisis have not been addressed by scientific studies so far. This is due to three reasons. The first one is obvious and objective: this is the well-known issue of delayed representation of findings when it comes to studying new phenomena and processes because studying them requires accumulation of the data, processing and

understanding them, with the publication process itself taking up some time, too.

The second reason is the uniqueness of the current non-economic source crisis which turned out to be a drastic shutdown for the world economy. A number of politicians and researchers of various domains of scientific knowledge compare this crisis to the Great Depression of the 1930s, the economic situation of the World War II, the 1998 and 2008 crises (Laing, 2020; Nicola et al., 2020). As a rule, the researchers confirm this association of the forecasted gravity of the crisis, the intensity of its impact, and catastrophic consequences for the world economy, national economies, regions, urban settlements, and particular areas. The authors believe the principal reason of turning to history of the world crisis is the search for similarities that are essential in conditions of uncertainty of the environment, which hinders the analysis of interrupted trends of indicators and the use of standard forecast methods.

The authors tend to the opinion that the current crisis caused by the COVID-19 pandemic is entirely different from the previous ones due to several reasons. The principal reason is the fact that production and economic activity was partially or completely stopped by managerial decisions almost throughout the world, with unforeseen consequences for the economy and qualitative changes to social processes looming (Rapaccinia et al., 2020; Puriwata & Tripopsakulb, 2020). M. Uzan (2020), Executive Director and Founder of Reinventing Bretton Woods Committee, said: "This is a unique event in history. This crisis will change the way we think about the global economy, about global governments, about regional integration, and so on". Moreover, some researchers believe the crisis to have disrupted the formed chains of global relations, global production linkages, to have drastically changed the structure of geopolitical and economic risks, and to have outlined new conditions for social relations, – which means, their possible transformations (Labukin, 2020). Studies show that it is not the analytics practiced by years but the news that has the decisive meaning for making investment decisions in the period of the COVID-19 pandemic (Salisua & VinhVob, 2020).

The words "the world will never be the same" is now the prevailing metaphor of the economists, politicians, journalists, and virtually everyone. Accordingly, this crisis is to conceptually change people's idea about focus areas and conditions of the development of the Russian Arctic. Nevertheless, even as of the present point of time, they have not yet accumulated sufficient data worldwide to make valid suppositions about how exactly and how profoundly the world will change. The renowned analytical agencies and organizations forecast so broad a range of possible changes of the principal indicators, as seen in Figure 1, that one should rather speak about the change vector than about the forecast.

Figure 1 Summary of recent forecasts for the world GDP and trade

	Real GDP (% change)		Trade volume (% change)		Elasticity (ratio)	
	2020	2021	2020	2021	2020	2021
WTO Trade forecast (April 2020)						
- optimistic scenario	-2.5	7.4	-12.9	21.3	5.3	2.9
- pessimistic scenario	-8.8	5.9	-31.9	24.0	3.6	4.1
IMF World Economic Outlook (April 2020)	-3.0	5.8	-11.0	8.4	3.6	1.4
World Bank Global Economic Prospects (May 2020)	-5.2	4.2	-13.4	5.3	2.6	1.3
OECD Economic Outlook (June 2020)						
- single hit scenario	-6.0	5.2	-9.5	6.0	1.6	1.1
- double hit scenario	-7.6	2.8	-11.4	2.5	1.5	0.9
Memo items:						
IMF GDP at market exchange rates	-4.2	5.4	-11.0	8.4	2.6	1.6
World Bank GDP at purchasing power parity	-4.1	4.3	-13.4	5.3	3.3	1.2

Source: WTO Secretariat, International Monetary Fund, World Bank, Organization for Economic Cooperation and Development, Federal Reserve Bank of Philadelphia, European Central Bank (Trade falls steeply in first half of 2020, 2020)

Similarly, the short series of the statistical data on the development of the Russian Arctic do not enable one to identify clear internal trends that can be extrapolated. Hence the

researchers of the Russian Arctic do not have set subjective ideas about the way the economy of the Arctic oriented to exporting natural resources and products of their processing (which means, depending on the world processes) is going to develop. Clearly, the lack of such ideas, valid forecasting of the world economy development hindered, and even more difficult forecasting of Russia's secondary economy limit the possibility of making valid hypotheses about the progress of the Russian Arctic considerably.

The third reason is the intensive norm-setting which determines socio-economic development processes of the Russian Arctic and coincided with the sweep of the world crisis caused by COVID-19. The authors believe this factor to have also limited scientific research aimed at studying possible qualitative changes in conditions of the development of the Russian Arctic in the nearest future. Notably, Russian researchers of the economy of the Arctic, including the authors of this paper, have been extensively involved into the norms-creating processes in recent years. In the first half of 2020, an entire package of much-anticipated laws has been enacted consolidating protectionism, resulting in considerable benefits for business investing into the economy of the Russian Arctic.

The principal law to establish a special legal regime for the Arctic zone of the Russian Federation, the state support measures, and the procedure of entrepreneurial activity in the Russian Arctic is the law "On the state support of entrepreneurial activity in Arctic zone of the Russian Federation", approved by the President of Russia on 13/07/2020. The essence of the package of documents concerning the development of the Russian Arctic is up to the world practice establishing protectionism towards business and compensations for the population (Heininen et al., 2019; Serova, Korchak & Skufina, 2020). The benefits for the entrepreneurial community of the Arctic being available both for large enterprises and smaller business and consolidated in law are the factor to contribute to the recovery of Russia's economy in the mid-term period.

However, there is a group of other factors preventing the economy of the Russian Arctic from slumping. Usually, in a stable situation, scientists evaluate these factors as negative for the development of the Arctic: 1) relative simplicity of the economy oriented to exploiting natural resources, 2) poor development of smaller business; 3) underdeveloped trade and services sector as compared to the general Russian situation (Leksin & Porfiriyev, 2015; Skufina, Baranov & Samarina, 2021; Skufina et al., 2019). Still, the authors believe that in the crisis conditions, it is these factors that will ensure greater stability of regions of the Russian Arctic as compared to Russia's other regions characterized by more diversified economies. Notably, the set of the said factors is a kind of invariant. Let it be reminded from mathematics that invariant is a property which does not change under the given transformations. The "Arctic" invariant is the very group of factors characterizing the economy of the Arctic and remaining unchanged in spite of efforts of the state management to eliminate these specific features of the economy.

### 3 Research Methodological Framework

The objective of the research is to diagnose and find out the specific aspects of the impact of restrictions caused by COVID-19 on the economy of regions of the Russian Arctic, it will be considered within the context of the condition of both the world and Russia's economy. The research will examine how the impact of the crisis on the economy of the Arctic is associated with the phenomenon of the "Arctic" invariant and how it ensures the stability of the economy of the Russian Arctic in the crisis period. Thus, the research hypothesis is as follows: regions of the Russian Arctic demonstrate higher stability of the economy as compared to the general Russian situation when going through numerous restrictions, problems, and changes caused by COVID-19.

The Russian Arctic is Russia's regions the areas of which are entirely included into the Arctic zone of the Russian Federation (according to the Decree of the President of the Russian Federation dated May 2, 2014 No. 296 "On land territories of the Arctic zone of the Russian Federation") - Murmansk Region, Nenets Autonomous District, Yamal-Nenets Autonomous District, and Chukotka Autonomous District.

The study of the available information about the specific aspects of the impact the current non-economic source crisis has on economies of countries, regions of the world, and specific areas points to the ambiguity, controversy, and quite frequently, inaccuracy of the information. Hence the input materials used by the authors are the data of the official statistics provided by the state statistics services.

The tasks and the relevant stages in methodology of diagnosing the consequences of the crisis for the economy of regions of the Russian Arctic are as follows.

1. Identifying the scale of impact the crisis caused by COVID-19 has on the world economy.

The importance of completing this task is determined by the increased dependence of the raw materials economy of the Russian Arctic on condition of the world economy.

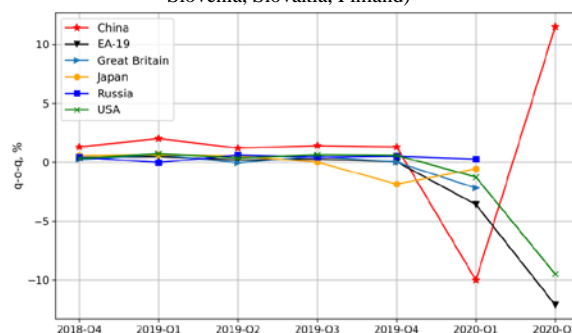
The authors are going to consider the quarterly behavior of GDP of the world's principal economies for the periods from 2019 to the first or second quarter of 2020, where the data is available.

2. Considering the impact of the crisis caused by COVID-19 on the economy of Russia's Arctic regions and the country in general. The authors are going to use monthly running data about socio-economic position of Russia provided by the Federal State Statistics Service. The indicators under analysis are: the industrial production index, retail trade turnover, number of the unemployed. To single out the impact of the crisis, they study ratios of the indicators in % for January 2019 to June 2019 and for January 2020 to June 2020 to the similar periods of previous years.

#### 4 Results and Discussion

In the first quarter of 2020, the countries in figure 2 (except Japan which shows a slight growth of GDP) demonstrate a reduction of GDP growth as compared to the previous quarter in 2019. It should be noted that restrictions (pandemic lockdown) were introduced in Russia during the last week of March, 2020 so GDP has remained stable during the first quarter of 2020. Regrettably, as of writing this paper, the 2020 second quarter GDP data was only available for China, the USA, and 19 countries of the European Union (EA-19). The most pronounced drop of 10% was experienced by China in the first quarter of 2020; this period coincided with the peak of the COVID-19 pandemic for China. In the second quarter of 2020 China experienced a 11.5% growth in GDP, this can be attributed to the fact that China succeeded in reducing the COVID-19 incidence rate significantly, which has allowed lifting the restrictions. A similar drop of GDP in the first and second quarters of 2020 can be noted in the USA (9.5%) and Europe (12.1%). This is also accounted for by restrictive measures adopted by governments due to the surge of the COVID-19 incidence rate.

Figure 2 Seasonally adjusted GDP growth rate compared to previous quarter for China, Great Britain, Japan, Russia, USA, and 19 European countries – EA-19 (Belgium, Germany, Estonia, Ireland, Greece, Spain, France, Italy, Cyprus, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Austria, Portugal, Slovenia, Slovakia, Finland)



Source: authors' calculations based on the statistics data for countries and regions of the world (Organization for Economic Co-operation and Development, 2020)

Table 1 Industrial production indices in % of the respective period of the previous year for January-June 2019 and January-June 2020, for Russia and Arctic regions

	Russia	Murmansk Region	Yamal-Nenets Autonomous District	Nenets Autonomous District	Chukotka Autonomous District
Jan-2019	102.0	102.3	117.0	99.2	80.3
Feb-2019	103.6	97.4	121.0	102.7	81.3
Mar-2019	101.8	95.4	123.4	101.0	137.9
Apr-2019	104.1	103.3	137.8	97.8	107.9
May-2019	99.9	110.7	128.9	97.2	97.9
Jun-2019	101.9	104.4	124.8	99.1	111.3
Jan-2020	101.1	98.5	101.2	98.0	115.9
Feb-2020	103.3	102.5	103.1	101.0	120.6
Mar-2020	100.3	99.3	96.6	98.0	71.0
Apr-2020	93.4	90.5	97.5	101.0	111.4
May-2020	90.4	95.1	93.1	81.9	112.9
Jun-2020	90.6	98.4	90.1	79.3	93.0

Source: authors' calculations based on the statistics data for Russia (Federal State Statistics Service of Russia, 2020)

The analysis of behavior of industrial production indices, in table 1, is indicative of the ambiguity of the situation among regions of the Russian Arctic. So, in Murmansk Region, beginning from March 2020, with the introduction of restrictions in Russia, the regions' industrial production shrinks. Meanwhile, the situation is different from that of the similar period of 2019 in a qualitative way, as the industrial production in Murmansk Region was characterized by growth (with the only exception being March 2019).

The trends of Murmansk Region are similar to Russia's situation; however, they feature less shrinkage of production than in the entire country as a whole. There is a certain similarity to the situation in Russia which stems from the economy of Murmansk Region being the most diversified one among regions of the Arctic. So, the smaller decrease of production observed in Murmansk Region is explained by two factors. First, a noticeable share in the structure of the economy of Murmansk Region belongs to mining the mineral raw materials (13,4% of GRP), the demand for which has not seen essential change during the COVID-19 pandemic. Second, fishery and fish farming occupies an important part in the GRP structure (13,0% of GRP), and the demand for products of this industry did not fall in the period of the pandemic.

The economy of Yamal-Nenets Autonomous District is based on mining (61,1% of GRP). For Yamal-Nenets Autonomous District, the decrease of industrial production has been characteristic since March 2020, although a less pronounced one than the general Russian situation. In this region, the similar period of 2019 was characterized by the growth of industrial production, which was associated with new deposits being

developed. Shrinkage of the region's industrial production since March 2020 is accounted for not so much by Russian restrictions introduced due to the pandemic but rather by the shutdown of the world economy, which has led to the drop of the world demand. It should be noted that during the pandemic, mining has not been suspended in any region of Russia.

The economy of Nenets Autonomous District relies on mining, too (76,2% of GRP). For Nenets Autonomous District, a rapid deterioration in the situation has been observed since April 2020, with the state of affairs being worse than that throughout Russia. This is explained by the slump of mining in the region, which is also associated with the world economy shutdown and drop in the demand worldwide.

As for Chukotka Autonomous District, the basis of its economy is also mining of mineral resources (43,5% of GRP). Chukotka Autonomous District demonstrates the slump of industrial production in March 2020 only, which cannot be a consequence of the pandemic. In April and May 2020, a growth of industrial production was observed (which is probably related to stepped-up mining in gold and silver deposits), with a recession in June – a smaller one than the average for Russia, though.

Consideration of the retail trade turnover, as shown in table 2, in the period of the pandemic reveals a shared feature characteristic of the economy of all regions of the Arctic, that is a more favorable situation in trade than the average Russia's one. So, for Murmansk region, Yamal-Nenets Autonomous District, and Nenets Autonomous District, a smaller decrease of the retail trade turnover has been characteristic in the period of restrictions caused by COVID-19 than for Russia on average. Meanwhile, there are no changes in behavior of this indicator observed for Chukotka Autonomous District at all. As for Murmansk Region, so early as in June 2020, the retail trade turnover grew up to 104,6% as compared to the similar period of 2019.

Pointedly manifested in the Arctic, this particularity stems from three interrelated factors. First of all the purchasing power of the population of the Arctic is higher than the average one in Russia, which is associated with high wages of the population of the Arctic exceeding the average Russian level considerably. Secondly, the restrictions introduced by the Russian government did not apply to the work of mineral resources mining enterprises – which are the main industry of Russia's Arctic regions. This kept the income of the greater part of households of the Arctic afloat. Thirdly, the smaller and medium retail trade business sector is little developed in regions of the Russian Arctic traditionally, as compared to the general Russian situation. Respectively, the share of households whose income directly depends on the pandemic period restrictions imposed for retail trade outlets functioning is lower in regions of the Arctic than in Russia on average. This also supported purchasing power of the population of the Arctic.

Table 2 Retail trade turnover, in % of the respective period of the previous year for January-June 2019 and January-June 2020, for Russia and Arctic regions

	Russia	Murmansk Region	Yamal-Nenets Autonomous District	Nenets Autonomous District	Chukotka Autonomous District
Jan-2019	102.2	99.3	100.8	103.1	104.3
Feb-2019	102.3	99.5	99.3	102.3	103.5
Mar-2019	102.4	99.6	100.0	100.5	101.8
Apr-2019	102.0	99.2	103.6	97.9	103.1
May-2019	101.9	101.4	105.2	95.0	101.1
Jun-2019	101.8	102.9	104.4	97.0	104.0
Jan-2020	102.7	99.2	101.6	101.7	100.4
Feb-2020	104.7	99.3	102.1	104.7	102.4
Mar-2020	105.7	100.9	100.1	101.5	101.2
Apr-2020	76.8	89.1	83.0	90.4	100.0
May-2020	80.8	91.9	88.2	92.1	100.2
Jun-2020	92.3	104.6	97.8	98.2	100.3

Source: authors' calculations based on the statistics data for Russia (Federal State Statistics Service of Russia, 2020)

The problem of unemployment in the Arctic caused by restrictive measures due to COVID-19 is much less urgent than in Russia on average as seen in Table 3. So, while during the

pandemic, the number of the officially registered unemployed in Russia (in % of the respective period of 2019) grew exponentially, amounting to so much as 370% in June, such a situation is not characteristic of any of the Arctic regions. It should be noted that the surge in the number of the registered unemployed is explained not only by the reduction of the number of employees in the economy but also by the result of the country's social anti-crisis support measures, including, among other things, the significantly higher unemployment benefits. Notably, as of writing this paper, the official statistics has not provided any data yet on the increment of the overall unemployment in regions of Russia.

Table 3 The number of the officially registered unemployed in % of the respective period of the previous year for January-June 2019 and January-June 2020 for Russia and Arctic regions

	Russia	Murmansk Region	Yamal-Nenets Autonomous District	Nenets Autonomous District	Chukotka Autonomous District
Jan-2019	94.2	100.0	103.3	100.0	97.7
Feb-2019	99.9	102.9	112.1	87.5	96.7
Mar-2019	104.4	105.8	104.1	87.5	99.0
Apr-2019	107.8	109.0	103.1	100.0	98.5
May-2019	106.3	108.1	85.7	85.7	100.7
Jun-2019	105.7	105.1	83.2	100.0	96.7
Jan-2020	95.4	94.2	101.4	57.1	93.9
Feb-2020	91.4	91.7	109.3	71.4	93.6
Mar-2020	88.8	89.0	107.8	71.4	88.5
Apr-2020	160.5	116.4	166.6	75.0	89.3
May-2020	280	159.7	138.7	116.7	93.6
Jun-2020	370	n/a	n/a	133.3	107.0

Source: authors' calculations based on the statistics data for Russia (Federal State Statistics Service of Russia, 2020)

## 5 Conclusion

Using the results of analyzing the quarterly GDP pattern of the world's major economies, it has been found that the crisis has had an impressive impact on the world economy, its scope and rate varying. In Europe and the USA, the crisis proved itself the most extensively, while China saw GDP grow so early as in the second quarter. Among other things, China's situation is explained by the country's lifting its restrictive measures earliest of all owing to the COVID-19 incidence rate plummeting in the second quarter of 2020. According to the results of discussion of the crisis caused by COVID-19 in scientific literature, forecasts of the WTO, the World Bank, etc. a strong recovery is not something to be expected for the world economy. Meanwhile, its downturn creates the threat of lingering demand shrinkage for the principal exports of the raw materials economy of the Russian Arctic.

Using the statistical data characterizing production, retail trade, and unemployment plotted over time, the authors conducted diagnosing of the way the crisis caused by COVID-19 affected the economy of Russia's Arctic regions (Murmansk Region, Nenets Autonomous District, Yamal-Nenets Autonomous District, Chukotka Autonomous District) and the country in general. Their findings have confirmed the principal hypothesis of the research completely, to the effect that regions of the Russian Arctic demonstrate higher stability of the economy as compared to the general Russian situation when getting over the numerous restrictions, problems, and changes caused by COVID-19.

The analysis has confirmed that the specific aspects of the impact the crisis has on the Russian Arctic stem from the "Arctic" invariant – a group of permanent factors determining the specific context of the economy of the Russian Arctic (simplicity of the economy, its orientation to exploitation of natural resources; poor development of the smaller business; underdeveloped sector of trade and services as compared to the general Russian situation).

The lingering character of the world crisis can turn round the state of affairs. In this case, the "Arctic" invariant is even likely to outline the opposite, negative development vector for the Russian Arctic – reduced industrial production, shrinkage of the

poorly developed smaller business, and higher losses due to migration.

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## SOCIAL FACTORS, PARAMETERS AND EFFECTS OF FORCED SELF-ISOLATION IN RUSSIA

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**Abstract:** The COVID-19 outbreak announced by the World Health Organization as a pandemic in January 2020 led to the unprecedented response measures in most countries around the world who are seeking to contain the spread of this disease. Among such responses were imposed quarantine and self-isolation. The purpose of the paper is to identify social factors and trends, and to predict the effects of forced self-isolation in Russia during the COVID-19 pandemic in spring and summer 2020. The primary challenge in the research was to reveal differences in the impacts of lockdown on various social groups across Russia differentiated by their quality of life, living standards and lifestyle, fields of occupation and forms of ownership (state or private, including small businesses).

**Keywords:** self-isolation, pandemic, social factors, social stratification, coronavirus, COVID-19, Russia.

### 1 Introduction

On January 30, 2020, The World Health Organization has declared a public health emergency of international concern that constitutes a public health threat going beyond the affected state's national border (WHO, 2020).

Unprecedented measures have been taken by the governments of many nations, including the Government of Russia, to prevent the spread of COVID-19 for a multitude of valid reasons, primarily, the dedication to protect the population of their countries from infection, as this disease poses a high risk of a large number of people contracting the infection at the same time, which is related to the properties of its causative agent, the SARS-CoV-2 virus.

The unwitting social experiment instigated by the pandemic with forced self-isolation of the global population and its social, psychological, economic and political effects have yet to be thoroughly investigated by the researchers.

### 2 Literature Review

The studies currently underway in different countries may be roughly divided into those focusing on medical aspects and those focusing on social aspects of the pandemic. As noted by M. Haghani et al. (2020), based on the analysis of more than one thousand texts on the pandemic, the medical research dominates, while social aspects remain understudied.

T.L. Huynh (2020) analyzed the role of the cultural dimension in practicing social distancing across the world. By drawing the data from the Google COVID-19 community mobility reports and the Hofstede cultural factors for 58 countries over the period from 16 February to 29 March 2020, he found that countries with higher 'Uncertainty Avoidance Index' predict the lower proportion of people gathering in public such as retail and recreation, grocery and pharmacy, parks, transit stations, workplaces.

A group of French researchers has revealed some specific social effects of self-isolation during the pandemic. Having analyzed the perceived health status of the population before and after the pandemic, they found that self-reported health and well-being have improved during the lockdown in comparison to previous years. They described this counterintuitive phenomenon the "eye

of the hurricane" paradox: the large majority of individuals who are not infected by the virus may be seeing their current condition in a more positive light than they normally would. There are, however, divergences across social groups that reflect socioeconomic inequalities. In particular, blue-collar workers deviate from the prevailing trend as their level of self-reported health declines over the lockdown period, Parisian residents experience a sudden drop in their subjective well-being, and people working long hours at home exhibit higher levels of stress during the quarantine (Recchi et al., 2020).

J.E. Stokes and S.E. Patterson (2020) focused their attention on the intergenerational relationships in families and the magnitude of infection risk. They assert that families and intergenerational relationships are important sources of risk for COVID-19 infection, especially for older adults who are at high risk of complications from the disease. If one family member is exposed to the virus they could serve as a source of transmission or, if they fall ill, the resources they provide to others could be severed. These risks may be especially heightened for family members who work outside the home and provide care, or for those family members who care for multiple generations. Policies have the potential to help families bear the burden of these decisions. This essay argues that policies that address health, employment, and other social issues have implications for families, and that policies aimed at families and caregivers can affect the health, employment, and the general well-being of the nation (Stokes & Patterson, 2020). It is highly important to capture this consideration in the Russian situation, where, as evidenced by research, family relationships are very strong and form a part of national culture (Maximova et al., 2018).

E. Goffman (2020) draws attention to the aspect of self-isolation at the global level. He underlines that the coronavirus pandemic provides opportunities for a new kind of a globalization, in which people live far more local lives than in recent decades but with greater global awareness through a connective world brain.

The authors have explored various socio-economic and political effects of the pandemic based on the evidence from different countries. In particular, the evidence came from the studies in China (Pan et al., 2020), Vietnam (Xuan et al., 2020; Tran et al., 2020), Africa (Okoi & Bwawa, 2020; Amadasun, 2020), Australia (Beck & Hensher, 2020) and others.

Thus, the topic of social effects of the pandemic spread and implemented self-isolation measures has already received certain coverage in the scientific literature; nevertheless, the studies pivoting around the Russian specifics of the above processes are rather scarce so far.

### 3 Research Methodological Framework

The purpose of our research was to identify social factors and trends, and to predict the effects of forced self-isolation in Russia during the COVID-19 pandemic in spring and summer 2020.

The primary challenge in the research was to reveal differences in the impacts of lockdown on various social groups across Russia differentiated by their quality of life, living standards and lifestyle, fields of occupation and forms of ownership (state or private, including small businesses).

The methods used in this research are interdisciplinary in nature and based on the methodological principles of Digital Humanities. The research employed analytical methods at the interface between the precise and social sciences, as well as methods of qualitative sociology, i.e. the in-depth interviews. In order to obtain the vastest possible array of representative and diverse data, we carried out the analysis of the available unstructured big data using Big Data Mining tool (via the IQBuzz service), the analysis of economic statistics, the network analysis of communications between social media users, along with the substantial discourse analysis of the content posted on

social media and the narrative analysis of the records from the in-depth interviews with representatives of various socio-demographic groups of Russian residents (n=20).

#### 4 Results and Discussion

In general, the effects of self-isolation in Russia include both social functions and dysfunctions. Paradoxically, there are also signs of social eufunctions, strengthening the Russian society at both national and local levels. Such eufunctions should be divided into explicit and latent. By explicit functions we mean objective results which facilitate adjustment and adaptation of a system and which are planned and realized by the participants in this system (Merton, 1968).

As the interviews have revealed, the explicit functions of self-isolation in Russia as a social phenomenon include socio-economic, socio-political, and socio-cultural effects. The socio-economic functions of self-isolation are implemented in the following areas:

- 1) Loss of habitual routines and pastimes has given an impetus to the search for new ways to structure a day, most common of which include: a) mastering the modern ways for completing main job tasks remotely by taking advantage of digital technology; b) time and money savings on commuting; c) advanced training and, especially, retraining for new professions and acquisition of new specialties; d) a more rational approach to the finding a right balance between time and efforts spent on work and on personal life (coping with household duties, more productive communication with children and other family members).
- 2) Changes in the sectoral structure of employment resulted in an additional injection of employable population into the vital economy sectors and an outflow of the employed from the sectors that generated excessive or induced consumption, as well as from the advertising sector.
- 3) A shift in the perceived socio-economic and general social importance of jobs in certain fields, in particular: (a) revision of the social value of medicine toward its higher appreciation, with the attitude to such fields as show business, professional sports, etc., becoming less positive in terms of their reduced social importance and prestige; b) during the period of self-isolation, the importance of the hotel, catering and tourism industries have plummeted, the services of guides, animators, customs officers fell out of demand, as well as a fairly common in Russia unofficial sector of employment - the street trade with souvenirs and the services of amateur tour guides; while the role of volunteers and courier delivery of goods has increased; (c) import replacement and domestic production grow stronger to the detriment of imported goods, and urban and suburban infrastructure is being developed through the reconstruction of water and sewage systems, the construction of roads, telephone and electricity networks and the improvement of urban landscapes.
- 4) The implemented measures of social and financial help to the most vulnerable population categories (children, partially - senior citizens and the unemployed, temporary - bank debtors, etc.) restored the living standards (but not the quality of life) of the people in the referred social categories and their families.
- 5) Social restrictions have led to the pursuit of legal ways out, such as temporal or permanent relocation to suburban houses (dachas), to small settlements to re-unite with relatives.

The socio-political functions of self-isolation are as follows:

- 1) Decline in the outdoor political activities and, in general, non-parliamentary public activities made it easier to hold a public vote on amendments to the Constitution of the Russian Federation and elections in some regions and secured the win of the official political course.
- 2) Unclear position of non-systemic liberals swinging from condemning the authorities for the extremely harsh self-

isolation measures, to criticizing inadequacy of such measures, does not add any popularity to the opposition.

- 3) The imposed measures have reinforced the loyalty (albeit temporarily) of the majority of population to the authorities.
- 4) There was a quick and mass transition to the digital (and therefore swift) means of communication between the authorities and the people, accelerating responses of officials to complaints, requests and applications of citizens.
- 5) The social stratification has become more pronounced with people falling into the broad categories of those who watch official TV channels, those who give preference to the Internet and those who read books (which, however, also leads to further political diversification of citizens).

The socio-cultural functions of self-isolation in Russia include:

- 1) Gnoseological function consists in obtaining and replenishing knowledge, skills and abilities not only for remote jobs, but also for strengthening sanitary and hygienic competencies of millions of Russians.
- 2) Communicative function implies the development of new communication skills through the Internet, social media and phones by those who used to be distant from this.
- 3) Cultural and educational function means learning new languages, and professions, getting information about movies, books, performances from mass media and the Internet due to more time for leisure.
- 4) Recreational function means restoring health and energy depleted in work and household running.
- 5) Function of legal conscience and rule of law means prevention of delinquent and even deviant behavior due to the higher social control from the nearest, home environment and less time out of home.

Latent functions represented by some eufunctions and multiple dysfunctions include the following:

- 1) Psycho-physical-somatic effects: a) the visual consumption of digital information is growing, which leads to vision impairments b) physical activity has sharply decreased due to the stay-at-home lifestyle, which causes hypodynamics and overweight, c) "domestication" of people has not resulted, as expected by some authors, in higher birth rates, but brought the mortality rates to the record high (from January to May 2020, the natural decline in the population of Russia was 221.3 thousand people). Whereas earlier the decline was due to the falling birth rate and drop in the mortality rate, in May the birth rate was low while the mortality rate increased. At the same time, as we learned from the interviews, wider possibilities to take care of each other in the family and more intra-family communications may strengthen the family-marital and sexual relations.

2) Socio-economic effects:

- according to the Federal State Statistics Service, on the background of the restrictive measures imposed to combat the COVID-19 pandemic, during the four months of 2020 (from March to June) unemployment rate among the economically active population was as follows: 4.7% (3.485 million people) in March; 5.8% (4.286 million people) in April; 6.1% (4.513 million people) in May; and 6.2% (4.606 million people) in June. Economically active population (15 years of age and older) in June 2020 accounted for 74.7 million people, which is 51 percent of the total population of the country. Unemployment rate in the country is the highest for the last eight years, since March 2012 (6.3%);
- the pandemic has led to the economic restructuring, which is not always beneficial: according to the Federal Tax Service of the Russian Federation the most affected industries are road haulage, air, water and rail transport, tourism and hospitality, exhibitions, culture and leisure, public catering, consumer services, non-food retail, dental services, additional education, mass media. These sectors employ 6.7 million people, of which 3.4 million are in

small and medium businesses, with half of the shopping malls already hovering on the verge of bankruptcy;

- the economy and wages plunged leading to protracted stagnation: in January, before the novel coronavirus pandemic, the Ministry of Economic Development of the Russian Federation forecasted the economic growth at 1.9% in 2020, and at 3.1% in 2021. Decrease in business revenues and expected further worsening of the conjuncture already at the end of the first quarter, ahead of the impact of stringent quarantine measures, has negatively affected payment discipline in the Russian economy. Amid high uncertainty due to the impossibility to predict lifting of the quarantine measures, any positive changes in the Russian economy are rather improbable;
- latent function of the quarantine regime is the destruction of the model of demonstrative consumption of goods and services in order to inflate own social status;
- dysfunction is expressed in the growing gap between regions, when depressed regions after the mass loss of last jobs are dropping down the scale of welfare in the times of crisis; the Russian economy even before the pandemic suffered from the lack of innovations, which was flagged by O.T. Astanukulov et al. (2019), who noted that the particularities of business processes in innovative activities of organizations lead to uneven distribution, specific cost structure in the crisis and a traditional situation of the lack of innovations in financing. So, during the economic slowdown exacerbated by the pandemic, the further decline in these indicators is inevitable.
- such failures in medicine as the elimination of FOS (Feldsher-Obstetric Stations) in villages and no vertical governance in this area, as well as managerial mistakes that incited panic when each and every patient was admitted to hospital, had a negative impact on the fight against the virus. It is obvious that in this scenario even infinitely large pool of ambulance cars and crews would be insufficient.

### 3) Socio-political effects:

- a) social protest and discontent, no longer present in the public space, just congest in people's minds and at times break through into mass protests, as is currently happening (July 2020) in Khabarovsk. At the same time, the reasons for the protest are compounded by frustration with the imposed preventive measures, the overall decline in the welfare of the population and the growing social fatigue and discomfort from self-isolation and remote work;
- b) the rise in dysfunctional effects of quarantine is accelerated by unsuccessful measures of regional authorities in the fight against the virus: both frequent underreported cases, concealment of true figures, and overreported cases (including other diseases) to "squeeze" additional financing from the central budget.

### 4) Sociocultural effects:

- a) the increasing influence of advertising, due to the longer time spent in front of TV, drives a behavior of excessive and prestigious consumption (although not always);
- b) virtualization of education leads to the ultimate loss of its formative functions, its capacity to nurture humanistic traits;
- c) in many ways, the one-sided nature of distance learning, the lack of live contact with a teacher deprives students of the opportunity to create, think, or even experiment;
- d) online education de-structures school and university teams of students, the mutual support and responsibility for others, the high discipline of teams are lost, the possibility of "parallel mentoring" is lost, and the number of foreign students and professors is reduced;
- e) the out-of-school and extra-curricular (at universities and technical colleges) activities of students disappear;
- f) prerequisites are created for further social stratification of students, when the majority of them will receive only distance education, while children of the "elite" and the rich will receive full-time education. In this context, as

O.E. Ivanova (2019) rightly notes, with the introduction of information technologies for learning, the strategy of utilizing critical thinking is increasingly abandoned, which negatively affects the level of human capital development.

The coronavirus pandemic and its effects, in particular, changes in the living conditions of people, quite naturally found their expression in the postings of social media users.

A number of certain search word combinations related to the coronavirus pandemic, such as "self-isolation", "distance or remote work", "rest", "income", have been set up to analyze the big data using the IQBuzze service.

We analyzed a time span from December 1, 2019, when the world mass media, including social media, hotly discussed a situation with the novel coronavirus and its spread to different countries, and until July 2020, when the pandemic in Russia, according to official statistics, showed signs of receding.

The analysis has yielded the following results.

It is explainable that the problems associated with lockdown did not concern Russian residents in the period from December 2019 to the end of March 2020, as it did not directly affect their interests and habitual lifestyle.

Reports related to the coronavirus and self-isolation during the indicated period, except for the blatant fakes dumped to incite panic, are in the overwhelming majority wait-and-see and neutral.

The situation has changed a little in the second half of March. More and more authors view the self-isolation regimes of different kinds positively and call on the authorities to impose more restrictive measures, even such as introducing quarantine. In particular, a survey on the website of the EADaily news agency at the end of March on the support of restrictive measures showed that more than 70% voted for the restrictive measures, 15% voted for further toughening of measures, and very few voted against this.

At the same time, there is a growing number of postings expressing concerns about the negative implications of restrictive measures, from civil rights violation to the negative impact of self-isolation on businesses across the vast majority of industries.

The peak of postings related to self-isolation falls on a period from March 30 to April 3, when after the nationwide non-working week, a self-isolation regime was announced by the President of the Russian Federation.

Within the indicated period, there was the highest number of both positive and negative postings related to the self-isolation regime. However, it is worth noting that the vast majority of comments from social media users in the Russian-language segment of Internet are neutral. The IQBuzze service identified 97.8% neutral statements related to the self-isolation regime in the entire array of analyzed comments. They are either judgement-free or balanced, pointing to both positive and negative aspects of the self-isolation regime.

Only 1.5% of analyzed postings give a strong positive assessment of the regime and only 0.7% convey a negative assessment.

Thus, we can conclude that Russian Internet users in the vast majority were quite calm about introduction of the regime of self-isolation in Russia.

Another aspect analyzed using the IQBuzze service is distance or remote work amid coronavirus.

The coronavirus pandemic has significantly changed the traditional working interactions at the enterprises. Forced transition to remote working in most companies not only

demonstrated the viability of such working arrangements, but laid bare upsides, as well as downsides of such work.

It is quite understandable that the majority of comments in the initial period are negative, as most companies are not used to this mode of work. Among the downsides, social media users mention the web resources overload due to a large number of videoconferences, the information security concerns, certain inconveniences suffered by employees due to the impossibility to setup effective work from home and a number of other negative aspects associated with the forced changes in the usual working routine. At the same time, the upsides of remote work are also highlighted, such as time savings on commuting, reduced production costs due to no need to create new jobs, a possibility to hire narrowly focused specialists for remote work, and many more, with all this predetermining the overall tone of postings in social media.

Thus, almost 97% of postings are neutral, slightly less than 3% are positive and only 0.1% are negative.

It can be concluded that the Russian labor market has now adapted to remote working, and in the future the remote work will become increasingly demanded by most enterprises and organizations.

## 5 Conclusion

Thus, the analysis of social effects of self-isolation in Russia makes it possible to draw a conclusion about institutionalization and even ritualization of self-isolation in Russia as a social phenomenon and social institution. Having emerged as one of the measures in the fight against the virus, self-isolation has influenced all economic and social activities and ways of leisure, becoming a ubiquitous factor in social relations, axiological, ideological and moral-aesthetic structures and performing important economic, socio-political and cultural functions in the Russian society.

The social effects of self-isolation are quite ambivalent, which applies both locally in the regions and nationwide (Russian Federation). As shown by the research results, the transition to self-isolation has led to a very clear division of the Russian society into five social groups, which may be briefly described as follows:

1. "Domestic" - these are people who, before the new social communication regime, spent most of their time at home; these are unemployed pensioners and the disabled, children not attending preschool institutions or schools, housewives, and the temporary and permanently unemployed);
2. "Deprived" - those who (temporarily or permanently) lost their jobs and earnings due to the new regime of isolation - small entrepreneurs and hired workers from small businesses, such as public catering and beauty salons, domestic and international tourism, film distribution and management of events, weddings, festivities, religious services, partially - show business; the culture preservation and dissemination sector and professional sport have undergone dramatic downsizing, though the branches of public administration and political parties, as well as public organizations have been little affected so far; many people in the above industries transitioned to working online or were sent to vacations;
3. "Remoters" - those are scientists, teachers at colleges, technical schools, higher education institutions, primary and secondary schools, as well as tutors, counsellors, students and others, including those who worked remotely before the pandemic (remote work, freelance, stringing, work as editors, copywriters, home-based distributors, etc.); in most cases, the workload of this category has increased due to their transition to remote working and a need to collect written, audio and video materials to be included in their work progress reports, but, on the other hand, it became more convenient for them to plan working time and work with children, they improve their digital

skills in the online channels of work, which previously were underdeveloped;

4. "Underground" - those are people who have illegally or semi-legally attended their workplaces - in private firms for the installation and repair of equipment, furniture, apartments and summer houses, for some time many now legalized employees of hairdressing salons and other service sector firms fell into this category;
5. "Legalized" - those who were instructed to go to work: police and other law enforcement agencies, government officials, people employed in the official mass media, volunteers, people engaged in essential services sector (medicine, including pharmaceuticals, trade, delivery of goods, utility providers, builders, workers from continuous and extractive industries, agriculture, communications operators, transport workers).

Thus, public sector employees and other workers in the state-owned enterprises were least affected, while those working in small and medium businesses were most affected.

The social settings of each category differ significantly. For example, the welfare, lifestyle and way of life of the first, fifth and, partly, third groups remained substantially the same. The social shift in the lifestyle of these categories is only manifested in less frequent visits to cultural institutions, communications offices, government agencies, polling stations, even polyclinics and hospitals, as well as in their more frequent resettlement for a definite time to their summer houses, to reunite with their relatives in small and medium-sized towns and villages. The second category was strongly affected; while the fourth category was ambivalently affected by the COVID-19 crisis.

At the same time, in real life, many of the above categories intermingle in the families where one family member belongs to one category and the other to another. This partially dampens living conditions, counterbalancing the negative implications of isolation.

As a result, there are families that have socially benefited from isolation - mainly those who have received additional orders at the expense of those who lost their jobs, and help from the state - especially when such 'bonuses' were provided to several family members.

Certainly, there are families that have been completely deprived - those where social opportunities have narrowed for all family members (including single-parent households), who sometimes are forced to join the ranks of poor and even extremely poor (i.e. living at the official subsistence level and below).

Long-term isolation has rather acute implications for the elderly people, as hypokinesia can make their condition worse. Hypokinesia is known to cause sarcopenia and osteoporosis, which in turn can adversely affect the health of population, especially in older age groups, and increase the burden on medical organizations. In addition, the reorientation of medical organizations to provide care to patients with COVID-19 has led to the suspension of routine medical interventions, which increases the likelihood of chronic diseases aggravation and may lead to further undermining of the community health and higher mortality.

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## ANALYSIS INTO THE SPECIFICS OF MEDIA WARS ON SOCIAL MEDIA IN THE CONTEXT OF COMMUNICATIVE PARADIGM OF MODERN SCIENCE

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**Abstract:** This paper analyzes the specifics of a newly emerged phenomenon in socio-cultural reality, i.e. the media wars. The purpose of this paper is to explore the attributes of media wars over social media and their effect on the mind and behavior of a modern man. It is noted that the possibilities of communicative paradigm help to reveal the essential attributes of this phenomenon such as: growing popularity of social media for a modern man, expanded web of possibilities for conducting media wars, emergence of new tools of war in cyberspace for the minds of masses. The conclusion is made that virtualization of socio-cultural space pushes peoples to perceive social reality through mass media and leads to domination of clip thinking.

**Keywords:** media wars, mass consciousness, cyberspace, social media language, communicative paradigm.

### 1 Introduction

The modern socio-humanitarian sciences are increasingly using the methodological possibilities of communicative paradigm. In our opinion, the approach to analyzing the phenomenon of media wars through the lens of communicative paradigm appears to be rather effective. Its effectiveness is high due to two reasons: first, communication has semiotic nature, and second, communicative paradigm makes it possible to extend the scientific analysis to practical aspects of social life (Mogilevskaya, 2015).

Communicative paradigm facilitates exploration of such phenomena as online communication, marketization of different types of communication, online communication on various information platforms, widening of a range of possibilities to manipulate minds by capturing the larger audience over the Internet. First of all, this becomes possible as the most active portion of population represented by the youth, are moving to the Internet space, leaving behind the information published in print media, and broadcasted on radio and TV (New generation of Internet users: Research into habits and behaviors of Russian youth online, 2017).

In the context of communicative paradigm, we would like to point out that the modern youth choose Internet not simply as a source of information, but as a place for communication, as a form of self-identification and self-cognition.

The relevance of this research is high as it is evident that the cyberspace is becoming the theater of war, the arena where the major struggle for the minds of youth is unfolding, whose position is critical for the country's future. As our study focuses not on media wars as such but on their waging on social media, we find it necessary to distinguish between the online social media and the social network, or the actor network. This concept receives close attention in the modern sociology.

### 2 Literature Review

The theoretical analysis in this research is founded on a phenomenological tradition gaining popularity in the applied research, which was first introduced by E. Husserl (2005). He was the one who directed the scientific analysis towards the phenomena of the world cognized by human through experience. Further, we relied on the works of P. Berger and T. Luckmann (1995) dealing with the social constructivism; it was them who proved the thesis on the construction of human perceptions of social reality. Moreover, P. Berger can be called an excellent empiricist, as he validates his conclusions related to the social phenomena based on solid evidence, which provided us a strong methodological basis for examining the phenomenon of media-

warfare. Also, P. Berger and T. Luckmann (1995) apply the techniques of cultural events typification, which in our study helped us to identify some features common to all media wars and the techniques for manipulating consciousness, perception and assessment of events by the virtual audience.

The basis of the communicative paradigm is found in the concepts of K. Apel (2001) and J. Habermas (2000) and their followers. The sphere of practical reason attracts K. Apel (2001), who believes that philosophy should engage in the study of transcendental pragmatics. The communicative community is the field of his scholarly interests. In his critique of scientism, the philosopher sees the main goal of mediating existing rationalities by the communicative rationality, which explains well various kinds of diverse information existing today in the media space and widely used in the media wars.

Thus, Russian researcher A.V. Nazarchuk (2003) exploring the works of K. Apel (1997) writes that the scientist provides an adequate description of an ideal communicative community. These scholarly expectations give a better understanding of the possibilities of infinite interpretation of any event or phenomenon in social media and to understand the power of social attitudes. Modern authors driven by the ideas of phenomenology see the main goal of philosophy in the search for intersubjectivity of social life, and thus their views may also prove useful for exploring the diversity of both the informational content and the warfare techniques employed in media wars.

J. Habermas (2000) looks into the possibilities of communicative practices and how they may alter the public opinion and human behavior. The understanding of social reality as an integrative force that unites society leads him to creating a four-volume analysis into development of the communicative paradigm. Drawing on the principles of the phenomenological tradition, he concludes that communication forms a huge part of our social world. The sociologist believes that it incorporates the phenomena of individual action and collective consciousness. Our study rests upon the theory of communicative rationalization providing us an explication of the technological part of justification of media wars, and the theory of social action, as such are the actions and interactions in media confrontations.

I. P. Berdnikov (2003) in his study thoroughly analyzes and uses the concept of a communicative structure as the space for human life, reflecting on it through the paradigmatic and socio-cultural foundations, he concludes that communicability is relevant to the further progression of social life and reveals the correlation of interdependencies between human life space and communicative structures. L. Wittgenstein (2009) of language games is considered a great contribution to understanding of the specifics of media wars. The scientist addresses the question of both internal and external boundaries of language; they appear to be open in relation to external objects and may be subject to considerable change. Thus, for examining the specifics of media wars in social networks within the communicative paradigm we relied on the theory of communicative rationality by K. Apel (1997), the theory of language games by L. Wittgenstein (2009) and the concept of communicative rationality by J. Habermas (2000), and the quintessence of the above theories helped us to reveal the key features of media wars.

### 3 Research Methodological Framework

The purpose of this paper is to examine the specifics of media wars and to validate the idea that social media are becoming an arena for media wars. The object of the research is the phenomenon of media wars, and the subject of the research is the effect of media wars on population.

The hypothesis of the research is as follows: the specifics of modern media wars lie in that such wars prove highly effective in creating communicative space for different audiences,

alternately making people either subjects or objects of influence, where different techniques of language games find their use.

The research objectives were as follows:

1. Demonstrate within the limits of the communicative paradigm, that media wars in social media have obtained new attributes and their role has grown beyond purely entertaining and communicative to political;
2. Expand on the idea that media wars on social media go hand in hand with the processes of mass consciousness manipulation.

The methodology of the research is aimed at achieving this goal, which becomes possible with the use of theoretical and methodological tools of culturology, philosophy and semiotics (Berdnikov, 2003). The study of the phenomenon of media wars hinges, first of all, on the possibilities of the communicative paradigm, based on which it can be demonstrated that everyday instrumental communication is the major factor in the accumulation of social capital of all forms (Nazarchuk, 1993).

The authors pay much attention to the usefulness of the phenomenological approach in analyzing the specifics of media wars on social media (Smirnova, 2009). Also, the research is based on semiotic approach, as virtual reality can be interpreted as a system of signs used to create semantic and perceptual spaces. The study makes use of the theory of social rationalization to demonstrate the consequences of the emergence of automatic profiles (social bots).

The method of theoretical analysis made it possible to identify the specifics of the communicative paradigm, the inherent attributes of media wars and the behavior of social media audience (Kotlyarova et al., 2017).

The method of historicism helped to look at the object of research in retrospect for understanding characteristics of the processes causing emergence of social networks. In practice, this method was applied, for example, to find out and compare the levels of victimization among the population (Pocheptsov, 2012).

The comparative method makes it possible to understand, through the comparative analysis, how the functions of social media change against the backdrop of raging media wars (Shvachkina & Rodionova, 2018).

Of particular importance for this research is the extensive theoretical and methodological base of philosophical and cultural reflections. The sociocultural approach also constitutes an important methodological basis for analyzing the processes of mass consciousness exposed to the influence of mass media, and therefore represents a battlefield for information wars.

#### 4 Results

Social media becomes a promising battleground for media wars; according to a Google study, 65% of Russians having access to Internet spend their time on social media, while the percentage of teenagers is as high as 98% (New generation of Internet users: Research into habits and behaviors of Russian youth online, 2017). For this reason, the authors pay close attention to social media and specific features of media wars conduction there, as social media offer many benefits for various kinds of media attacks in interstate conflicts, political controversies, interreligious and interethnic struggles. First, it is important to define the term "media war", which is relatively new, and yet has no sufficiently precise and clear definition. This term is used mainly by journalists, and in philosophical, sociological, and culturological reflections its use is intuitive. Thus, there exists a broad interpretation of media wars by M. C. Libicki (2003) according to whom this concept covers the disruption of communication between a command center and subordinates, the destruction of electronic infrastructure, propaganda, and information sabotage. This broad interpretation of media wars essentially shifts the focus from the field of information to all

forms of warfare, including firefight. We have the views similar to those expressed by G. Pocheptsov (2012), who divides information wars into technology wars and humanitarian wars, and if the former concern the technology, the latter concern people. Therefore, media wars, in our view, should be referred to the second group of information wars.

Contemporary studies indicate that social networks, which date back to the 1990s, have enormous potential for media wars. Although initially they held no appeal for the ideologists and fighters of information wars due to the limited services, and the prototypes of social networks such as eGroups/OneList, ICQ, Evite, which provided certain opportunities for communication, were not interesting as an arena for media wars. It wasn't until the early 2000s that some projects emerged that conquered the whole world, such as LinkedIn, MySpace, and FaceBook. Only such giants could be compelling for media wars, because these platforms had a large number of people ready to perceive any information. Researchers believe that crucial for perception in social media are three dimensions, namely social interaction (structural), trust (relational), and common language and vision (cognitive) (Warren et al., 2015; Quinn, 2016).

The analysis in modern science may result in the conclusion that social networks have become an excellent ground for manipulating consciousness, since they have gained popularity, primarily among young users with their count reaching millions around the world. Their great value for media wars may be explained by the lack of strict control from the state, their branched structure and the absence of a single center, which made social networks an ideal arena for information warfare, as the goal of media wars is to penetrate the alien information space and reshape it according to own standards (Hofmann, 2005). This is what feeds the desire of states that are in confrontation to create "information troops" that will use social media to reformat mass consciousness. The United States has embarked on such a project, concerned about combating Russian propaganda on Odnoklassniki and VKontakte, as well as on Russian Facebook and Twitter (Spiridonov, 2008).

It will not be fair to say that the media warfare techniques originally differed from any other forms of manipulation of consciousness. Thus, hiding or concealing information is a rather classic method, however, the use of this method on social media becomes extremely difficult, as the distinctive characteristic of social media is their openness, and much complication is caused by the vast possibilities of searching for information, leaving comments, including links to other websites. Undoubtedly, the efforts of moderators, who block or delete dangerous content, could have been effective, but those users who already read and reposted such content, bring all their efforts to naught. A more effective method is information diffusion in a plentitude of insignificant messages, which make it extremely difficult to sift the wheat from the chaff. While the valid and useful information remains out of users' attention. Still, in social media the initiators may not only find this information, but also spread it quickly. Contamination or blurring of concepts is an important tool in media wars, and one and the same phenomenon may in the twinkling of an eye acquire multiple different connotations.

#### 5 Discussion

Due to the fairly recent emergence of the phenomenon of media wars on social media and the recent surge of interest in this topic, we would like to indicate the semantic scope of our study: since there is no sufficiently elaborated methodological basis and conceptual approaches to the concept of media wars in social media, here we present our own vision of it.

The limits of the analysis into the specified problem are related to the uneven spread of the Internet across the globe, so it becomes difficult to produce reflections and identify the universal characteristics of media wars in social media.

A thorough analysis of the informational "new language" of media wars is the challenge of further study. The advantages of the communicative paradigm are helpful in tracing the language

metamorphosis occurring in the virtual communicative space today. Finally, since social media have long been seen as alien to propaganda institutions, our task is to show that social media are no less convenient place for manipulating the consciousness of the masses.

The functioning of social media in cyberspace, being a complex systemic phenomenon featuring self-replicating social and technological systems, represents a highly intriguing problem for scientific analysis. The basic function of social media is communicative, but to this day they have not been recognized as mass media.

As we have already noted, media wars are gaining traction, expanding their battlefield through the virtual space. Media wars are targeting the mass and individual consciousness, and therefore their effectiveness is largely determined by the public susceptibility to the information that is broadcasted by mass media. Social media becomes the most effective means of information dissemination, so media wars unavoidably move into cyberspace (Rudenko & Mogilevskaya, 2017).

Ideologists of media wars could not but appreciate the effectiveness of social media, which are multifunctional and universal (by which we mean the web networks' capacity to be a mass media, a mail, a source of rumors, and a generator of public opinion) (Rudenko & Kotlyarova, 2017).

As a means of communication, social media have a number of advantages over mass media, becoming an effective mechanism of political propaganda. These advantages include their interactivity, because while all mass media, both print and electronic, imply monologue and mentorship, social media require actions and involvement of a person. They make the person a participant in the discussion of certain events. It is difficult to keep silent and to remain a bystander on the web, it urges to express one's attitude to the news or discussion, providing all possible opportunities for this in the form of reposts, likes, clicks. The ease and cumbersomeness of actions prompts the user to join the discussion, and creates the phantom feeling of complicity (Mogilevskaya, 2015).

Media war actors take into account the effectiveness and potential of social media in propaganda. It would seem that the very nature of the Internet with its immense possibilities to verify any information contradicts the idea of manipulation, however, only a few resorts to its manipulation force, those for whom social media are only a means of receiving and exchanging information, rather than a space for expressing feelings and emotions. This is what makes the majority of the inhabitants of social media the main target of manipulation and recruits of propaganda campaigns. After all, the interactive nature of the web is to mobilize a response from the participants in a multi-voiced dialogue, and this resonance should be emotional and impulsive (Shvachkina et al., 2017). Propaganda in social media is most often presented in a lexical and semantic field, stirring the psyche, provoking a strong reaction, urging to write comments and to give likes. Readiness for a single impulse is often expressed in a simple but uniform action, say, painting one's profile picture in the red, blue, and white colors of the French flag.

The effectiveness of propaganda in social media largely depends on their capacity to create an illusion of active position, in fact, without any real action taken. At the same time it gives the feeling of unity with like-minded people, whose names no one will ever know.

Social media as a ground for media wars are also effective in that the opponent is not distant from you, neither in time nor in space. Virtual opponents share the same territory of social media, and this proximity heats up the confrontation. The lack of spatial and temporal boundaries is also exacerbated by the atmosphere of total impunity and anonymity, which simply provokes to humiliate and insult the opponent (Kwon et al., 2021). Also, scholars believe that social media have a varying effect on civic participation depending on the level of an

individual social capital, rather than having the same effect on civic participation (Choi & Shin, 2017).

Social media users tend to create communities of like-minded people, which, on the one hand, act as forces of support and, on the other hand, are extremely demanding as concerns meeting the requirements of this limited community, which is expressed in the support of campaigns of this community (Illarionov, 2017).

Despite the declared independence, users of social media are easily controlled, as they are dependent on the opinion of their contact group, and therefore such an insignificant thing as no "likes" can frighten people and make them submissive, as they may perceive it as an act of neglect or even punishment. Actors of media wars take into account this attribute of social media - its power to instill social fears of something, such as the loss of this phantom environment of allies, and unwittingly a person loses the ability to think independently, to express a standpoint without looking at others (Rodionova et al., 2019). This is what the social media user gives up for the possibility of bullying his enemies, i.e. other people. Those people have a different opinion or simply express doubts about the views advocated by the community.

Since the phenomenon of media wars is, according to scholars and journalists, as new as social media themselves, the interaction between them has become known relatively recently, because social media on the Internet originally functioned and developed as a resource for entertainment (Buliann, 2015).

However, the inner working of social media makes them a suitable battlefield for media wars. Whereas mass media have a relatively limited audience and are associated with completely transparent or at least known sources of information, the branched structure of social media, the lack of a single center, the predominance of feeble connections, anonymity, and most importantly unification based on interests rather than social characteristics, make social media an ideal tool of media wars.

Social media not only serve as a platform for propaganda campaigns, but also become a method to organize people during the media war. These are "quiet" wars that do not require universal soldiers, because the "fighters" of media wars on the Internet are often non-aggressive, humble users of social media. For example, a new term "slaktivist" has been coined relatively recently, it refers to people who actively discuss and actively spread propagandistic information of various kinds. These people are neither ideologues nor driving forces in the media war, but they create the necessary information effect, an information echo that increases the importance of propaganda campaigns (Kuznetsov, 2015). One may agree or disagree with M. Gladwell (2002), who is skeptical about the ability of social media to cause profound changes, but these are social media, due to their decentralized nature and lack of an organized single leadership, that create a new propaganda model that exposes hidden dissent. In online media wars, these are the slacktivists who control the flow of information and amplify it (Gladwell, 2002). In the absence of an explicit core, online media can form a protest center which anonymity allows for a relatively safe planning of agitation, rumor spreading, public opinion creation, and recruitment of supporters. And this is the main advantage of conducting media wars over social media - the scale of coverage, the branched structure, the absence of explicit leaders creates an illusion of independent thinking and the independence of conclusions. If we are talking about the basic rules of propaganda over social media, they are not much different from the rules of propaganda in other mass media.

According to N. Davis (2005), these rules include, first of all, the principle of simplification, which consists in the fact that the world may be represented binary, antagonistically. Any complication, the slightest disagreement is interpreted as apostasy and betrayal. Only by dividing the world, events, and people according to the principle of "us and them" or "right and wrong" it becomes possible to emotionally excite people and create an atmosphere of intolerance. And although this technique



is not new, it works effectively over online media, since, due to interactivity, social media allow for an instantaneous, immediate response against dissenters. Directly related to the principle of simplification is the principle of distortion, according to which anyone who thinks otherwise should be humiliated and ridiculed (Davis, 2005). Crucial for propaganda is to present its own goals as predominant and consistent with the interests of audience. Therefore accentuate the issues that are relevant to social media users. This protest platform allows to achieve unanimity, which N. Davis (2005) calls one of the obligatory principles of creating the propaganda content. Researchers also note that in media wars it is highly important to make an appealing presentation of certain goals and actions (Siegelstoinz, 2016).

The purpose of any media war is to reformat, recode the mass consciousness in order to inculcate new values, often contrary to those instilled in childhood, and to mobilize people to fight for the new values. Here the benefit of social media is their ability to quickly mobilize the masses for new movements (Mosca & Caranta, 2016). The success of media campaigns over social media has always been great, but it is not always possible to measure the level of protest sentiments through social media. For example, during the Twitter revolution in Iran, not more than ten percent of users created more than half of all tweets about protests and elections, and they were the ones who sparked multi-million protests. Therefore, the role of online services such as Twitter, Facebook and YouTube in media wars is, according to analysts, an important subject for research (Damier, 2012).

## 6 Conclusion

Thus, the communicative paradigm helps to understand that the reformatting of consciousness, the achievement of communicative goals of media wars, is impossible without changes in language, all new in culture is initially crystallized in language, and therefore the compromising of the opponent's values is possible only by discrediting the existing linguistic capital. Modern man, wandering in the vast expanse of the information field, in his communications tries to rely on authoritative figures or analytics, which can be radically tendentious, as it is itself a tool of media wars.

It should be noted that the virtualization of modern life deprives us of a possibility to perceive the world as an immediate reality, distorting our perception through the communication channels of mass media, depriving us of a possibility to build an integral picture of the world, replacing it with biased, clipped images, which makes it easy to manipulate consciousness, without which media wars would not exist, because the goal of any information warfare is creation of a project, whether political, ideological or commercial, for which some kind of mythology should be fabricated. The next is to create a certain cyberspace, where a very great amount of information circulates, and where the boundary between the real and the virtual is blurred, which becomes an arena of media warfare.

Further, it should be noted that in the information war more and more often they resort to the technique of disseminating information based on concepts that lack any specific content, based on archetypes, filled with content of a very arbitrary nature. Thus, a notion of "spiritual bonds", which has become rather popular recently, may carry any meaning, and is perceived only on an intuitive level.

Finally, to wrap up, media wars make an extensive use of "new language" helping to open new Overton windows, simply by giving a different connotation to common expressions, replacing the frightening and scary with something that is ordinary and posing no threat. Audiences, brought up in the traditional lexical field, do not always grasp the meaning of familiar words or phrases. That is how media wars create the language of propaganda, which is essentially the language of domination.

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## MODERN LANGUAGE EDUCATION POLICY AND POLY CULTURAL SCHOOL AS ITS SUBJECT

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**Abstract:** This paper discusses issues related to the basic concepts of the modern language education policy in Russia, as well as the status of the polycultural school as its subject. The authors point out the very clear correlational relationship of this policy with the school educational policy and with the national language policy implemented at a particular historical stage of its development and the socio-political problems facing the society. At the same time, it is argued that the ongoing political, economic and technological transformations in the geopolitical and geo-economic space lead to the emergence of new constituents in the language education policy, which include, in particular, the polycultural school.

**Keywords:** language educational policy, polycultural school, basic competences of a school student, development of student's personality, foreign language, multilingualism, polyculturalism.

### 1 Introduction

Against the backdrop of globalization and internationalization, it is important to create an environment with socio-economic, regulatory, logistical and organizational and pedagogical conditions conducive to the development of abilities and competencies of all subjects of the linguo-educational process that would express:

- firstly, in their ability to project management, the ability to group and collective work, the ability to overcome conflictogenic factors arising in the course of socio-communicative interaction;
- secondly, in the extensive linguocultural background knowledge possessed by students, opening up for them the possibilities of intercultural interaction in a modern multi-ethnic and polycultural society;
- thirdly, in the orientation towards the development of student's personality, raising their status as a subject of the educational process and strengthening their motivation in learning a foreign language and foreign culture, as well as in the comprehension of own uniqueness and personal responsibility for the results of this process.

All this gives rise to the need for a detailed study of issues related to language education policy. For Russia, turning to this topic has a particular importance, because "a huge role in fostering the spiritual unity of the multinational, multiconfessional people of Russia belongs to the language educational policy implemented by the state" (Baldanmaksarova, 2018, p. 68).

It is rather interesting to explore how multicultural education is implemented in schools, because it is at this level of education that the foundations for raising the future competitive personnel are laid. According to the Federal State Standard for Basic General Education (2010), it is required to develop and improve the foreign language communicative competence of students, i.e. students should be capable to interact in a foreign language in our polycultural world. This should be reflected not only in the language education policy, but also implemented in practice in Russian schools, which makes it imperative to update the content of school education.

### 2 Literature Review

Multilingualism is a global challenge for educational policies in many countries (Conceição, 2020; Lundberg, 2018). Since the linguo-educational policy is a component of general education policy and language education policy in general, its goals, principles, and content reflect the socio-cultural features specific to the system of education along with the specificity of the "foreign language" as an object of teaching and learning in different learning contexts which is stemming from the scientific

factors. From this point of view, linguo-educational policy has the same orientation as education policy as a whole, in particular: focus on the problems of polycultural and multilingual community requiring from its subjects a strong ability to communicate with representatives of other national and cultural societies, as well as support for multilingualism and polyculturalism in the educational space. This, in turn, adds relevance to the need of addressing the linguo-educational challenges within the anthropocentric paradigm and the intercultural, competency-based, and axiological approaches to teaching foreign languages and other cultures which are developed within this paradigm.

Russian and foreign researchers note the importance of foreign language knowledge by different subjects of the educational process, including college students (Cáceres, 2020), college teachers (Chigisheva et al., 2016); school students (Belova & Lebedeva, 2016), school teachers (Čančar, 2016). There is a growing need to develop methods for school students to capture the emotional-value component of the content of foreign-language education, which contributes to the absorption of the cultural heritage of humanity by students (Tatarinova et al., 2021). A special role in the conditions of polyculturalism is given to school educative activities aimed at fostering the national identity and readiness for assimilation (Baronenko et al., 2019). As migration flows increase, the need for polycultural schools increases (Zinovieva, 2020; Hernández-Bravo et al., 2017). Teaching in polycultural schools promotes the integration of migrants as well as students' familiarization with different cultural traditions. The use of new approaches and digital tools for foreign language teaching is one of the ways to modernize university (Soltovets et al., 2019) and school education (Orehkova, 2016), which is also reflected in the current language education policies.

The educational policy with regard to foreign languages represents a combination of scientifically substantiated and practice-proven measures designed to create favorable conditions in the country for different categories of students to learn a wide range of languages and cultures in order to meet public and personal needs in learning these languages and cultures and better understand their original linguoculture (Galskova, 1999). Such measures include the development of an appropriate legal framework raising the status of a foreign language in society as a means of interpersonal and intercultural communication and as an educational discipline in the system of education, as well as the right of everyone to choose the language of study and the language to be studied as a tool to navigate in a modern multi-ethnic and polycultural society, successfully perform intercultural interaction with representatives of other linguoethnic cultures, to extract and construct the new knowledge.

It is worth noting that educational policy with regard to a foreign language or linguo-educational policy is interconnected and has a certain relationship with the national language policy, educational policy and language education policy, implemented by the state at a certain stage in its historical development.

This interrelation and interdependence are stemming from their common aim to develop and support mutual understanding between representatives of different linguo-ethno-cultures and to establish peace and understanding between peoples.

The rise of English language as a "global language" (Nunan, 2003, p. 589) or a new "world's lingua franca" (Meisani et al., 2020, p. 1158) has contributed to new transformations in the linguo-educational and educational policies of different countries. Therefore, the problems of linguo-educational policy have not only a pedagogical tone, i.e. the focus on achieving the high-quality language training, but also a deep political meaning associated with the implementation of a modern and promising philosophical concept of human existence – supporting and stimulating linguistic and cultural diversity of the world as a

factor of mutual enrichment and understanding between countries and peoples and non-violent resolution of possible interethnic and interfaith conflicts, as well as conflicts that may result from the suppression or unreasonable exaggeration of the role of certain languages in society.

### 3 Research Methodological Framework

This paper has the purpose to review the main strategies of language education policy in Russia drawing on the new priorities in values and meaning of modern education, which lead to changes in the modern school with the key priority of creating innovative environment conducive to the development of the student's personality. The following tasks were stated and solved within this paper:

1. define the content, results and parameters of the national linguo-educational policy at the present stage of social development;
2. identify key competences in the system of school language education (on the example of Russia);
3. overview the transformations in the main components of the communicative space of the Russian school in the modern sociocultural context.

This research employed the following theoretical methods: analysis, synthesis, generalization, linguocultural and pedagogical interpretation of events, phenomena and processes characterizing the modern national language education policy.

### 4 Results and Discussion

History shows that successful implementation of linguo-educational policy is possible if it is recognized by the state as one of the main priorities of state educational policy, turning person's knowledge of a foreign language into an integral element of their culture, making them mobile and free in the modern linguo-ethno-socio-cultural communication space. This, in turn, necessitates the creation of regulatory, financial, economic, logistical, organizational, managerial, and methodological prerequisites that would guarantee each learner a certain level of foreign language and foreign culture proficiency as a means of mediated and direct intercultural communication and thereby contribute to their intelligence and the development of certain personal and social qualities and competencies.

Hence, it is obvious that the content of linguo-educational policy relying on humanistic ideas and personality-oriented and activity-based education, should be a scientifically based, conscious and purposeful impact of the state and society on the system of knowledge acquisition by different categories of foreign language learners in order to support, successfully use and develop it in a multilingual and polycultural context.

Consequently, the linguo-educational policy with its pronounced personal and socio-cognitive components is designed to transform linguo-education into a mechanism of cultural development, formation of the learner's worldview through cognition of their own and foreign reality and based on their comprehension of own universal being in the context of plurilingual and pluricultural processes in modern society development. Based on the above, it may be asserted that the main value and, at the same time, the main result of the educational policy in the field of foreign languages is a personality of language learner - a personality who, so to speak, takes root in their own culture, understands it, speaks native language, but this does not become an obstacle to learning another language and understanding another culture. It becomes possible if educational policy decisions in the field of language education create conditions for developing the communicative and cognitive abilities and personal characteristics of students, facilitating absorption of knowledge about culture of the native speakers of the studied language, culture of own country, own region of residence, for boosting their cognitive activity and developing their sociocultural sensitivity.

The foregoing gives grounds to identify the important parameters of linguo-educational policy at the modern stage of social development, in particular:

1. focus on overcoming national culture-centrism and expanding opportunities for intercultural communication and fostering the language learner's ability to intercultural communication and interaction;
2. polycultural and personal orientation;
3. continuity and variability;
4. innovation and perspective, based on the best national and foreign traditions in the field of acquainting people with a foreign language and culture;
5. openness to European and global trends while preserving and developing national uniqueness and identity;
6. facilitating creation of a unified language education space in the country while preserving the uniqueness of regional models of teaching foreign languages.

It is well known that educational policy concerning foreign languages is largely determined by the ideology and policy of the state, its economic and technological demands and opportunities. Significant factors determining the specificity of the purpose and content of linguo-educational policy are also the traditions and rituals of social consciousness and the framework of value-meaning priorities established in education. Thus, the determinants of current linguo-educational decisions and activities are the interdependent and often contradictory processes which put the new challenges before the system of linguo-education requiring certain changes first of all at the level of goal-setting in the field of foreign language teaching. Thus, for example, neo-globalization with its often heightened conflictogenicity of communicative processes, ideological, political, economic attitudes and positions orient this system and language education policy in general to strengthening the students' ability to cooperate and such personal qualities as: mutual responsibility, high social activity and competence in the implementation of social humanistically oriented interactions, overcoming of socio-humanitarian and cultural-linguistic obstacles that discriminate against the intercultural laws of human existence, sprinkled with ideas of mutual understanding and interaction. In turn, regionalization or glocalization predetermines as an important value of educational policy in the field of foreign languages the ability of a modern person to national-cultural self-determination. There is another extremely important process which determines the specific orientation of linguo-educational policy. This is the digitalization of social practices as a new evolutionary stage in the development of information society and education as its important social segment. Digitalization has compelled linguistic education to develop at its own cost the ability of foreign language learners to technological innovation and the ability to adapt to the challenges of technologized reality, to be "tuned with the future".

The above processes may be closely tied to such categories of the modern linguo-educational policy as:

1. lifelong language learning and learning "with the help of language";
2. personalization of linguo-education, which means, as is known, comprehension by an individual of own social significance, responsibility for own life path, as well as individuality and high importance of the ability to convey own individuality to others;
3. language education eco-environment intended not only to enable effective and health-saving learning for all subjects of educational process, but also to promote the preservation and development of multilingual and polycultural educational landscape in the region, the country, and the world.

Thus, modern linguo-educational policy has a distinct personality-value component, transforming language education, as noted above, into an instrument of cultural development and shaping the students' worldview through gaining the knowledge of foreign linguo-culture and, at the same time, realizing their

own universal being in the context of regional, all-Russian, European and global development processes of society and civilization.

The personal-value orientation of linguo-educational policy makes the use of educational technologies inevitable, with not only sociocultural and intercultural, but also axiological and self-educational dominants becoming highly pronounced, thus helping students to join the new framework of educational values and to master it. This framework primarily includes such parameters as: initiative, creativity, independence (autonomy), ability to think critically, focus on acquiring new competences, etc. The development of these qualities together with the skills and abilities to implement social changes in a non-intrusive way is the main conceptual content of the modern school language education policy and, consequently, of the foreign language policy. At the same time, it is important to create an educational model for schools which will be aimed at shaping school students' key competencies, as required by the FSES (2010), enabling them to gain social experience, skills for life and practical activities in the polycultural and multilingual world around them. Hence, it is the accentuation of competence positions which allows to reveal more precisely the strategic (general education) orientation of school language education in general and linguistic education in particular (see Table 1).

Table 1 Key competences in the system of school language education

Seq. N	Competence	Target
1.	Value-meaning	Developing the students' ability to perceive and understand the surrounding multilingual and polycultural world, navigate within it, realize own purpose, along with the place and role of native and other languages in society and educational space, use languages as the means of communication, cognition, self-fulfillment and social adaptation
2.	General culture	Students gaining knowledge of the heritage of native and transcendental culture, facts from the culture of the studied language country, spiritual-moral foundations in the life of human and humanity, while inculcating the values of Russian, national and global cultures
3.	Learning-cognitive	Developing the ability to independent creative cognitive activity, inter alia, in the studied language(s), to critical, reflexive, creative thinking, acquiring the experience of goal setting, planning, analysis, reflection and self-assessment.
4.	Informational	Developing the ability to search, comprehend, analyze and pick the relevant information, inter alia, in the studied foreign language, to use the modern digital technologies for learning, project and research in the studied language.
5.	Communicative	Students learning native and non-native languages, including foreign language, the ways of group, interpersonal and intercultural communication and interaction with the people around, including the natives of studied languages and other cultures.
6.	Social-labour	Students getting understanding of various social roles when faced with different communicative tasks compelling them to take on certain social role, decide on an adequate strategy and communication means with account of the culture and status of a partner, observance of speech etiquette and use of discursive ways to make the utterances
7.	Personal improvement	Learning the methods of physical, spiritual and intellectual self-development and self-determination, including the cultural Identity, self-fulfillment and self-validation, having cognitive and communicative skills developed, along with the culture of thinking and behavior.

Source: the authors

When dealing with such a complicated task as developing the key competences of students, a huge role belongs to school, which is an important social institution implementing in practice the main provisions of the language education policy in general and the foreign language policy in particular.

The modern school, just the same as society, has become multi-ethnic, polycultural and multilingual in the composition of students and quite often in the composition of managerial and teaching staff. According to A.A. Levitskaya (2012), it is a reflection of the Russian reality, the ethno-social, ethno-political structure of Russian society with a strategic focus on building a

single civil nation. For example, the representation of such nationalities as Uzbeks, Tajiks, Moldovans, Armenians and Azerbaijanis has increased in Moscow region schools up to five times over the past 10-12 years. Consequently, in today's socio-cultural context, the main components (language, ethnic, social and cultural components) of the communicative space of a modern school have also changed. Under these conditions:

- subjects of the educational process are facing the need to communicate with bearers of different cultures and languages;
- Russian language, being the only tool to reconcile the polycultural and multilingual diversity of school, acts as the language of communication in the environment of other cultures, which previously have not been the material basis of communication for it;
- native languages of migrant children are limited to the narrow frameworks of their ethnicity and their culture, which are either ignored in the educational process or even excluded from it, which does not contribute to the process of "consolidation of ethnic diversity" (Prokhorov, 2017);
- studied foreign language, when isolated from the original culture and original communicative models, is used (often to a limited extent) as a means of educational communication only at the lessons of the studied language and does not take into account the original polyculturalism and multilingualism of the educational environment.

That is why school linguo-educational policy today and tomorrow will have to focus not only on achieving subject-specific results expressed in a certain level of students' language and speech skills and abilities (even if they are *socially oriented* and integrated into *the real context* of their life activities), but on achieving personal educational results, as expressed in school graduates acquiring key competencies.

Thus, almost all political decisions and actions taken in the field of language education should be aimed at implementing the strategic goal consisting in creating the conditions conducive for the development of the student's personality in four important interrelated aspects: values, self-identification, competences and personal socially significant qualities (Fig. 1).

Figure 1 Main Aspects of Student's Personality Development



Source: the authors

If the first aspect concerns value meanings, which are understood as humanistic values, personal motives, personal perspectives and value attitudes, the second aspect concerns the learner's ability to civil, ethnic and universal self-identification. "Competences" aspect represents a certain combination of competencies relatable to a person of interpersonal and intercultural communication, cognition, including through the use of a foreign language, as well as the ability to work with information in a foreign language, self-knowledge and improvement of personal competences. As for the other two aspects of the student's personality development, they are related to their socially significant and personal qualities, which were generally discussed above (creativity, openness, communication, responsibility, mobility, critical thinking, ability to represent own country in situations of intercultural communication with dignity, initiative, etc.).

## 5 Conclusion

Thus, the strategic goal of linguo-education is related to the ability of both students and teachers to learn non-native languages and understand other cultures as the only available vehicle for transforming the linguo-ethno-sociocultural

"polychromatism" and diversity of modern multicultural school into an instrument of intercultural understanding and interaction. This goal is fully consistent with the main provisions of modern linguo-educational policy as were discussed above.

In the context of this goal, the strategic orientation of the polycultural school as an important constituent of linguo-educational policy should be as follows:

- to build awareness among the subjects of the educational process of high importance and necessity to know their native language and culture, their belonging to a certain ethnicity and linguistic multicultural community, preservation of ethnic identity of each of them and a sense of ethno-psychological, not only political belonging to the interethnic unity of the modern society;
- to study and master the languages and traditions of European and global cultures and global civilization, to develop a multilingual and multicultural linguistic personality, primarily through the study and knowledge of languages enabling international communication and the cultures of their native speakers.

In other words, each participant of the linguo-educational process should understand, realize and accept that the surrounding world is multidimensional and multicolored, and in this world, which is a plurilingual and plurilanguage macrocosm, having different linguistic-ethno-sociocultural shades, he/she is only a separate microcosm for more global processes and phenomena. At the same time, the more non-native languages, including foreign languages, are represented in the linguistic "palette" of the school, the richer the opportunities it has to implement the main provisions of the educational policy regarding foreign languages, which, ultimately, will enable a modern school graduate to boldly "step into" the controversial future world.

Modern linguo-educational policy emphasizes the special socio-political cost-effectiveness of axiological and intercultural ideas and their appeal to a linguistic personality who has not only a multidimensional structure (abilities, competences, personal qualities, values and meanings), but also a multidimensional "cultural identity, namely national, regional, religious, social, other" (Shchepilova, 2017, p. 172). It is this circumstance that calls for a talk about language polycultural education as a philosophy of modern school life having no alternatives and polycultural school educational environment as a key success factor of education.

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#### Primary Paper Section: A

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## PUBLIC AND PRIVATE INVESTMENTS INTO PROMISING EDTECH PROJECTS

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**Abstract:** Based on the analytical review of the world market of EdTech startups, the paper is aimed at finding out the most relevant methodological and practical aspects of investment support of promising educational projects, with trends of the modern educational industry taken into account. Methodological framework of the research consists of the human capital theory, investment management concepts, and the methods of didactic heuristics and coaching. In this paper, attractive for investors sectors of Russian education have been identified; the relationship between development trends in Russian education and implemented ET projects has been established; the expedience of investing into new focus areas of further education based on personalized self-learning path technologies has been substantiated.

**Keywords:** EdTech startups, investment support, coaching toolkit, personalized self-learning path, quantitative indicators, effectiveness of ET projects.

### 1 Introduction

At present, public investments are redistributed from the sectors of information and communication, biotechnologies toward those of industrial technologies; meanwhile, however, investments into EdTech, or education technology, startups are growing rapidly: from USD 500 million back in 2010 up to USD 7 billion in 2019 (Darovskaya, 2021). Investments into ET startups create the basis for optimal choice of the most promising projects which are in line with the principal development trends both in the world educational space and the Russian educational industry.

According to experts, opportunities for growth will be biggest in such educational segments as further professional education and skills upgrade for specialists (Kuzmin, 2021). Practice shows that in the majority of projects in this sphere, it is not only new information and communication technologies that are essential for higher effectiveness of absorbing the information but also mentors, advisors, and teachers who form personalized self-learning paths jointly with their students. As a rule, building and fulfilling personalized self-learning paths have a number of similar traits to a coaching session and correspond to conditions, principles, and psychological and pedagogical practices of coaching. The dynamic growth of demand for such innovation projects renders it necessary to estimate the effectiveness of work for ET startups in this segment.

Analysis of investor preferences in choosing the ET startup effectiveness assessment methods shows that in spite of the diversity of techniques, none of them gives a one hundred percent result. With regard to this, the importance of measuring the educational effectiveness of ET projects rises. The system of criteria and indicators of the educational effectiveness of ET projects which is suggested in the research and has been tested out experimentally contributes to enhancing investment attractiveness of the innovation constituent of further education.

### 2 Literature Review

The present-day investment into EdTech startups is the process of providing development and launch of educational innovations with private, public, and corporate financial resources, uniting educational and information technologies.

A number of Russian and foreign researchers have discussed the range of problems of this process in detail. For example, basic principles of investing are thoroughly studied in the works of Z. Bodie, A. Basu, A. Kane, and A. Marcus (2018). Various

interpretations of investing into the domain of education are considered by the Russian economist V. Chekha (2010) who substantiates the necessity of making amendments to the law to ensure the legal framework for investment activity in various sectors of education. The works of T. Bondarenko and E. Isaeva (2015) deal with investment particularities of startups and describe the range of tools and mechanisms of stimulating innovation activity, as well as the algorithm of selecting ones, with startup stages taken into account. They also single out the main trends of venture capital investing in Russia. A more in-depth study of the modern EdTech startup market was conducted by Z. Chavkin (2020) who identified 5 groups of factors having an effect on the scalability of ET projects. According to the author, the found factors are interrelated with principal elements of the startup business model and serve as a basis for making more efficient managerial decisions. The problems of managing effectiveness and performance of companies regardless of their profile are extensively described by foreign researchers M. Armstrong and A. Baron (2012) who worded the basic statement of managing performance, its principles, and indicators of the effect it produces on the company's productivity.

Meanwhile, the problems of selecting the most promising projects remain relevant, both for private business investments, the state, and business accelerators. The world practice is such that the principal share of startups is financed by venture capital funds. In spite of the coronavirus pandemic, in 2020, the Russian venture capital market grew by almost 70% as compared to 2019 (from 11,6 billion rubles up to 21,9 billion rubles). Notably, public investment went down by nearly 40% (from 4,3 billion rubles to 3,1 billion rubles) (Plenin & Ivanova, 2020), and the share of Russian accelerators shrank, too. Another problem of enhancing the investment attractiveness of EdTech startups concerns the choice of optimal technique for estimating their effectiveness. The detailed analytical review of techniques actually applied can be compiled using the data of the Knowledge base of Venture Capital Accelerator (2021) and expert opinions of analysts of the EdTech startup market. Suggested by Eric Ries (2011), "the lean startup" technique helping investors measure the startup value and rate of return before making decisions about investing into development and implementation of the new ideas has won the worldwide renown. Russian researchers L. P. Mzarelua and A. Khalyapin (2020) have discussed and substantiated positive and negative aspects of investing into startups, as well as analyzed the opportunities of financial toolkit of investing into innovation projects.

Outlined in expert news releases by RBC, Google, Ipsos, and some other expert analytical companies (Kuzmin, 2021), the current development trends of the educational industry which shape the demand for EdTech startups allow not only establishing the relationship between needs of new educational services but also selecting promising EdTech projects in line with them. Alongside this, Russian researchers V. Buvina and I. Yershova (2021) identified the principal investment attractiveness factors and parameters of Russia's online education sphere. Within it, the teacher's functions are changed, and opportunities are opened up for using the new information and communication tools and smart systems in the educational process.

Anyway, searching for investments to satisfy the growing demand for the development of students' cognitive, communicative, and creative skills within further education programs remains the central problem. As M. Matyushkina (2019) believes, solving this problem implies analyzing the modern methodological approaches to estimating the effectiveness of EdTech startups.

### 3 Research Methodological Framework

The objective of the research is to find out current methodological and practical aspects of public and private

investment support of promising educational projects. The following tasks contribute to achievement of the set objective: conducting analytical review of the world EdTech startup market which allows identifying attractive for investors sectors of Russian education; based on making more precise the modern educational industry trends, identifying promising EdTech oriented to consumer interests; analyzing the range of problems associated with estimating the effectiveness of work of ET startups. The conceptual and theoretical framework of the research is made up by new aspects of the human capital theory, methodological approaches to investment management in the system of education, the methods of didactic heuristics (Khutorskoy, 2003), as well as the methodology of coaching developed by T. Gallwey, J. Whitmore, and M. Downey (Whitmore, 2005). As the input data, the authors used the results of marketing studies of the demand for EdTech startups in the world educational market (Chavkin, 2020). The following methods were selected as methodological toolkit of the research: the systemic approach to identifying the range of problems of public and private investments into promising educational projects; the interpretation methods of classifying and typologizing modern trends in the educational industry; expert and analytical methods enabling the authors to systemize the criteria and indicators for estimating the educational effectiveness of startups.

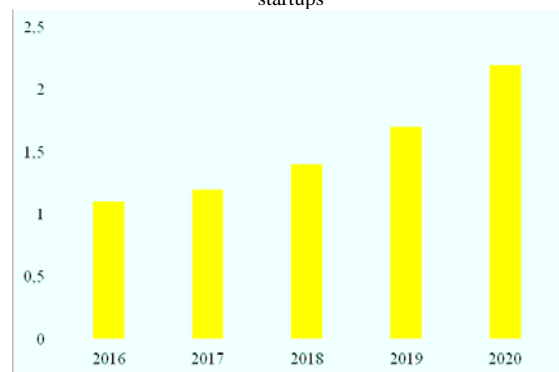
Information and analytical materials of the research incorporate the fundamental premises of monographs and scientific papers on the problems of modern education, investment attractiveness, and estimating the effectiveness of EdTech startups. They refer to the official data of the Federal State Statistics Service of the RF (2021), EdTechXGlobal expert news releases (2021), and knowledge base of the Venture Capital Accelerator (2021), too. The research materials also include results of experimental testing out of the authors' technique of the use of coaching technologies to build personalized self-learning paths in further education.

#### 4 Results

The world EdTech startup market started developing in 2012. As forecast by EdTechXGlobal, the world market of educational technologies will see the annual growth of 17% and will have reached USD 252 billion by 2020 (17-25% per year in the RF) (EdTechXGlobal Expert News Releases, 2021). It is expected to reach USD 404 billion by 2025 (EdTechXGlobal Expert News Releases, 2021). The COVID-19 pandemic only enhanced this trend: in 2020, the corona crisis brought over USD 8 billion venture capital investments into the world EdTech market. As for Russia, its volume of foreign investments into promising educational projects has shown a 300% increase (Rudich, 2021). Due to particularities of EdTech startups (innovation ideas; scalability; high investment risks) and their primary objective (to develop the unique technology for supply having no analogs in the world practice), the most widespread ways for them to get implemented are venture capital financing and private investments.

At present, the principal competitors in the EdTech (ET projects) market are China and the USA. Over the three years of 2015-2017, China invested USD 3,6 billion into these projects, the USA — USD 2,8 billion, and around USD 30 billion as soon as in 2020 (Soloviev, 2019). In China, the feature of venture capital financing (with its some 1000 VCIF controlling USD 750 billion) (Soloviev, 2019) is its subordination to public interests. Hence they have a high share of venture capital financing of ET projects. The leading focus areas are those of the school program and English language learning.

Figure 1 Investment capital raised by the American EdTech startups



Source: Wan (2021).

In the USA, startups in the domain of educational technologies raised venture and private capital for the total of over USD 2,2 billion as a result of 130 deals in 2020 (see Figure 1). This is almost 30% more than in 2019 (USD 1,7 billion). The coronavirus pandemic has boosted the demand for EdTech startups. In 2020, the biggest deals in the EdTech sphere in the USA were made by Blueblood, Andreessen Horowitz, and General Catalyst companies. Currently, the American market incorporates over 2 thousand EdTech products. Its principal niches are the secondary and higher education. The biggest deal was made with the Roblox Company (online gaming and learning platform for children). The Coursera and CampusLogic platforms have online courses and financial management tools to offer for colleges and universities. The Handshake Company bringing together college students with employers rounds out the top three companies in the domain of educational technologies. To represent the investors' growing interest in career guidance programs, the leader list also includes Udacity and Lambda School companies.

During the Covid-19 pandemic, closure of schools has led to higher spending on services of further education, with the investment capital following. The capital is attracted by the new generation models (Sora Schools), too, which are designed for private learning and homeschooling. It is India that is gaining on the American EdTech market: in the past year, Indian companies raised USD 1,6 billion, having ranked the world's second in the volume of investments as of the third quarter of 2020 — leaving the USA behind (Soloviev, 2020).

According to analysts of Smart Ranking and the TalentTech IT holding company, "Russian online education market will grow even faster — increasing some 1,5–2 times every year. As of 2019, its share of the total EdTech market amounted to 2%, and by now, it has got 1,5 times bigger, taking up to 3%" (12, 2021). In Russia, 70 EdTech projects have attracted venture capital investments over the latest 5 years (the deal amounts averaging at under USD 2 million) (Snowballing Growth: Rating of Leaders of Russia's Online Education Market, 2020). Foreign investors have not invested their funds into the Russian EdTech since 2014, since the point the sanctions war started. Although there is a considerable need of educational innovations, the share of public investment into EdTech startups is still not large.

The authors believe this is associated with the fact that higher spending for education (in 2020, the education spending item of the federal budget of the RF reached the mark of 956,9 billion rubles, making 4,1% of the total public expenditure) (Utilization of the Federal Budget and Budgets of the Budgetary System of the Russian Federation in 2020, 2021), has not increased its share in the total public expenditure volume. It should be noted that starting from 2015, the RF has not spent for education more than 4% of GDP per year (Rodenkova et al., 2020). Meanwhile, within the total amount of funding, the percentage allocated for educational innovation and EdTech startups ranges from 1,3% to 15,4% (for the federal programs "Young professionals" and "Staff for digital economy", respectively). As for non-budgetary

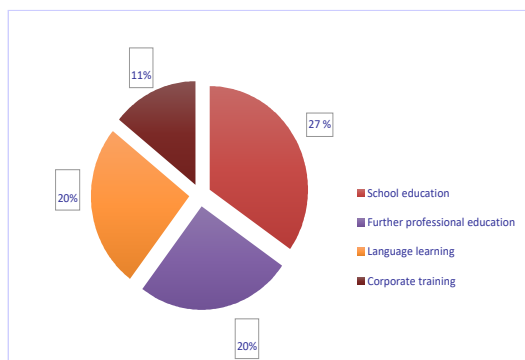


sources of funding in the total expenditure volume, these take up so little as 0,05%, according to the passport of the "Education" national project (2018).

However, Russia has some options for EdTech startups to get financed by accelerators, such as Skolkovo AdVentureLand, ED2 EdTech accelerator, accelerator of Sberbank and 500 Startups, the Angelsdeck club of investors, and others.

Analysts "refer school (27%) and further professional education (20%), as well as language (20%) and corporate training (11%) to the most attractive lines for investing into the Russian EdTech" (Ilingin, 2020) (see Figure 2). Fulfillment of the "Digital Economy" national project is bound to contribute to the growth of the EdTech market. Thus, the EdTech tools will be sought after in the corporate segment, too. The school, university, further education, and corporate training get "digitized" to meet the new needs.

Figure 2 The structure of investments into the Russian EdTech sector



Source: authors' own processing

So, in 2020, Russia's Ministry of Science and Higher Education selected 44 educational organizations needing support of digital development most of all.

Two-part subsidies sized 7,6 to 29,26 million rubles were allocated to all the educational organizations for implementation of digital development programs in 2020 and 2021, the total sums being 423,5 million rubles and 496,1 million rubles, respectively (with 919,6 million rubles distributed in 2020) (Official Website of the Ministry of Science and Higher Education of the Russian Federation, 2021).

According to the findings of analysis of the world educational market, a number of the most essential development trends of the education industry can be identified (Table 1).

Table 1 Current education industry trends and promising educational projects addressing consumer interests

Trends	The main range of consumer interests	Promising EdTech projects	Online tools
Nationwide standardization of the educational process	Preparation for exams	Preparation for tests of foreign language; USE, BSE, ARTW, etc.	Repetitor.ru aggregator of tutors Castle Quiz mobile app
The "lifelong learning" trend and growing interest in the humanities (liberal arts)	Inclusion of adjacent subjects and non-specialized skills into the process of learning	Soft skills training: gaining competencies not directly associated with the professional activity	Uchi.ru, Foxford, InternetUrok.ru, Maximum, Class Timetable Evernote, Google Docs, Trello, and Todoist
Digitization of learning	Paid online learning	Virtual assistants and robots	Yuanfudao — Chinese platform Khan Academy — American platform Skillbox — Russian platform
Growing popularity of	Interest in innovation	Learning with the help of	Siri, Alice, Drops

Trends	The main range of consumer interests	Promising EdTech projects	Online tools
edutainment	technologies in learning	voice-controlled and gaming software	
Integration of artificial intelligence into the humanities	Personalized learning	"Programming for Everybody (Getting Started with Python)"	IBM Watson Microsoft Azure cloud platform Smart School Pro
Development of intensive courses containing the profiled information only	Intensive training course	Mini MBA	DataSense data management platform Lumosity: Brain Training
Hybridization of the educational process	Expanded format of learning (online, offline, group and personalized classes, etc.)	F Learning studio (catalog of useful courses)	Video courses, AI, self-education platforms
Homeschooling and further education	Private schools	marketplaces	Coach Hd

Source: compiled by the authors according to the data of the world EdTech startup market review (Ilingin, 2020)

Nationwide standardization of the educational process has generated the demand for new services — preparation for the USE. This demand was materialized by the Repetitor.ru aggregator of tutors counting over 100 000 participants. As for the Castle Quiz mobile app, it introduces some gaming elements into preparation for the USE, which promotes better acquisition of the study material.

The lifelong learning trend and growing interest in the humanities (liberal arts) spurs the demand for the EdTech to cultivate flexible super-professional skills contributing not only to development of creativity and interpersonal skills but to students' self-development, too. For this purpose, the educational platforms of Uchi.ru, Foxford, InternetUrok.ru, Maximum, and Class Timetable (the latter is basically an e-governance) have been developed and operating successfully. Notion, which is a hybrid of Evernote, Google Docs, Trello, and Todoist apps, can serve as a tool for optimizing the virtual working space for senior school, college, and university students.

According to experts of Google and Ipsos, in 2021, digitization of learning will go on growing, too, with online learning to become the development driver of the domain of education (Kuzmin, 2021). Over the coronavirus pandemic, such educational platforms as Yuanfudao (Chinese), the American Khan Academy, and Russia's Skillbox have become the most successful ones. The Yuanfudao platform has set the world record in attracting investments — raising USD 2,2 billion, with USD 15,5 billion of general estimate (Zhukova, 2021). Khan Academy is an example of the world's largest storage of educational content on the school program (its number of members is 580 million) adapted for online learning.

The popularity of educational innovations, such as edutainment, based on the state-of-the-art psychological techniques, gameplay format, and information and communication technologies (Siri, Alice, Drops, and so on) is growing year by year. Joining in with the digitization trend within personalized self-learning paths, artificial intelligence gets integrated into the humanities. In 2020, "Programming for Everybody (Getting Started with Python)" and "Introduction to Data Science with Python" were the world's top popular courses (Nemchenko, 2017).

Alongside this, training courses that offer concentrated information on the professional profile, e.g., Mini MBA, are intensified, and online tools like the DataSense data management platform and Lumosity: Brain Training app are used successfully. Lumosity: Brain Training is one of the most well-known apps for training one's memory, speed of thinking, attention, and other creative and cognitive skills.

One more trend is hybridization of the educational process, which implies expanding the format of learning and including

online, offline, group, personalized classes, and other forms of learning into it. For example, animated video clips of lectures will be popular which help one make sense of difficult questions in a gaming format.

Confirming people's dissatisfaction with the existing system of education, the growth trend of private schools (learning and unschooling) contributes to higher demand for startups in the domain of further education: the range of topics is expanded, new formats are created. For example, there is the "IQ007 school of speed-reading and development" which has launched over 150 franchised centers in the recent 4 years" (IQ007, 2021). The new niche of further education is occupied by marketplaces aggregating their audience by means of the content interesting them. In this market, the key players are KidsReview, iNLEARNO, the MEL courses, and Profilum.

Experts share the opinion that there will be least of all competition and best conditions for growth in the educational segments of further professional education and specialist skills upgrade. Meanwhile, the demand here is stirred up by three parties: the state, big business, and employees of corporations.

As the experience of the majority of digital educational projects shows (including the Russian ones — Maximum test, Foxford, and Uchi.ru), one needs a mentor, curator, or teacher for more effective absorption of information. This is characteristic for the entire market of online education — particularly for the school segment (Suteeva, 2012).

The authors believe the next development step of online education will be not only educational programs compiled by curators or mentors but also building of personalized self-learning paths that will be adjusted by a specially trained robot. The robot will monitor students' progress along such individual self-learning pathways. In this case, the teacher's principal functions in the training process will be dramatically different from the conventional ones. Meanwhile, it should be noted that the technology of plotting personalized self-learning paths has a number of features similar to coaching sessions and corresponding to conditions, principles, and psychological and pedagogical practices of coaching. That is, the use of coaching tools (micro and macro models, main principles, coaching stance, etc.) as the methodological framework for building personalized self-learning paths will be effective for enhancing students' involvement into further education.

The outlined education industry trends and transformation of teachers' functions into those of curators, mentors, tutors, and coaches confirm further growth of the demand for executive coaching, the principal methodology of which consists in personalized approach to each student (Whitmore, 2005). Currently, there is successfully operating software for finding coaches for employees (Coach HR) which is based on artificial intelligence.

## 5 Discussion

Rapid growth of the demand for promising educational projects in further professional education brings about the necessity of measuring the effectiveness of work of ET startups in this segment of the educational market.

In practice, there are various approaches to solving this problem. So, for example, private investors (the PR Online agency) suggest measuring the effectiveness according to the criterion "the least investment with annual revenue increment" (Nevskaya, 2016). Developing the classical schemes of estimating investment project effectiveness, V. Baranov and V. Miklushevsky (2004), methodologists and practitioners of investment management, suggest using the modified internal efficiency ratio (modified internal rate of return).

Public investors prefer calculating the budget effectiveness "as the difference of income and spending of budgets at all levels (the federal, regional, and local ones) which are coupled with a particular social project", relying on the research of

S. Bukhonova and Yu. Doroshenko (2006) in quantitative effectiveness estimation of social investments.

Corporate investors tend to measure the effectiveness of work of ET startups by the volume of investment into employees' self-development through the lens of HR goals and tasks, using the integrated approach of L. Lukicheva and S. Golovanov (2014) to estimating the effectiveness of investing into personnel development. As for business accelerators, they prefer estimating scalability of the project from the first sales to multi-fold increase of revenue viewing it as "company's growth way through optimizing the processes, consistent structuring, and drastic cuts in costs" (Ermakov, 2019).

Summing up the said approaches, the authors have come to the conclusion that each type of investors has their own preferred choices of ET startup effectiveness valuation methods (Table 2).

Table 2 Methods of estimating the effectiveness of ET startups for each investor type

Investors	Methods	The main principles of the methods
Private	Comparison	Assessment of startups as compared to the similar ones
	Cash flow discounting (DCF method)	Evaluation of the forecast cash flows
	Venture capital (rate of return)	Calculation of the expected payback or internal rate of return (obtaining the average return estimate)
	Combining (the Berkus method)	Summing up the values of different startup elements to find out its current value
	Business plan appraisal	Substantiation of investment attractiveness, scalability prospects, and growth rates
Public	Price versus quality analysis (the VFM method (value for money))	Development of the "quality standard" for the educational service and its prime cost
	O. A. Yastrebov's method	Calculation of the integral social effectiveness indicator
	Estimation of competitive advantage of the project implementation	Identification of advantages of using budget funds for implementation of the startup
Corporate	Cost method	Evaluation of actual costs for creation of a similar project
	Competitive losses	Estimation of financial losses in case of acquisition of the startup by a competitor
	Forecast financial plan appraisal	Evaluation of profitability, rate of return, and risks against the potential profit
	Estimation of potential earnings	Estimation of the forward value of the startup depending on the student population size and the "customers' paying capacity"
Business accelerators	Matching	Consideration of the investor's preferences for investing
	The PVN method (lit. the hit or miss method)	Investors' subjective score of the startup factors
	The scorecard method or benchmark method (B. Payne's method)	Finding out the average score of the startup in this particular region and sector of the educational market

Source: compiled by the authors

At present, when estimating EdTech startups, private and corporate investors, just like accelerators, use such methods as PVN, the Berkus method, the venture capital, and DCF one most frequently (Slepov et al., 2019). As for the startup valuation technique preferred by the state, it relies on the methodology of estimating public private projects (Gerzeliya et al., 2018). According to the authors, both the assessment ways used for conventional business and all appraisal methods used for other startup types, e.g. evaluation of useful assets and potential benefits, are not suitable for estimating the effectiveness of ET projects (Kvon, 2019).

With regard to this, let *the specific nature of the methods of estimating the effectiveness of ET projects* be noted. On the one hand, they do not come down to appraisals of the private sector and business accelerators (commercial effectiveness analysis). On the other hand, they differ from consideration of interests of the state (analysis of costs and benefits in the public sector)

because they have to take into account students' personal interests and those of their families, i.e., the educational ("social") effectiveness.

In the authors' opinion, when considering ET startups with specific features of the modern market of educational projects borne in mind, their effectiveness should be defined as an integrated indicator incorporating not only such components "as effectiveness — performance function — the extent of achieving a goal (performance, closeness to the goal), efficiency (economic feasibility — the ratio of planned resources and inputs to the actually used ones), and quality" (Sink, 1985) but including the educational effectiveness, too.

For example, the educational effectiveness of an ET project based on personalized self-learning path with the use of coaching can be found out by measuring the involvedness of students into further education with the GROW model and the OR MISS author technique of building a personalized self-learning path developed by I. V. Borisova (Borisova & Ershova, 2021). This technique takes into account particularities of plotting a personalized self-learning path and applies current psychological and pedagogical practices of stimulating students' involvedness into further education. According to I. V. Borisova's technique (Borisova & Ershova, 2021), the level of involvedness is characterized by integral scores on each of its components. So, the higher the involvedness is, the higher the score of indicators will be. The score system of indicators is given in Table 3.

Table 3 The system of criteria and indicators of the educational effectiveness of ET projects

Criteria	Indicators
Academic and intellectual development (C1) (represents achievement of educational and academic objectives)	- P1 Optimal assignment completion time; - P2 The extent of completion of study assignments; - P3 Minimum quantity of mistakes in the final work; - P4 Meeting the quality requirements for a particular work; - P5 Using in practice the maximum quantity of new means and techniques demonstrated by the teacher.
Behavioral component (C2) (represents the conscious attitude to learning, the level of self-discipline and interpersonal skills)	- P1 Performance of formal procedures that are compulsory in learning; - P2 Any disciplinary measures taken in relation to the student; - P3 Voluntary participation in extracurricular events; - P4 Involvement into social contacts and interaction with other participants of the educational process; - P5 Maximization of the time of learning; - P6 Absorption with the process of learning; - P7 Absorption with the process of learning; - P8 Initiative in the process of learning.
Emotional component (C3) (represents the nature of attitude to lifelong education, prevailing emotions)	- P1 — Commitment (identification of prevailing emotions); - P2 Absorption; - P3 The extent of satisfaction with the educational process; - P4 Higher interest in the process of learning (gaining knowledge, abilities, and skills); - P5 The feeling of one's own effectiveness; - P6 Reinforced confidence of oneself and belief in one's capacities; - P7 Emotional evaluation of the educational process; - P8 Enthusiasm for learning.
Cognitive component (C4) (represents understanding of the essence of further education, learning, self-learning)	The understanding of: - P1 quality of learning; - P2 the opportunity to fulfill one's creative potential; - P3 tasks of further education; - P4 the process of learning; - P5 the process of self-learning; - P6 "rational benefits" of learning, - P7 personal responsibility for the results of learning.
Motivational component (C5) (represents the extent of interest in learning)	- P1 The content and power of motives underlying learning; - P2 Personal needs fulfilled in the process of learning; - P3 Self-development and self-fulfillment motives met in the process of learning.
Value-based component (C6) (represents the level of importance of further professional education as a value)	The importance of: - P1 self-learning; - P2 further education in personal development; - P3 a particular activity and the aspiration to "be at one's best" in it; - P4 education for successful adaptation and socialization in the contemporary conditions.

Source: compiled by the authors

The use of the OR MISS model is subject to limitations associated with having to develop recommended practices of preparing and conducting further experiments; the latter are

needed to implement this technique into the process of bringing together personalized self-learning paths. This is due to the said technique being designed for a prolonged period of use, at least, counting several cycles of achieving the end objective.

Thus, an ET project which involves building personalized self-learning paths with the use of coaching technologies features a high extent of educational effectiveness as the key component of investment attractiveness for EdTech startups.

## 6 Conclusion

Development of the modern ET startups market can be considered one of the positive effects of the coronavirus pandemic. In this market, it is China and the USA, followed by India, that are the leaders. Russia's market of online education advances at a rapid rate, too. The demand for promising educational projects is stirred up by the educational industry development trends associated with the global digitization: the trend toward "lifelong learning" and the growing interest in the humanities (liberal arts); the popularity of edutainment; integration of artificial intelligence into the humanities; hybridization of the educational process; the growing need of homeschooling and further education. The new educational trends transform the functions of teachers and techniques of training, particularly in the sector of further education, which is confirmed by the growth of demand for executive coaching, with its methodology consisting in personalized approach to each student. Given this, the problem of estimating the effectiveness of ET startups based on personalized self-learning path, with coaching used in the process of fulfilling further education programs, takes on increasing importance.

According to the authors of this research, effectiveness of such projects should be measured as an integrated indicator incorporating such components as effectiveness (the extent of achieving a goal), efficiency (the ratio of planned resources and inputs to the actually used ones), quality, and the educational effectiveness. Introducing the system of educational effectiveness criteria and indicators into the practice of assessment of educational projects will be able to not only enhance their investment attractiveness but also produce a positive effect on the performance of national projects being implemented.

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## DEVELOPING INFORMATION COMPETENCIES OF FUTURE MUSIC TEACHERS THROUGH MULTIMEDIA AND AUDIOVISUAL TECHNOLOGIES

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Abstract: This paper presents the results of research focused on developing the information competencies of future music teachers which integrated the experience of national and international universities. The main intention of this research was to consolidate the studies on professional training of music teachers at Mordovian State Pedagogical University named after M. E. Evseev (Russia, Saransk) and Kazakh National University of Arts (Kazakhstan, Astana). The goal of the authors was to examine the problem of developing the skills of future music teachers in the use of multimedia and audiovisual technologies integrated in various creative activities as part of the professional training of a teacher.

Keywords: information competencies, music teacher, multimedia technologies, audiovisual technologies, networking cooperation, partner universities.

### 1 Introduction

In the modern high-tech world, the audiovisual and multimedia tools have become ubiquitous, shaping and determining the minds and culture of children and studying youth who use such technologies solely to satisfy their needs for information and entertainment. It is impossible to disregard that in the professional training of music teacher. Professional competence of a modern music teacher with rapid updating of information imminently requires the use of information and communication technologies in school practices. For addressing professional objectives, the focus should be on developing the information competencies which include the ability to create resource-information databases for implementing activities in various spheres; the ability to acquire and use, inter alia through the information technologies, the new knowledge and skills, directly related to the field of occupation; the readiness to develop and implement the training methods, technologies and techniques and to analyze the results of their implementation in the institutions carrying out educational activities; the readiness to use the modern information and communication technologies and mass media for solving cultural and educational tasks.

The content of such competencies calls for invigoration of the creative aspect in the professional practice of a present-day teacher. Unfortunately, the conventional tools and methods of training only partially relate to the problems of human as a creative personality and individuality, and are not sufficiently effective in fostering information competencies laid down in the regulatory documents. This heightens the relevance of this research stemming from a need to use multimedia and audiovisual technologies in music education relevant to the dictates of times and turning them into a training tool essential for professional development of a future music teacher.

### 2 Literature Review

Foreign studies (Koch, 2016; Kennedy et al., 2017) explore concepts and methods involving the information and communication technologies to encourage and develop the project thinking. The authors believe that there are three main components to high-quality learning, in particular, the content (well-organized and integrated knowledge, theories, ideas, practices, and approaches to using knowledge from different fields), the pedagogy (pedagogical processes and teaching methods), the technology (different types of pedagogical

techniques and information technology most appropriate for certain subject areas, however the subject area content may evoke changes in technology or vice versa) (Koch, 2016).

Multimedia and audiovisual technologies (Moshkarova, 2011; Parshina, 2014; Velichko & Mironova, 2015; Bondareva, 2016; Strielkowski & Chigisheva, 2019; Jen et al., 2016; Burnashev & Spiridonova, 2016; Golubeva, 2016; Soltovets et al., 2019; Khusainova & Shcherbotaeva, 2017; Lukiyonov et al., 2017; Terrazas-Arellanes et al., 2018; Gorunova & Lebedeva, 2018; Noskova et al., 2018; Velichko et al., 2020; Parshina & Karpushina, 2020; Kobozeva et al., 2020), are widely used abroad and domestically and permeate various areas of social life, including education and mass consumer culture.

Thus, the research of F.E. Terrazas-Arellanes, M.A.J. Gallard, L.A. Strycker, E.D. Walden (2018) has proven the effectiveness of interactive online multimedia modules introduced in the learning process in order to improve the scientific competencies of students, especially in inclusive education. Some studies concentrate on the role of "multimedia multicomponent professional development packages" considered as a combination of electronic methodological resources in improving the quality of students' education (Kennedy et al., 2017). These papers also address the functionality of multimedia technology related to high-quality sound, realistic color images, graphics, video, and other interactive elements that allow for successful mastery of the studied content compared to the conventional learning.

The content of multimedia technologies includes modern multimedia presentations, which design is constantly undergoing changes to improve the effectiveness of learning at university. Research papers by R.E. Mayer, J.T. Howarth, M. Kaplan, S. Hanna (2018) examine the use of the segmentation principle (graphics presented on the left side and text on the right side of the presentation slide) to classes in the form of an online slide show. At the same time, students have control over movement from one slide to another for sequential study of the material.

In the context of the use of audiovisual technologies, modern scientific efforts of foreign scientists (Charalambous et al., 2018) focus on such organizational forms of pedagogical process at university as "video clubs", which facilitate immersion of students in the problems of practice and mobile response from future teachers to changes in practice, as well as conducting various theoretical research as part of the video club. In research by the Australian Professional Teachers Association (Watters et al., 2018) learning videos are used to analyze the lessons delivered in the classroom by experienced teachers.

Based on the above, it should be highlighted that:

1) Currently, audiovisual and multimedia technologies are used in the process of musical education as methodological and technological tools for addressing didactic learning objectives (intensity of assimilation of educational information with the help of presentational computer programs, through visual appeal, design, structuring; introduction of new interactive organizational forms of classes - video clubs, audiovisual projects; use of multimedia reference online modules on the subject).

2) There are no studies in foreign and national theory and practice aiming to develop the students' skills of using these resources in education on the basis of their integration into the organizational, content and procedural component of creative professional activities, which are the essence of personal development of a specialist as a teacher of artistic-practical and humanitarian spheres.

### 3 Research Methodological Framework

The research purpose was to develop information competencies of future music teachers by integration of multimedia and audiovisual technologies in various creative activities forming part of the professional training of a teacher.

The research addressed the following objectives:

- 1) develop practical skills for using multimedia and audiovisual technologies in the process of music education;
- 2) develop the independent approach to selecting the software and methodological aids for supporting the modern learning process.

For assessing the information competencies of future music teachers this research relied on theoretical methods (analysis of scientific literature, consolidation of pedagogical experience), empirical methods (the pedagogical experiment) and mathematical methods.

The research was held from 2018 till 2021. The Mordovian Research Center of the Russian Academy of Education (the research and development laboratory "Continuous Music Education") served as the research and development space for experimental research on the stated problem. The experiment participants were 300 students of the Mordovian State Pedagogical University named after M. E. Evseviev (hereinafter referred to as the Evseviev's MSPU) and the Kazakh National University of Arts (hereinafter referred to as Kazakh NUA), including 180 students of Evseviev's MSPU in the field of training Pedagogical Education, Music specialty, and 120 students of Kazakh NUA in the field of training Music Education, of 2nd, 3rd and 4th years of study.

### 4 Results and Discussion

The research results indicate personality changes in students, bringing into prominence that development of information competencies of a future specialist by integrating the creative aspects of professional activity (listening to music, music playing, singing, freestyle) and possibilities of multimedia and audiovisual technologies leads to qualitative changes in the personal creativity component of professional activity of a modern teacher as reflected in the publications of researchers (Kobozeva, 2013; Parshina, 2014; Kobozeva et al., 2014; Kobozeva et al., 2015; Khusainova & Shcherbotaeva, 2017).

The results of the conducted experiment were as follows: at the diagnostic stage, the higher level of information competencies was demonstrated by 21% of students from Saransk and 15% of students from Nur-Sultan. At the same time 12 % of students from Saransk and 14 % of students from Astana were found to have good knowledge in the field of basic general pedagogical requirements for the implementation of audiovisual technologies in the subject area "Music". The most complex cognitive element was the knowledge of the criteria of pedagogical effectiveness of the use of audiovisual and multimedia technologies in the music teaching process - 10% (Saransk, Nur-Sultan), 22% (Saransk) and 26% (Nur-Sultan) of students showed a basic level of information competence in the use of multimedia and audiovisual technologies in the pedagogical process. The low level was shown by 57 % (Saransk) and 59 % (Nur-Sultan) students.

The main diagnostic criteria were:

- Independent, comprehensive and competent demonstration of knowledge of basic audiovisual and multimedia teaching technologies and techniques of work with these technologies; basic general pedagogical requirements for the implementation of audiovisual technologies in the subject area of music teaching; criteria of pedagogical effectiveness of using audiovisual technologies in the music teaching process;

- Good skills in using audiovisual and multimedia technologies in the subject area; in fusing together the audiovisual technologies of training and general pedagogical methods and techniques of music education; the ability to analyze the learning activity of students and methodological activity of a teacher related to the use of audiovisual and multimedia technologies of training.

The ascertaining experiment revealed the prevalence of satisfactory level of skills in the use of audiovisual and multimedia technologies in the subject area, which manifested in the problems faced by students related to their ability to integrate the possibilities of electronic resources in creative professional activities, develop and implement creative exercises as a methodological toolkit essential for a teacher.

It should be especially emphasized that the study of modern practice (survey of music teachers, teachers of supplementary education in the field of arts, attendance of methodological seminars, master classes, competitions, etc.) showed that the specified problem is also typical for the music pedagogical community carrying out its activities in both general education schools and institutions of supplementary education for children.

The research objectives of developing the practical skills in using multimedia and audiovisual technologies in music teaching process at school and elaborating an independent approach to the selection of software methodological support for the modern educational process were accomplished with the help of certain corrective measures developed and implemented in the educational processes at Evseviev's MSPU and Kazakh NUA:

- 1) Use of interactive teaching methods, creative assignments intended to model the music teaching practices, extracurricular activities and music lessons in supplementary education.
- 2) Incorporation of multimedia and audiovisual technologies (multimedia presentations, training programs, electronic measuring materials, etc.) into the training process of major disciplines within a certain specialty.
- 3) Development and introduction of elective courses (on the basis of Evseviev's MSPU: "Audiovisual Technologies in the Music Teaching Process", "Use of Multimedia Technologies in Music Education", etc.; on the basis of Kazakh NUA: "Multimedia Support of Music Lessons"), focused on transmitting special knowledge about types of modern audiovisual technologies of training and diagnostics, practical mastering of methods of work with modern audiovisual resources, creative music computer programs, electronic textbooks, music computer didactic games, computer training programs, multimedia presentations, modern screen arts, etc. in the educational process and music cultural and educational activities.
- 4) Introduction of supplementary general education programs and qualification upgrade programs for senior students (on the basis of Evseviev's MSPU: "Music and Computer Technologies", "Innovative Music Pedagogical Technologies") intended to familiarize students with the music computer programs, digital musical instruments for improving practical skills of work with multimedia and audiovisual technologies.
- 5) Development and introduction of electronic educational resources (on the basis of Evseviev's MSPU: multimedia courses in the disciplines "Analysis of Musical Compositions", "Theoretical Foundations of Musicology", "Solfeggio", "Polyphony", "History of Music" (Parshina, 2018); on the basis of Kazakh NUA: "Innovative Educational Methods for Music teacher", "Didactic Music Aids on Kazakh National Rites" in Kazakh, Russian and English (Khusainova & Shcherbotaeva, 2017).

The control stage of the experiment yielded the following results. After the formative experiment at Evseviev's MSPU, 17 % of students had the low level, 43% – the basic level and 40 % – the high level. In Kazakh NUA, at the control stage of

research 15% of students demonstrated the low level, 46% - the basic level and 39% - the high level.

In general, it suggests an increase in the level of information competencies of students from both higher education institutions.

The results of research into the level of information competencies of students in Saransk and Nur-Sultan by means of multimedia and audiovisual technologies are presented in Table 1 which was produced by the authors.

Table 1 The revealed level of information competencies of students from Evseviev's MSPU and Kazakh NUA

	Evseviev's MSPU (Saransk)		Kazakh National University of Arts (Nur-Sultan)	
	Ascertaining stage	Control stage	Ascertaining stage	Control stage
High	21%	40%	15%	39%
Basic	22%	43%	26%	46%
Low	57%	17%	59%	15%

Source: compiled by the authors.

The statistical results obtained at the ascertaining and control stages of experiment indicate an increase in the level of information competencies of students from both universities. At all stages of experiment, the ongoing monitoring was performed over development of information competencies of students from Kazakh NUA and Evseviev's MSPU.

## 5 Conclusion

The conducted research helped to validate the assumption that the above described scenario for multimedia and audiovisual support of professional training of music teachers in the modern university is expressed in the growing role of networking cooperation, which allows to unite the efforts of teachers of two universities, both scientists and practitioners, when building an educational policy for preparing future music teachers which would embrace the key trends in musical pedagogical education in Russia and Kazakhstan; in the search for innovative scientific and practical solutions to the current problems existing in the modern music pedagogical education.

The undertaken endeavour made it possible to identify: the wide possibilities of using multimedia and audiovisual technologies in the music teaching of future music teachers; specific features pertinent to development of multimedia and audiovisual competencies of future teachers pursuing the Music Education specialty.

The practical value of the research lies in the conclusions drawn based on the analysis, which can be used in practice of educational institutions for preparing music teachers. Prospective areas for further research on the problem could be the studying of the specific aspects related to implementation of these technologies in the Music field of training at different levels of education.

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**Primary Paper Section: A**

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## GROWTH INDICATORS FOR THE HOTEL INDUSTRY: AN ALTERNATIVE MODEL BASED ON DIGITAL TECHNOLOGIES, AGILE TRANSFORMATION AND PROCESS FRAMEWORKS

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**Abstract:** The paper discusses genesis, content, and prospects of development of the hotel industry in conditions of new digital technologies, transformation of Agile methods, and process frameworks, given the unpredictability of the world and domestic tourism. The primary result of this research is the design of an alternative model of hotel facility management oriented to the new criteria and growth indicators. The model is to be based on the integral interaction of digital technologies and innovation trends of the sixth technological paradigm, as well as fulfillment of the strategy of sustainable development. At present, it is extremely important for the hotel business to create a new business model enabling it to considerably expand and adapt its range of services to win new segments of the market.

**Keywords:** hotel business, Agile methods, process framework (Scrum), product portfolio management (LPM), lifecycle of hotel facilities (PLC), change management.

### 1 Introduction

The year of 2020 fuelled the increased demand for such managerial model and business development concept as change management. Forecasts about the way the world is going to change (after the pandemic) in 2021-2024 are largely questionable and apocalyptic, yet they share one true point – the world is bound to change. At least, this holds true for individual segments of the world economy, such as the industry of tourism and entertainment.

The COVID-19 pandemic has landed the global economy into the biggest-ever crisis. All regions of the world have turned out to be affected by it to a certain extent. It is the sphere of services that is to suffer the greatest damage: the travel business is paralyzed, restaurants and hotels are closed, the industry of mass entertainment and shopping gets compromised, and air traffic has been downsized dramatically (Beresneva, 2019; Grunoyova, 2019; Korotkaya, 2020). The true toll is yet to be found out, although one can already make a preliminary conclusion: countries having a large proportion of services in their GDP will be the ones to suffer most. First of all, these are the USA where the share of services is over 77%, Great Britain – 71%, and France – 70%. In Russia's GDP, the proportion of services is markedly lower – 54% (Antropova, 2020; Solomonova, 2020). On the one hand, a low share of services in GDP of the RF will help mitigate the damage done by the pandemic; on the other hand, it is indicative of Russia's lagging behind in developing this crucial sector of the economy, as the modern world ascended the epoch of services back in the 1990s.

The international tourism is one of the most important segments of the services sphere. Nowadays, tourism has turned into one of the highest-margin and most rapidly developing branches of the world economy. Yielding over 8% of the goods and services export, tourism itself accounts for almost 34% in the world's services export segment. The sphere of tourism is inseparably associated with another vital sector of the world economy – with the hotel business.

The hotel business is one of the most rapidly developing branches accounting for almost 8% of the world's GNP and around 6% of the total tax collection (Averbukh, 2010; Aleeva, 2018; Kenzina, 2019; Machalkin & Moreva, 2018).

Development of the hotel business fuels the progress of other focus areas, too: transportation, trade, construction, agriculture, consumer goods production, the sphere of services, etc. On average, per each 10 tourists staying at a hotel, there are directly about 3 jobs and 2 more jobs which are indirectly associated with service (employees of travel agencies, transport companies, and so on). Over recent 20 years (until 2020), the quantity of

international trips doubled. The steadily growing demand brought about the similar growth of guest room stock of the hotels. According to Deloitte, there were more than 184 thousand hotels with around 18 million rooms all over the world as of the end of 2019.

In the RF, the contribution of the industry of tourism into GDP is 2,5-3 times lower than that of developed countries, ranging within 4-5%; on top of that, according to expert appraisal, in 2020, the travel business (including the hotel and restaurant sectors) lost about 1,3 trillion rubles in total from its annual turnover of 3,7 trillion rubles. Due to the Coronavirus pandemic and closed borders between countries, Russia's outbound flow of tourists has shrunk by 77%, inbound – by 93%, and the flow of tourists traveling within the country has decreased by 30-40% (Yankina, 2018; Hunt, 2004; Kidd, 1994).

All the above factors confirm that Russia's hotel business needs to work out modern strategic approaches which will adapt it to the new reality, remain flexible and relevant under any development scenarios of the international and domestic tourism and under any force majeure circumstances that may emerge.

The model which is classical for capitalism has come up close to a sort of the "midlife crisis". So, profit is still an essential condition for stable operation of a business, but to stay successful in the market, one has to consider increasingly more factors. In particular, investors, customers, and employees want the business to respond to changing public values and to pay more attention to environmental and social questions.

At present, a company's success will not be measured by money only. To keep afloat, a business will have to reconsider corporate objectives and to redefine its role and importance for the world around it. The new definition of the term "growth" must include fundamentally different metrics: for example, the indicators of personal development (training, happiness, and longevity), health of both employees and customers, reduction of the harmful impact on the environment (Brymer, 1995; Olderoege, 2018; Timofeeva, 2018).

With regard to this, the hotel business has to create a new business model implying transition to a brand new qualitative level of working with customers and personnel. It also has to considerably expand and adapt the range of hotel services to win new segments of the market.

Today, the principles of change management in the hotel activity cannot be implemented without using digital technologies and Agile transformation of business. Among the principal advantages yielded by Agile and Scrum technologies (as a process framework), one can list the 25-35% reduction of costs, the 20% enhancement of quality, and the 100-200% acceleration of launching new products and services.

75% of efforts aimed at transformation of business fall short of their objectives in terms of the obtained value, deadlines, or both (Boy et al., 2017). The majority of large hotel chains are built of individual units and specialized functions. This creates a source of inefficiency which can be eliminated by using flexible approaches. However, to use Agile throughout the company, the managerial system has to learn to work differently at all levels.

At the hotel facilities, successful implementation of Agile transformation has to begin with changing the top managers' habitual work methods. They must adopt the flexible way of thinking and share the values and principles of flexible approaches. A rigid hierarchical structure of an organization is a barrier to Agile working.

The use of the process framework and Agile methods in transforming the hotel business will allow achieving three principal results: reducing time-to-market (i.e., the time span from the idea up to the product being marketed), boosting

customer experience (the quality in terms of being sought after by the end user), and enhancing productivity (performance as the scope of work per unit time) – as well as several intermediary results: transparency, predictability, motivation, and some others.

Reduction of risks for the business remains one of the key tasks of the Agile approach (Schwab, 2016). It concerns the most varied risks: e.g., marketing an irrelevant (not appropriate, not required, not paying back) product, wasting resources (time, effort, money, attention). The process framework in the hotel business will allow carrying out the iterative and incremental approach – i.e., orienting to stage-by-stage moving along the path of marketing services, consistently creating potentially ready for launching "values" and receiving fast feedback from the environment, customers, and users.

With regard to the above, one can state the fact that survival and development of the Russian hotel industry directly depends on the speed and quality of implementing the modern business management approaches. A new model of management of the hotel facility has to be formed that will rely on the integral interaction of digital technologies with innovation trends of the sixth technological paradigm and fulfillment of the strategy of Society 5.0. This implies ever stricter social and environmental standards and the use of innovation technologies – the resource-saving ones, the information ones, and those closely related to completing sustainable development tasks.

## 2 Literature Review

Russian and foreign scientists continuously monitor and study new trends in the way the hotel business evolves and advanced methods, technologies, and tools of management are explored and implemented in the hotel industry.

So, Steven L. Goldman (Goldman et al., 1994) discuss an approach to managing a flexible enterprise based on changing needs and wishes of certain groups of customers. They also consider relevant sales assessment tools for measuring flexibility of the company and identifying ways for it to follow to become a stronger competitor. Studies by Jacques Boy, Christian Dudek, Sabine Kuschel (2017), Amit Mitra (2005), Paul T. Kidd (1994), and A. Chelyapin (2016) deal with questions of project management, flexibility of business, stability of business processes, and the use of corporate knowledge in conditions of progressive globalization considering project management in information technologies, rapid spread of computer technologies and communications, and changing organizational structures (Vorobyev, 2016). Woodrow W. Clark II and Ted K. Bradshaw (2004) examine current issues of energy management and the integration of energy policy with sustainable development in their works.

Best practices of Agile and conventional software development are compared by Barry W. Boehm, Richard Turner, Grady Booch, Alistair Cockburn, and Arthur B. Pyster (2003). They analyze changes underlying the choice of flexible, iterative (Scrum, Extreme Programming, Evo, and Unified Process) or planned methods in particular project situations. Craig Larman's research (2016) shows that iterative methods reduce the risk of failure as compared to conventional development models and cites some proofs of the value of opting for flexible and iterative methods.

Further on, Fred A. Cummins (2014) considers questions of advancing IT as the key tool for forming flexible enterprise models and data based on convergence of key technologies, including SOA and BPM. The use of Rails applications and service frameworks for connecting business objects and databases within object-relational matching is suggested by Dave Thomas, Sam Ruby, and David Heinemeier Hansson (2018). Jutta Eckstein (2003) analyzes transformation of Agile processes for smaller teams and their effect on architecture of the enterprise.

Mobile business technologies which allow providing unrivalled value to the customers, regardless of their actual location, are scrutinized by Nicholas D. Evans (2002); he addresses strategies and tactics of winning competitive advantages and the said technologies used for the purpose. The author suggests a complete step-by-step implementation plan for this kind of business: planning, process models, architecture, and implementation.

Alongside this, the majority of problems are in fact the human element ones, even in software; they cannot be solved with tools and technologies. So, numerous studies, in particular, the work by Amr Elsamadisy (2017), focus on aspects of personal flexibility, team building, communication, feedback, and all other team work skills.

Proceeding from the above, the hotel industry has a vital issue to face. On the one hand, this is the problem of developing the current system of theoretical and methodological knowledge in provision of sustainable development and competitiveness of Russian hotel facilities. The other aspect of the problem involves elaborating an alternative model of growth indicators for the hotel industry on the said basis using digital technologies, Agile transformation, and process frameworks.

## 3 Research Methodological Framework

For Russian hotel facilities, implementation of change management principles using digital technologies and Agile transformation of business can be an efficient toolkit to fulfill tasks of sustainable development and competitiveness. The objective of this research is to design an alternative model of growth indicators, or measures of growth, for the hotel industry based on digital technologies, Agile transformation, and process frameworks. There are the following research tasks: to analyze development of Russia's hotel industry market for the latest 5 years; to study methodological approaches available in the hotel business development, exploration and implementation of advanced methods, technologies, and tools of management in the hotel industry; to develop the authors' experimental proprietary model of the hotel business development (abbreviated as FIESD). The authors also aim to assess all factors directly or indirectly affecting the hotel facilities' ability to adapt to modern challenges and conduct Agile transformation of their business; to conduct a market study of the hotel services market of the Republic of Mordovia. Finally, the said tasks include testing out the FIESD model at the region's hotel facilities (those of the Republic of Mordovia) and building the proprietary model of growth indicators of Agile development transformation (FIESD) for the hotel business in the Republic of Mordovia.

For integrated appraisal of possibilities and prospects Agile transformation holds for the hotel business within the concept of sustainable development, the authors of the paper have developed the analytic hierarchy technique based on objective assessment. The analytic hierarchy method is a systematic procedure for hierarchical representation of elements determining the key research problem. The method consists in decomposing a problem into progressively simpler constituents and further processing the sequence of the decision-making person's judgments by pairwise comparisons. As a result, the relative degree (intensity) of interaction of the elements within the hierarchy can be expressed. According to the authors, this method can well be applied for integrated appraisal of all factors directly or indirectly affecting the hotel facilities' ability to adapt to modern challenges and conduct Agile transformation of their business.

The developed technique and criteria system of the new growth indicators for the hotel business relies on the analytic hierarchy method (AHM) and includes 3 criteria or approaches:

P1 takes into account the hotels' economic and competitive standing in the market;

P2 describes environmental friendliness and social development of the hotel facilities;

P3 represents their level of adaptation to environmental factors.

As the information basis of the research, the authors used data of the Federal State Statistics Service for 2019, as well as performance indicators of the hotel facilities in the Republic of Mordovia (Monitoring of Development of the Information Society in the Russian Federation, 2019).

#### 4 Results and Discussion

The hotel facility management model must be in line with all modern trends and must ensure efficient fulfillment of the principles of change management, Agile transformation, process frameworks, and sustainable development.

The following components can be suggested for the authors' experimental proprietary model of development of the hotel business: flexibility, inclusiveness, environmental friendliness, and social development (see Fig. 1).

Figure 1 Proprietary model of growth indicators for Agile development transformation of the hotel business



Source: compiled by the authors

This model (abbreviated as FIESD) is oriented to modern, adaptive, and innovation advance of the hotel business along the key lines, in particular:

- Flexibility: the flexible system of management is formed. Multiple variants of strategic development and tactical tools for fast adaptation to the dynamic market environment are prepared on the basis of Agile transformation and process frameworks;
- Inclusiveness: this is a principle up to which a hotel's activity is organized and its corporate climate is formed. It enables both employees and customers to participate in various aspects of the said activity (daily work processes, education, culture), regardless of their position, appearance, origin, gender, and health status, which improves satisfaction and the quality of personal and social development of the personnel, customers, and all stakeholders;
- Environmental friendliness: all-round use of the "green" technologies must not pass by the hotel industry, too. What is essential is not merely implementing environmental standards and using green power generation but applying the "green" thinking throughout the PDCA lifecycle stages;
- Social development: this is the most important constituent of the FIESD model. It implies integrated development of personnel and customer potential of the hotel facility. Here, the priority objective must involve consistent transition of customers and employees to a totally new level of development. New ways of meeting the potential customers' needs have to be achieved for the hotel service to become an inseparable part of life of every person (Uemura, 2017; Mitra, 2005).

The feature of the FIESD model is its implying a slightly different approach to quantitative assessment of economic, social, trend, and other factors of development of hotel facilities. There is no doubt that quantitative indicators cannot be abandoned completely but in the modern world, it is far not all factors that can and must be measured in figures. It is essential to suggest a technique which would successfully combine in itself the quantitative approach and qualitative characteristics. Meanwhile, the qualitative parameters have to occupy one of the

decisive places within it. As the basis for developing such a technique, the analytic hierarchy method can be adopted (AHM).

For integrated appraisal of possibilities and prospects Agile transformation holds for the hotel business within the concept of sustainable development, based on objective assessment, the authors have developed the analytic hierarchy technique. The analytic hierarchy method is a systematic procedure for hierarchical representation of elements identifying the key research problem. It consists in decomposing a problem into progressively simpler constituents and further processing the sequence of the decision-making person's judgments by pairwise comparisons. As a result, the relative degree (intensity) of interaction of the elements within the hierarchy can be expressed. In terms of the objective of this research, it provides an integrated approach to assessment of all factors directly or indirectly affecting the hotel facilities' ability to adapt to modern challenges and conduct Agile transformation of their business.

Based on the analytic hierarchy method, the technique and criteria system of the new growth indicators for the hotel business will rely on the following criteria: P1 – the criterion taking into account the hotels' economic and competitive standing in the market; P2 – the criterion describing environmental friendliness and social development of the hotel facilities; P3 – the criterion representing their level of adaptation to environmental factors.

Each criterion must have a scoring system to allow assessing it in an integrated way and identifying the key problem areas. According to the authors, the suggested criteria must include the following indicators.

1. Growth rate of hotel facilities' economic and competitive standing in the hotel services market for the latest 5 years:

1.1 The coefficient characterizing growth rate of the market share occupied by a hotel facility for the latest 5 years, k1;

1.2 The coefficient characterizing growth rate of EBITDA (earnings before interest, taxes, depreciation, and amortization) of the hotel facility, k2;

1.3 The coefficient characterizing growth rate of communication activity and the image level hotels for the latest 5 years, k3;

1.4 The coefficient characterizing growth rate of the range of primary and additional services of the hotel facility for the latest 5 years, k4;

1.5 The coefficient characterizing innovation initiative and benchmarking of the hotel facility, k5;

2. Environmental friendliness and social development of hotel facilities:

2.1 The coefficient characterizing environmental efficiency indicators of management, k6;

2.2 The coefficient characterizing environmental efficiency indicators of functioning, k7;

2.3 The coefficient characterizing satisfaction and stability of the hotel personnel, k8;

2.4 The coefficient characterizing involvement of the personnel and their commitment to organizational culture values, its power, k9;

2.5 The coefficient characterizing the proportion of loyal and committed customers of the hotel facility, k10;

2.6 The coefficient characterizing the implemented Diversity & Inclusion strategy which implies diversity and inclusiveness in personnel policy, possibilities for meeting employees' personal growth and creative potential objectives, regardless of their age, race, gender, or sexual orientation, k11;

3. Strategic flexibility of hotel facilities and their level of adaptation to environmental factors:

3.1 The coefficient characterizing the ability of the hotel facility to promptly respond to change of environmental factors, k12;

3.2 The coefficient characterizing change management and the quality of Agile transformation based on the Scrum technology (process framework) at the hotel facility, k13.

All selected criteria are compared with each other pairwise, and a relative degree of importance is found for each criterion in the pair. Based on the resulting comparison matrix, for each criterion, their relative importance value for achieving the set objective in general is determined.

Let preliminary ranking of indicators considering the hotels' economic and competitive standing in the hotel services market be conducted, with the rating (rank) of each of them found by Delphi procedure using the five-point scale (see Table 1).

Table 1 Rated scores of criteria associated with the new growth indicators for the hotel business in the hotel services market for the latest 5 years

Criterion	Rank
<b>1. Hotel facilities' economic and competitive standing in the hotel services market for the latest 5 years</b>	
The coefficient characterizing growth rate of the market share occupied by a hotel facility for the latest 5 years, k1	4,5
The coefficient characterizing growth rate of EBITDA (earnings before interest, taxes, depreciation, and amortization) of the hotel facility, k2	4,5
The coefficient characterizing growth rate of communication activity and the image level of the hotel for the latest 5 years, k3	3
The coefficient characterizing growth rate of the range of principal and extra services offered by the hotel facility for the latest 5 years, k4	2
The coefficient characterizing innovation initiative and benchmarking of the hotel facility, k5	1
<b>2. Environmental friendliness and social development of hotel facilities</b>	
The coefficient characterizing environmental efficiency indicators of management, k6	5
The coefficient characterizing environmental efficiency indicators of functioning, k7	5
The coefficient characterizing satisfaction and stability of the hotel personnel, k8	4
The coefficient characterizing involvement of the personnel and their commitment to organizational culture values, its power, k9	3
The coefficient characterizing the proportion of loyal and committed customers of the hotel facility, k10	2
The coefficient characterizing the implemented Diversity & Inclusion strategy which implies diversity and inclusiveness in personnel policy, possibilities for meeting employees' personal growth and creative potential objectives, regardless of their age, race, gender, or sexual orientation, k11	1
<b>3. Strategic flexibility of hotel facilities and their level of adaptation to environmental factors</b>	
The coefficient characterizing the ability of the hotel facility to promptly respond to change of environmental factors, k12	1,5
The coefficient characterizing change management and the quality of Agile transformation based on the Scrum technology (process framework) at the hotel facility, k13	1,5

Source: compiled by the authors

Next, rating of the criteria has to be compiled taking into account the degree of importance of each criterion to identify the contribution (weighting factor) of each of them into achievement of the set objective (Table 2).

Table 2 Rating of criteria of the new growth indicators for the hotel business in the hotel services market

Approaches	Rank
P1 – Economic and competitive standing of hotel facilities in the hotel services market	3
P2 – Environmental friendliness and social development of hotel facilities	2
P3 – Strategic flexibility of hotel facilities and their level of adaptation to environmental factors	1

Source: compiled by the authors

For each of the criteria suggested, significance weights of coefficients are determined using the scale of relative importance of the said approaches and priority vector identification using the analytic hierarchy method (Table 3).

Table 3 Priority vector identification

	K <sub>1</sub>	K <sub>2</sub>	K <sub>3</sub>	K <sub>4</sub>	K <sub>5</sub>	K <sub>6</sub>	K <sub>7</sub>	K <sub>8</sub>	K <sub>9</sub>	K <sub>10</sub>	K <sub>11</sub>	K <sub>12</sub>	K <sub>13</sub>	Geometrical mean (weight)	Importance
K <sub>1</sub>	1	1,00	1,50	2,25	4,50	1,35	1,35	1,69	2,25	3,38	6,75	9,00	9,00	2,551	0,153
K <sub>2</sub>	1,00	1	1,50	2,25	4,50	1,35	1,35	1,69	2,25	3,38	6,75	9,00	9,00	2,551	0,153
K <sub>3</sub>	0,67	0,67	1	1,50	3,00	0,90	0,90	1,13	1,50	2,25	4,50	6,00	6,00	1,701	0,102
K <sub>4</sub>	0,44	0,44	0,67	1	2,00	0,60	0,60	0,75	1,00	1,50	3,00	4,00	4,00	1,134	0,068
K <sub>5</sub>	0,22	0,22	0,33	0,50	1	0,30	0,30	0,38	0,50	0,75	1,50	2,00	2,00	0,567	0,034
K <sub>6</sub>	0,74	0,74	1,11	1,67	3,33	1	1,00	1,25	1,67	2,50	5,00	6,67	6,67	1,890	0,114
K <sub>7</sub>	0,74	0,74	1,11	1,67	3,33	1,00	1	1,25	1,67	2,50	5,00	6,67	6,67	1,890	0,114
K <sub>8</sub>	0,59	0,59	0,89	1,33	2,67	0,80	0,80	1	1,33	2,00	4,00	5,33	5,33	1,512	0,091
K <sub>9</sub>	0,44	0,44	0,67	1,00	2,00	0,60	0,60	0,75	1	1,50	3,00	4,00	4,00	1,134	0,068
K <sub>10</sub>	0,30	0,30	0,44	0,67	1,33	0,40	0,40	0,50	0,67	1	2,00	2,67	2,67	0,756	0,045
K <sub>11</sub>	0,15	0,15	0,22	0,33	0,67	0,20	0,20	0,25	0,33	0,50	1	1,33	1,33	0,378	0,023
K <sub>12</sub>	0,11	0,11	0,17	0,25	0,50	0,15	0,15	0,19	0,25	0,38	0,75	1	1,00	0,283	0,017
K <sub>13</sub>	0,11	0,11	0,17	0,25	0,50	0,15	0,15	0,19	0,25	0,38	0,75	1,00	1	0,283	0,017

Source: compiled by the authors

For convenient calculation, the weights were presented not in unit fractions but in percentage points:

$$K_{k3} = 15,3 * K_1 + 15,3 * K_2 + 10,2 * K_3 + 6,8 * K_4 + 3,4 * K_5 + 11,4 * K_6 + 11,4 * K_7 + 9,1 * K_8 + 6,8 * K_9 + 4,5 * K_{10} + 2,3 * K_{11} + 1,7 * K_{12} + 1,7 * K_{13}$$

So, 4 ranges of values can be singled out for each of the selected indicators (Table 4).

Table 4 Criteria scorecard of the new growth indicators for the hotel business in the hotel services market broken down according to groups

Indicators	Group 1	Group 2	Group 3	Group 4
K <sub>1</sub>	Growth of the market share is less than 1% (k < 1)	Growth of the market share is from 1% to 5% (k = 1-5)	Growth of the market share is from 5% to 10% (k = 5-10)	Growth of the market share is over 10% (k > 10)
K <sub>2</sub>	EBITDA growth rate is less than 5% (k < 5)	EBITDA growth rate is from 5% to 20% (k = 5-20)	EBITDA growth rate is from 20% to 50% (k = 20-50)	EBITDA growth rate is over 50% (k > 50)
K <sub>3</sub>	Costs for the marketing communications mix stagnate or are cut back; the image goes down or remains unchanged (k < 1)	Spending for the MCM is increased up to 10% per year; the image is on the rise of up to 5% per year (k = 1,2 - 1,5)	Spending for the MCM is increased within 10-25% per year; the image grows by 5-15% per year (k = 1,5 - 1,8)	The annual spending for the MCM is over 25% higher; the image is enhanced more than 15% per year (k > 1,8)
K <sub>4</sub>	The range of primary and extra services is not changed. The chain of branches is not expanded. Digital technologies are not implemented. (k = 1)	Primary services are not expanded. The quantity of extra services is up to 10% more. They start implementing digital technologies. The chain of branches is not expanded. (k = 1-5)	There is up to 10% expansion of primary services. The quantity of extra services is up to 20% more. Digital technologies are implemented extensively. They start expanding the chain (opening 1-2 branches). (k = 5-20)	There is a 10-30% expansion of primary services. The quantity of extra services goes up to 20-50% more. Digital technologies are implemented extensively. They are active in zooming the chain (with 3-5 branches opened). (k > 20)
K <sub>5</sub>	Innovations are used poorly, and no benchmarking is in use. (k = 1)	Innovations are implemented at a slow pace only, less than 5% per year. Benchmarking is not used. (k = 1-5)	Innovations are implemented at the level of leading companies up to 20% per year. They start using benchmarking. (k = 5-20)	The hotel facility features a high innovation initiative (from 20 to 50%). Best practices are studied and benchmarking is used extensively. (k > 20)
K <sub>6</sub>	The managers do not consider environmental questions. There is no environmental efficiency standard in place (ISO 14031 is ignored).	The environmental constituent starts gaining a certain status, although a formal one only. The environmental efficiency standard is	The managers realize the importance of environmental issues in the activity of the hotel facility. Environmental standards are developed within ISO	The questions of environmental protection, energy efficiency, and the use of "green" technologies are the managers' top priority.

Indicators	Group 1 (k = 0)	Group 2 developed. ISO 14031 is considered. (k = 1)	Group 3 14031; adjustments are made to the development strategy and programs. (k = 2)	Group 4 Both the ISO 14031 environmental efficiency standard and the BREEAM environmental standard are implemented. (k = 3)
K <sub>7</sub>	Energy saving technologies, environmentally friendly raw materials and supplies, control of waste and recycled materials, etc. are not used. (k = 0)	They start using energy saving technologies. There is still no control of exhaust products and level of waste. (k = 1)	Energy saving technologies, control of waste and recycled materials are used extensively. (k = 2)	The use of "green power generation", environmentally friendly raw materials and supplies, control of waste and recycled materials, etc. are implemented. (k = 3)
K <sub>8</sub>	The personnel turnover rate is high. There is no personnel policy. The employees' satisfaction is low. (k = 0)	The personnel turnover rate is medium. They start developing personnel policy. The employees' satisfaction is average, too. (k = 1)	The personnel turnover rate is low. Personnel policy has been developed and implemented. The hotel employees' satisfaction is high. (k = 2)	The personnel turnover rate is extremely low. The hotel has personnel policy and strategy developed and implemented for all categories of employees. The employees are the principal resource of the hotel, and their satisfaction is maximal. (k = 3)
K <sub>9</sub>	There is absolutely no loyalty of the personnel. Organizational culture sits at level 0. (k = 0)	There is little loyalty of the personnel. Organizational culture is at the basic level of development. (k = 1)	Loyalty of the personnel is at the high level. An efficient incentive system encompassing all categories of employees is up. There is formalized organizational culture in the form of corporate standards, codes of ethics, and values. (k = 2)	The personnel are committed to values and principles of the hotel facility. They believe themselves to be a part and parcel of the company. (k = 3)
K <sub>10</sub>	There is absolutely no customer loyalty. The customer database is formed in a random way; the work on formation and maintenance thereof is in the nascent condition. (k = 0)	There is little customer loyalty. The customer database is maintained diligently. There is a basic incentive program for repeat guests. (k = 1)	Customer loyalty is at the high level. There is an elaborate efficient incentive system for standing customers. The customer database keeps expanding. (k = 2)	Customer loyalty is high, the customers are committed to values and principles of the hotel facility. They believe themselves to be an integral part of the company. (k = 3)
K <sub>11</sub>	There is no policy of Diversity & Inclusion, toward both the personnel and customers. (k = 0)	The personnel policy is underway; it implies transparent career growth. The customer policy is equal for all categories of potential customers. (k = 1)	For all categories of the hotel employees, there are an HR strategy, an efficient system of career and personal growth. Customers' individual requirements and wishes are taken into account. (k = 2)	There is the Diversity & Inclusion strategy. Diversity and inclusiveness are observed in both personnel and customer policies.
K <sub>12</sub>	There is no possibility to adapt to environmental factors. (k = 0)	The minimum number of environmental factors are considered. (k = 1)	Adaptation to changes of the environment is effective. (k = 2)	The hotel facility is proactive (forward-looking) to changes of the environment.

Indicators	Group 1	Group 2	Group 3	Group 4
K <sub>13</sub>	There is no change management system. The development of information systems and business processes is at the basic level. (k = 0)	Standard and universal information technologies are implemented. Some business processes are streamlined. (k = 1)	Modern adapted information systems are in use. All business processes are streamlined. Change management is at the basic level. (k = 2)	Change management and Agile transformation based on the Scrum technology are implemented at the hotel facility. (k = 3)

Source: compiled by the authors

Further on, depending on their score in the developed hotel facilities assessment scale, the hotel facilities are ranked into classes characterizing their levels of possibilities and prospects of Agile business transformation. The scale includes 5 classes of enhancing Agile transformation based on the sustainable development concept; for ranking, the lower and higher limits of the groups are substituted in the above assessment formula (Table 5).

Table 5 Growth indicators for the hotel business in the hotel services market. Results of appraisal

Class	Score	Features
1	Over 521	The hotel facilities use modern information technologies, flexible (matrix) organizational structures of management, team work principle; they feature the high organizational culture and personnel involvement into the end result of the work. Here, the practice of change management and Agile transformation based on the Scrum technology is used in the hotel facilities' activity extensively.
2	217–520	These hotel facilities are distinguished by the high level of competitiveness and sustainable development. Here, they already use modern adapted information systems, and all business processes are streamlined. Change management is at the medium level. The access to information about their activity is quite open, and available resources are used efficiently. In general, all indicators (personnel loyalty, HR policy, etc.) are very close to the optimal values.
3	93–216	The basic level of change management and sustainable development is formed which is assessed as satisfactory. This can be caused by two factors: either managers do not consider this question a priority one, or they only start implementing standards of the process approach to change management. Extensive use of information systems, optimization of key business processes, formation of the database of loyal customers, and the good personnel policy can be traced.
4	55–92	Efficiency of the sustainable development system is very low. Quality management system standards are not observed, and the information about activity is not transparent. One can note some attempts to implement modern universal information systems, optimization of some business processes, as well as management of the customer database. There are no environmental efficiency standards.
5	Under 54	These hotel facilities (chains) are on the brink of survival or closing down. They are not stable, not adapted to changes of the environment. Their implementation of information systems is poor, there is no optimization of business processes, and little attention is paid to the personnel policy, working with customers, and environmental management.

Source: compiled by the authors

The shared principles behind this appraisal are the principle of objective and well-reasoned assessment, the target principle, those of consistency, centralization (availability of a person responsible for conducting the appraisal), and continuous improvement.

As can be seen from the above table, according to results of analyzing the possibilities and prospects of Agile transformation of the hotel business, one can conclude to which group a particular hotel facility or hotel chain belongs. Further on, this can serve as a tool for making relevant managerial decisions and reorganizing the hotel facility management.

The authors have tested out their model using the case of the region's hotel enterprises – those of the Republic of Mordovia. More specifically, it was the hotel facilities of Saransk city that were included into the scope.

The Republic of Mordovia becomes increasingly attractive for tourists to visit. In recent years, the 11% growth of the indicator

has been an objective confirmation of progress of the country's tourism. In 2020, Mordovia counted 85 collective accommodation facilities, with 65 of them being hotels and similar facilities, 20 – health-resort organizations and recreational organizations. In the market of Saransk city, there are two representatives of the international hotel chains. Inventory of the collective accommodation facilities amounted to 3210 rooms as of the year end (Monitoring of Development of the Information Society in the Russian Federation, 2019).

The collective accommodation facilities served the total of 136,6 thousand people during the year; 7,5% of the total count of guests were foreign citizens. In 2019, the income earned by the collective accommodation facilities rendering their services made 1020,6 million rubles (Monitoring of Development of the Information Society in the Russian Federation, 2019).

The volume of the hotel services market in the Republic of Mordovia plotted over time is shown in Figure 2 (compiled using the data of the official website of the Federal Tourism Agency of the RF).

Figure 2 Volume of the hotel services market in the Republic of Mordovia plotted over time, million rubles



Source: compiled by the authors according to the data of the Ministry of Economy, Trade, and Entrepreneurship of the Republic of Mordovia

It is clear from the diagram that the volume trend of the hotel services market in the Republic of Mordovia follows a repeated pattern. In 2016, a slight downturn of sales is observed in the hotel market lowering to 520,2 million rubles. In 2017, the volume of the market resumed growing to hit its maximum in 2018 at the size of 2764,1 million rubles. The increment is associated with the FIFA event held in Saransk. In 2019, sales of Mordovia's hotel market fell back to 567,2 million rubles.

Here is the range of primary services offered by the hotels of Saransk city, the Republic of Mordovia:

- Hotel services;
- Reception and accommodation of foreign and Russian tourists;
- Culture and entertainment, show, concert services;
- Catering services;
- Renting out rooms to organizations, etc. (see Table 6).

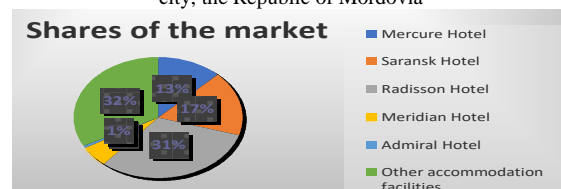
Table 6 Standard services offered by the hotels of Saransk city in the Republic of Mordovia

Basic rate, breakfast not included	Basic rate, breakfast included	Half-board rate	Full board rate
The rate includes: 1. Accommodation of the selected category Complementary options: 1. Wi-Fi 2. Using the swimming pool 3. Using the gym (from 07.00 till 00.00) 4. Guarded parking	The rate includes: 1. Accommodation of the selected category 2. Buffet breakfast Complementary options: 1. Wi-Fi 2. Using the swimming pool 3. Using the gym (from 07.00 till 00.00) 4. Guarded parking	The rate includes: 1. Accommodation of the selected category 2. Buffet breakfast 3. Buffet supper Complementary options: 1. Wi-Fi 2. Using the swimming pool 3. Using the gym (from 07.00 till 00.00) 4. Guarded parking	The rate includes: 1. Accommodation of the selected category 2. Buffet breakfast 3. Set lunch 4. Buffet supper Complementary options: 1. Wi-Fi 2. Using the swimming pool 3. Using the gym (from 07.00 till 00.00) 4. Guarded parking

Source: compiled by the authors according to the companies' data

Figure 3 shows the shares of the market held by the leading hotel facilities of Saransk city of the Republic of Mordovia. The total of sales for the industry (the 2019 data) was 347,4 million rubles (Monitoring of Development of the Information Society in the Russian Federation, 2019). Broken down to principal hotels individually, the sales volumes and respective shares in percentage points are as follows: Mercure Saransk Center – 43,4 million rubles – 12,5%; Saransk – 60,1 million rubles – 17,3%; Radisson Hotel & Congress Center Saransk (in 2019, the hotel was branded as Four Points by Sheraton) – 108,9 million rubles – 31,3%; Meridian – 19,1 million rubles – 5,5%; Admiral – 2,5 million rubles – 0,7%.

Figure 3 Market shares of the leading hotel facilities in Saransk city, the Republic of Mordovia

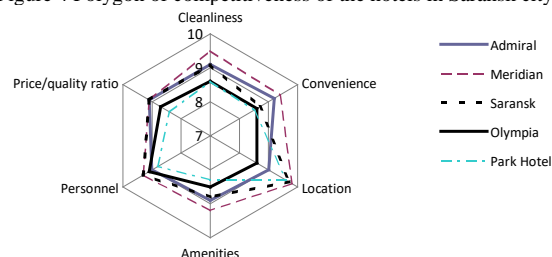


Source: compiled by the authors according to the companies' data

Thus, the hotel services market of Saransk city is represented by quite large hotels occupying considerable shares of the market each; rather pronounced competitor pressure is noted, too.

Polygon of competitiveness of the hotel facilities of Saransk city is given in Figure 4.

Figure 4 Polygon of competitiveness of the hotels in Saransk city



Source: compiled by the authors according to the companies' data

According to the data of calculating the index of competitiveness, the rating of all hotels of Saransk city has been compiled (Table 7). The indicator characterizing hotel employees' satisfaction and stability is quite high in the city hotels.

Table 7 Hotels in Saransk city. Index of Competitiveness

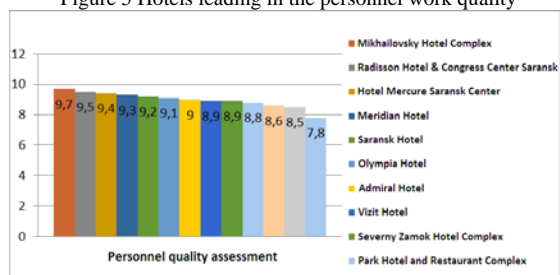
Hotels	Index of Competitiveness
Meridian Hotel	9,3
Radisson Hotel & Congress Center Saransk	9,4
Hotel Mercure Saransk Center	9,5
Admiral Hotel	9
Hotel and Restaurant Complex Park Hotel	8,6
Mirta Hotel	7,7
Olympia Hotel	8,7
Saransk Hotel	9
Severny Zamok Hotel Complex	8,7
Hotel Complex Mikhailovsky	9
Sura Hotel Complex	9,1
Rassvet Hotel	8,4
Apartment on Lesnaya Str.	9,3
Apartment on Rossiyskoy Armii Avenue	10
Apartment on Popova Str.	9,4
Apartment on Soviet Square	9,6
Rosemary Inn (mini-hotel)	9,3
Raiskoe Mestechko Guest House	8,3
Vastoma Mini-Hotel	8,8

Source: compiled by the authors according to the companies' data

As the greater part of the city's collective accommodation facilities score high on the personnel work quality, from 8 to 10

points (Booking.com), it makes sense singling out 3 principal zones of the said hotels. The first one is the high price segment zone, featuring the high service level and best indicators in assessment of work of their personnel (all scores are over 8,8). The second one is the medium price segment zone, with the high- and medium-level service. In this zone, as for personnel work quality points, the scatter band is the widest (ranging from 8,2 to 9,9 points). The third zone is the low price segment one (at under 1000 rubles per night); it has the medium service level and rather good scores in the personnel work (8,5 – 9,5 points). Figure 5 shows the hotels leading in their personnel work quality.

Figure 5 Hotels leading in the personnel work quality



Source: compiled by the authors according to the data of the Booking.com website

The indicator characterizing the proportion of loyal and committed customers of hotel facilities relies on assessing their satisfaction first of all. Based on customer reviews, various online booking websites offer a 10-point scale rating of hotels. Let scores of the hotels of Saransk city on the most well-known websites – booking.com, tripadvisor.ru, and 101hotels.ru – be considered (Table 8).

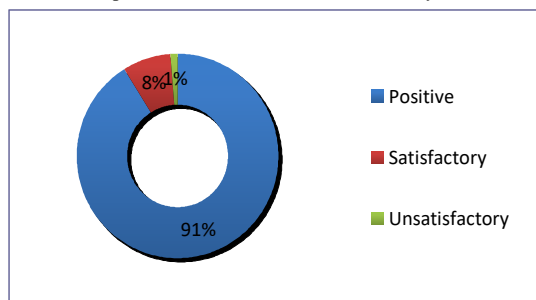
Table 8 Scores of the hotels of Saransk city on online booking websites

Website	Radisson Hotel & Congress Center Saransk	Mercure Saransk Center	Olympia Hotel	Admiral Hotel	Meridian Hotel	Saransk Hotel	Park Hotel
101Hotels.ru (0-10)	9,2	9,3	8,9	9,1	9,4	9,1	8,8
Booking.com (0-10)	9,0	9,1	8,7	9	9,3	9	8,3
Tripadvisor.ru (0-5)	5,0	4,9	4	4,5	4,5	3,5	3,1
Oteleus.ru (0-5)	4,8	4,9	4,2	4,5	4,6	4,3	4,0
Average score	7,0	7,1	6,45	6,77	6,95	6,47	6,05

Source: compiled by the authors according to the data of booking websites

The hotels of the city have many positive reviews and acknowledgements. As for negative reviews, there are about 9% of them (Figure 6).

Figure 6 The structure of reviews on the Booking.com web portal about the hotels of Saransk city

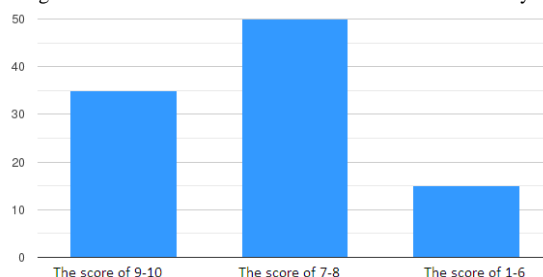


Source: compiled by the authors according to the data of the Booking.com website

To find out the customers' satisfaction level, a questionnaire survey of consumers of the city's hotel services was conducted.

The customers were asked the question: "How likely would it be for you to recommend the city's hotels to your friends?" According to their answers, the respondents were subdivided into three groups (see Figure 7).

Figure 7 Answers of customers of the hotels in Saransk city



Source: compiled by the authors according to findings of the research

Those estimating the likelihood at 9-10 are loyal customers of a hotel facility who are ready to recommend it to their friends; the percentage of such answers was 35%.

The scores of 7-8 were marked by customers who were satisfied with their hotels in general but had no wish to recommend them to others; there were 50% of such respondents.

The customers who gave 1-6 points were not satisfied with their hotel facilities, will not recommend them, and might be looking for an alternative. Their number was 15%.

$$NPS = \% \text{ of "advocates"} - \% \text{ of "critics"} = (35/100) - (15/100) = 0,5 = 50\%$$

The good indicator on loyalty is considered to be the figure of 50% and higher, so the loyalty of customers of the hotels in Saransk city is quite high.

The coefficient characterizing environmental efficiency indicators of management is associated with hotel management methods involving "green" technologies. The city's leading hotels, namely, Hotel Mercure Saransk Center, and Radisson Hotel & Congress Center Saransk, emphasize saving water. For that, they have a number of methods implemented: water-saving shower heads, more efficient washing machines, reuse of water, etc. Many hotels do not use disposable plastic dishes. Alongside this, the city's hotels offer their guests to opt out of having their bed clothes, bathrobes, and slippers changed unless it is absolutely necessary, and so on. The hotels also encourage opting out of daily room cleaning at least sometimes; as a compensation, extra points in loyalty program, discounts for the hotel services, etc. can be offered to these guests (Kabushkin, 2017; Ponkratov et al., 2016; Lapyghin, 2017; Yankina, 2018).

To build the proprietary model of growth indicators of Agile development transformation for the hotel business of the Republic of Mordovia (FIESD), let the indicators of competitiveness of the regions' hotels and scores in the criteria of the new growth indicators of the hotel business be presented as a table. Based on statistic data and the conducted analysis of the hotel facilities, let rating of the criteria of the new growth indicators for the hotel business in the hotel services market of Saransk city be compiled (Table 9).

Table 9 Indicators for building the proprietary model of growth indicators of Agile development transformation for the hotel business of the Republic of Mordovia (FIESD)

Names of the collective accommodation facilities	Scores in the criteria of the new growth indicators	Index of competitiveness
Meridian Hotel	290	9,3
Radisson Hotel & Congress Center Saransk	382	9,4
Hotel Mercure Saransk Center	387	9,5
Admiral Hotel	255	9
Park Hotel and Restaurant Complex	300	8,6

Names of the collective accommodation facilities	Scores in the criteria of the new growth indicators	Index of competitiveness
Mirta Hotel	175	7,7
Olympia Hotel	180	8,7
Saransk Hotel	180	9
Severnoy Zamok Hotel Complex	180	8,7
Hotel Complex Mikhailovsky	162	9
Sura Hotel Complex	220	9,1
Rassvet Hotel	76	8,4
Apartment on Lesnaya Str.	170	9,3
Apartment on Rossiyskoy Armii Avenue	190	10
Apartment on Popova Str.	170	9,4
Apartment on Soviet Square	180	9,6
Rosemary Inn (mini-hotel)	50	9,3
Raiskoe Mestechko Guest House	150	8,3
Vastoma Mini-Hotel	100	8,8

Source: compiled by the authors according to findings of the research

Based on the analytic hierarchy technique and the conducted study of the hotel facilities of the Republic of Mordovia, let scores of criteria of the new growth indicators for the hotel business in the hotel services market be rated (Table 10).

Table 10 Hotels of Saransk city. Rated scores of criteria associated with the new growth indicators for the hotel business in the hotel services market for the latest 5 years

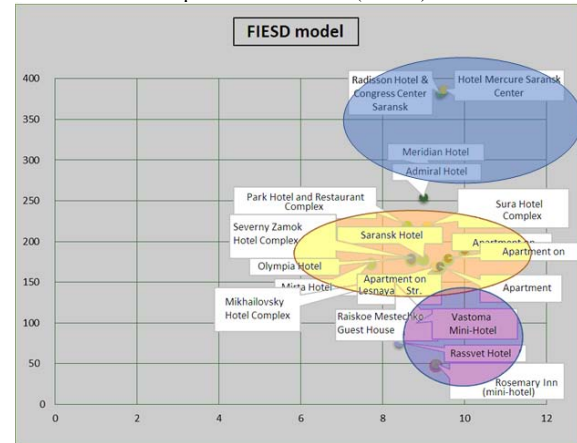
Indicators	Hotels																		
	Meridian	Radisson Hotel	Mercure	Admiral	Park Hotel	Mirta	Olympia	Saransk	Severnoy Zamok	Mikhailovsky	Sura	Rassvet	Appt. on Lesnaya Str.	Appt. on Rossiyskoy Armii Avenue	Appt. on Popova Str.	Appt. on Soviet Square	Rosemary Inn	Raiskoe Mestechko Guest House	Vastoma
1. The hotel facilities' economic and competitive standing in the hotel services market for the latest 5 years																			
k1	10	20	20	15	15	13	10	10	10	10	16	10	10	10	10	10	6	12	7
k2	34	34	34	10	34	18	10	14	18	10	10	10	18	10	10	10	2	20	10
k3	20	27	27	14	20	12	14	10	10	14	14	10	14	10	14	14	3	7	7
k4	18	28	28	18	18	14	18	14	10	18	18	14	18	14	14	18	4	12	8
k5	10	20	20	15	15	13	10	10	10	10	16	10	10	10	10	10	6	12	7
2. Environmental friendliness and social development of the hotel facilities																			
k6	27	27	27	23	27	17	13	17	17	17	23	10	17	13	17	13	5	5	14
k7	23	28	28	27	23	13	17	13	13	17	17	13	17	13	17	13	5	5	14
k8	21	31	31	26	21	19	21	21	22	13	26	19	19	19	21	21	5	5	11
k9	25	35	35	25	25	10	15	15	8	13	4	10	10	10	15	15	4	4	11
k10	22	32	32	32	22	21	22	22	21	21	9	21	22	21	22	22	4	4	13
k11	20	25	25	30	25	10	10	10	10	20	4	10	10	10	10	10	4	4	9
3. Strategic flexibility of the hotel facilities and their level of adaptation to environmental factors																			
k12	40	45	50	13	40	9	10	10	10	9	3	9	13	9	10	10	3	3	7
k13	20	30	30	12	20	9	10	10	10	9	2	9	12	9	10	10	2	2	9
TOTAL:	290	382	387	255	300	175	180	180	180	162	220	76	170	190	170	180	50	150	100

Source: compiled by the authors according to findings of the research

The FIESD matrix of development of the region's hotel facilities has to be plotted for consistent representation of the quality of growth indicators. It implies quantitative correlation of Agile transformation indicators and the competitiveness level of the region's hotels.

Based on the table data, let the proprietary model of growth indicators of Agile development transformation be built for the hotel business of the Republic of Mordovia (FIESD) (see Fig. 8).

Figure 8 Proprietary model of growth indicators of Agile development transformation for the hotel business in the Republic of Mordovia (FIESD)



Source: compiled by the authors according to findings of the research

Results of building of the FIESD model have shown that the hotels of the Republic of Mordovia can be subdivided into 3 principal classes according to results of appraisal of the hotel business growth indicators and competitiveness indices: classes 2, 3, and 4. None of the region's hotel facilities belongs to hotel class 1 (scoring over 521 points).

Class 2 hotels (with 217-520 points) are Radisson Hotel & Congress Center Saransk, Hotel Mercure Saransk Center, Meridian Hotel, Hotel and Restaurant Complex Park Hotel, and some others; they are distinguished by the high level of competitiveness and sustainable development. These hotels use modern adapted information systems and streamline all their business processes. Their change management is at the medium level. On balance, all indicators (employees' loyalty, personnel policy, etc.) are very close to the optimum values.

Class 3 hotels (93-216 points) include Olympia Hotel, Saransk Hotel, Mirta Hotel, and others. For them, the basic level of change management and sustainable development is characteristic which is also evaluated as satisfactory. Here, one can trace active use of information systems, optimization of key business processes, an established base of loyal customers, and good personnel policy.

The hotels of class 4 (those having 55-92 points) are Vastoma Mini-Hotel and Rassvet Hotel. They are distinguished by the low efficiency of sustainable development system. Quality management system standards are not adhered to, and the information about their activity is not transparent. One can note some attempts to implement modern universal information systems and to streamline some business processes. Environmental efficiency standards are not in place at class 4 hotels.

Only one hotel facility of the above, Rosemary Inn, scored less than 54 points (so, it belongs to class 5). This hotel is poorly adapted to changes of the environment; it lacks implementation of information systems, streamlining of business processes. Here, little attention is paid to personnel policy, working with customers, and environmental management, too.



## 5 Conclusion

Thus, the authors of the paper have developed the technique of analytic hierarchy for integrated appraisal of possibilities and prospects of Agile transformation of the hotel business within the concept of sustainable development. Within the research, analysis of the five-year progress of Russia's hotel industry market has been conducted; in terms of development of the hotel business, methodological approaches have been identified based on the use of advanced methods, technologies and tools of management adopted by the hotel industry. Alongside this, the authors' proprietary model of development of the hotel business (FIESD) has been developed. Factors affecting the ability of the hotel facilities, both directly and indirectly, to adapt to the current challenges and conduct Agile transformation of their business have been evaluated. The authors have also conducted a market study of hotel services of the Republic of Mordovia, based on which they have designed their proprietary model of growth indicators for Agile development transformation of the hotel business in the Republic of Mordovia (FIESD).

Oriented to the modern, adaptive, and innovation development of the hotel business, this model (FIESD) has allowed highlighting problem areas and growth points in the development of the hotel enterprises of the Republic of Mordovia.

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**Primary Paper Section:** A

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## BODY IMAGE DIFFERENCES AMONG RUSSIAN GIRLS IN EARLY AND LATE ADOLESCENCE

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**Abstract:** We present the results of a study of body image of Russian girls in early and late adolescence. We have analyzed the data from 129 Russian girls in early adolescence (13-14 years old) and late adolescence (19-20 years old). Most girls in early adolescence have a low degree of body acceptance. Body functionality and positive body image are correlated both with external and internal body standards in this group. We have found age dynamics in the positive body image since body functionality of the body increases with age.

**Keywords:** body image, satisfaction with the body, body functionality, adolescent girls, VOPAS, BSQ.

### 1 Introduction

The issue of body image is one of the most actual and controversial themes in the modern studies of mind health. On the one hand, the body is perceived as an object of influence and manipulation, needing to be shaped to a certain ideal, broadcasted by the media. On the other hand, in modern society the gap between the body and the mind is obviously growing.

Clinical psychologists define a person's body image as a mental entity through which various body processes (the processes of an organism functioning recognized by human consciousness) make up the body experience of a person (Vasilenko, 2011). Studies of a body image in Russia are conducted mainly within the clinical psychology framework, leaving behind normal psychosomatic development in different periods of ontogenesis (Thostov, 2002; Nikolaeva & Arina, 1996).

We can assume that a body image is a product of a person's psychosomatic development. In our opinion, the body image is a product of the reflection of one's body in one's mind.

Body image is a phenomenon in which formation and functioning socio-cultural factors play an important role. Nowadays researchers note the increased attention and an extreme degree of dissatisfaction with one's appearance in people without physical defects and mental abnormalities. The concept of «normative discontent» by one's own appearance was introduced in the scientific literature in 2009 (Rumsey & Harcourt, 2009). Now normative discontent is inherent to many people. This makes a background for the studies of socio-cultural factors and socio-economic stereotypes influencing the self-esteem of one's appearance and body (Swami & Fernheim, 2007; Herbozo, 2004).

In this context the study of body image among adolescent girls in early and late adolescence could not only expand our understanding of this phenomenon development, but also to contribute to the research of adolescent's mind health.

### 2 Literature Review

Since the issue came into discussion in the XX century the most relevant was the viewpoint that self-esteem, self-respect and body image most definitely determine each other during puberty, and most teenagers are dissatisfied with their body and appearance (Swami & Fernheim, 2007; Herbozo, 2004).

However, in recent decades this problem has affected even younger people. For instance, the American non-profit organization Common Sense Media reported that about 30% of 5-6 year-old children know about the diets and about 25 % child

has experienced some kind of restrictive eating behavior (Children, Teens, Media ... Brief, 2015; Cohena et al., 2017).

New interesting data could be obtained by the cross-cultural studies. For example, K. Holmqvist and colleagues (2007) notes that Argentine and Swedish adolescents demonstrate the same beauty standard and approximately equal level of body acceptance.

Not all respondents consider thinness to be the main constituent of a beauty standard. For example, despite an increase of overweight and obesity among African-American adults, especially among women, there is less dissatisfaction with the body in this population (Rucker & Cash, 1992; Ofose et al., 1998).

However, for other nationalities and races low weight is considered to be health attribute. Self-esteem, well-being and even mental and physical health of young people directly depend on them. In this case culture creates a mindset for a person to be thin and slender. It is assumed that a person whose body does not fit into the standards of beauty does not have self-control. Restrictive eating behavior becomes a way to be accepted in the reference group. T. O. Novikova and colleagues (2015) show that girls with a restrictive type of eating behavior are characterized by self-criticism and negative self-attitude, which determine the dissatisfaction with their own body. To gain confidence in their bodily attractiveness they try to gain positive evaluation and approval of others. Their body image is opposed to the ideal body image. For them to be thin is to achieve success and love. In their self-presentation they are guided by irrational attitudes. The girls with a restrictive type of eating behavior have a higher intensity of psychological defense mechanisms, which can indicate their greater emotional tension, as well as low effectiveness of coping strategies in stress.

For instance depression and anxiety were obtained to be more common among girls experiencing diets and other forms of figure correction, compared with girls not involved in this activity. As well as young boys engaged in bodybuilding demonstrate in the most severity of depression and anxiety symptoms (Kholmogorova & Dadeko, 2010).

The formation of the body image is influenced by many factors: the family environment, special features or appearance disadvantages, peer relations, media and advertising, the fashion industry and cultural traditions. And nowadays the social networks have an increasing influence on the body image, especially when adolescents publish and view photos of themselves and others on social networks (Cohena et al., 2017).

In our opinion, body acceptance and the positive body image may be considered as personal resources. In some cases, body acceptance performs as a «buffer» protecting against negative situations and their consequences (Klimusheva et al., 2014).

Also the positive body image has not only cross-cultural but also gender differences. Usually the girls demonstrate less body acceptance compared to boys. But when the person is more focused not on the appearance of the body, but on body functionality and he or she more flexibly defines the «beautiful» body and has more positive body image (Holmqvist et al., 2007). The body image formation starts from the birth of a person. In early and preschool childhood body image formation is influenced by role models, self-comparing with other people, normative body images of parents or other adults. At the younger school age children demonstrate motivated distortions in the perception of their own bodies, connected with the «standard of thinness», which is becoming more widespread. By adolescence, the situation in many cases is exacerbated and adolescent girls are dissatisfied with their body, which may also bring them to anorexia and other eating disorders.

American and European studies of body image issues focus not only on adolescents with eating disorders but also study

«ordinary» adolescents (Zhou et al., 2020; Souza et al., 2019). However, in the Russia such studies only begin to appear, which is due, inter alia, to the lack of diagnostic tools.

### 3 Research Methodology Framework

The purpose of this study was to analyze the subjective characteristics of the body image of girls at different stages of psychosomatic development: in their early (13-14 year-olds) and in late (19-20 year-olds) adolescence.

Our tasks were: 1) to obtain the specifics of the body image among adolescent girls in early adolescence; 2) to obtain the specifics of the body image among adolescent girls in late adolescence; 3) to compare the body image of girls aged 13-14 and girls aged 19-20.

Our goals were achieved through a survey-based study including 129 participants conducted between August 2020 and April 2021.

#### 3.1 Sample

All in all, 129 adolescent girls were in the focus of our study of the body image among adolescents. 60 girls in their early adolescence (girls during puberty average age 13.5 (SD = .9)) and 69 girls in later adolescence (girls at the time of transition from adolescence to early adulthood average age 19.3 (SD = 1.9)) participated in our study. Such age groups were chosen because of the specifics of the pubertal period, the lower border of which is physiological, and the upper one is much more difficult to define and is connected mostly with social rather than physiological factors. All girls in early adolescence were schools students, older girls were university students. All the participants were living in the Kemerovo Region in Russia. 100% were from urban families from the cities of Kemerovo. The respondents (with the written parents' permission) were recruited and compensated through the local Research community. The respondents were verbally asked for the agreement to participate in the study; they were informed that they could quite it at any moment. Also we let the participants to know the procedure and purpose of the study. There was no time limitation.

#### 3.2 Measures

1. *Body satisfaction*, *Body functionality* (positive appraisal for body power and body flexibility etc.) and *Compliance with external standards* (the degree in which in participant's opinion participant's body fits social standards in participant's opinion) and *Compliance with internal standards* (the degree in which in participant's opinion participant's body fits participant's own standards) were assessed by «Body Image Questionnaire». BIQ was developed by K. Belogai and I. Morozova (2017).
2. *Positive body image*, *Body functionality*, *Activity level* (high, median or low activity level indicated by the participant) and *Positive constitution appraisal* were assessed by «Body characteristics inventory» which was developed by K. Belogai (2014) based on Semantic differential by C. E. Osgood (1952).
3. *Satisfaction with the body* was assessed by the «Life Dynamics of Satisfaction with the External Image» by E. Belugina (2003). Girls in early adolescence indicated the degree of body satisfaction when they were 5 and 10 years old and at the present time using a ten-point scale, girls in the late adolescence also indicated body satisfaction when they were 15 years old.
4. *Self-respect* and *self-blame* were assessed by the «Self-attitude questionnaire» by S. R. Pantileev (1993). A questionnaire contains 110 statements about attitudes to one's personal qualities.
5. *Basic characteristics of height, weight and body image characteristics* were assessed through a 15-minute, face-to-face, semi-structured interview. It was conducted to gather data on the basic characteristics of height, weight (for calculating the body mass index (BMI)), person's attitude toward the body (including the desire to change something

in the body), the attitude towards the body from important people (mother, father) and lifestyle (diets, restrictive eating behavior, sports or dancing). They were also asked to indicate the compliance of their bodies with their external and internal standards.

6. *Negative Weight and Shape* and *Positive General Appearance* were assessed by *Verbal Commentary on Physical Appearance Scale (VCOPAS)* (Herbozo & Thompson, 2006). With the author's permission VCOPAS was translated into Russian. VCOPAS allows determining the degree of surrounding people's comments on a person's body image. We used version D, which includes 24 comments. Participants estimated the frequency of comments heard over the past two years and their emotional reactions to them. During the validation of the questionnaire for the Russian-speaking participants, we have found that of the three VCOPAS scales the Russian-speaking women do not have the «Positive Weight and Shape», many items do not work, and some are perceived ambivalently. As a result, we used two scales: «Negative Weight and Shape» and «Positive General Appearance».

We have used the translated measures only in a group of girls aged 19-20, since the authors provide the information that they were fashioned for the older adolescents.

#### 3.3 Data Analyses

We used STATISTICA 6.0 (descriptive statistics, t-test, correlation analysis and ANOVA to analyze the obtained data.

### 4 Results

#### 4.1 The Body Image of Russian Girls Aged 13-14

Descriptive statistics for a group of girls in early adolescence are presented in Table 1.

Table 1 Descriptive statistics for a group of adolescent girls aged 13-14 (authors' data)

Parameters	Average	Minimum	Maximum	Variability
Weight	51.77	40	71	5.31
Height	163.42	153	175	5.14
BMI	19.35	15.8	25.2	1.5
Compliance with external standards (%)	60.1	.1	99	23.49
Compliance with internal standards (%)	63.23	0	100	24.59
Subjective characteristics «Body characteristics inventory»				
Positive body image	4.10	-15.00	13.00	6.59
Body functionality	3.25	-14.00	18.00	7.32
Activity level	1.60	-9.00	11.00	4.28
Positive constitution appraisal	-.62	-9.00	7.00	4.72
Subjective characteristics				
Satisfaction with the body at the age of 5	8.82	1.00	10.00	2.01
Satisfaction with the body at the age of 10	7.38	1.00	10.00	2.44
Satisfaction with the body at present time	5.67	1.00	10.00	2.53

Source: the authors

The girls' compliance with internal standards positively correlates with the compliance with external standards ( $r = .70$ ,  $p \leq .01$ ).

Also we have found a number of interrelations between the parameters in the group of girls aged 13-14 (Table 2).

Table 2 Correlations between the parameters in the group of girls aged 13-14 ( $p \leq 0,01$ ) (authors' data)

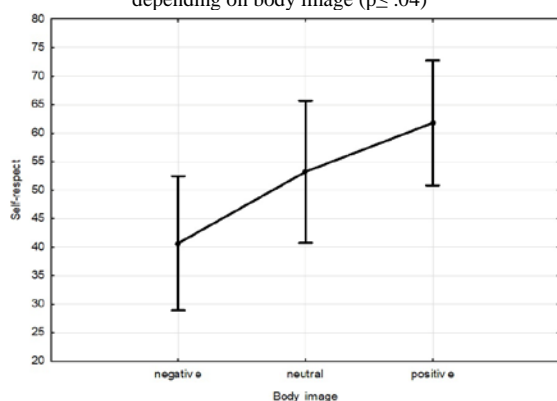
Parameters	Compliance with internal standards	Compliance with external standards
Positive body image	.59	.58
Body functionality	.42	.36
Positive constitution appraisal	.47	.43
Satisfaction with the body at the age of 5	-	-
Satisfaction with the body at the age of 10	.35	.37
Satisfaction with the body at present time	.55	.38

Source: the authors

Positive body image and positive higher body functionality positively correlate with both compliances with internal and external standards ( $p \leq 0,01$ ). The degree of satisfaction with the body at a younger school age and at the present moment also positively correlate with the compliance with internal and external standards ( $p \leq 0,01$ ).

One-way ANOVA in a group of early adolescence helped to obtain that the attitude towards the body affects self-respect (Figure 1).

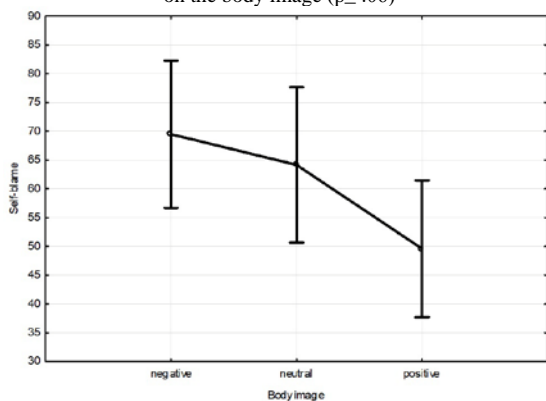
Figure 1 Self-respect among girls in early adolescence depending on body image ( $p \leq .04$ )



Source: authors' data

Also we have found the level of self-blame to be changing in three groups in the opposite way (Figure 2). The data were significant with the  $p \leq .06$ . As we can see girls with the positive body image have less self-blame.

Figure 2 Self-blame among girls in early adolescence depending on the body image ( $p \leq .06$ )



Source: authors' data

#### 4.2 The Body Image of Russian Girls Aged 19-20

Descriptive statistics for a group of girls aged 19-20 years are given in Table 3. As we can see the descriptive statistics of the girls in late adolescence is similar to the girls in early adolescence.

Table 3 Descriptive statistics for a group of girls aged 19-20

Parameters	Average	Minimum	Maximum	Variability
Weight	57.85	41.00	90.00	10.22
Height	165.54	151.00	178.00	7.13
BMI	21.11	15.62	31.14	3.41
Compliance with external standards (%)	54.53	10.00	90.00	20.65
Compliance with internal standards (%)	64.06	.00	100.00	23.38
Subjective characteristics «Body characteristics inventory»				
Positive body image	5.85	-14.00	15.00	7.15
Body functionality	6.65	-11.00	20.00	8.25
Activity level	1.85	-8.00	10.00	5.11
Positive constitution appraisal	-.29	-9.00	8.00	4.52
Subjective characteristics				
Satisfaction with the body at the age of 5	9.18	5.00	10.00	1.45
Satisfaction with the body at the age of 10	7.79	1.00	10.00	2.16
Satisfaction with the body at the age of 15	5.79	1.00	10.00	2.46
Satisfaction with the body at present time	7.09	2.00	10.00	2.14
Subjective characteristics «Body inventory questionnaire»				
Positive body image	3.08	-14.00	17.00	6.78
Positive constitution appraisal	6.23	-16.00	18.00	7.35
Body functionality	5.61	-10.00	18.00	7.67

Source: the authors

We have found correlations between the frequency of people's comments about participant's appearance and non-fitting to the external standards, as well as between emotional reaction to comments and concerns about body shapes and non-fitting to the external standards. The more, according to the girl, her body fits to the existing standards, the lesser she indicates people's comments about her appearance and the more positive reaction to them she demonstrates and also the lower concern about the body shapes she has. Significant correlations ( $p \leq .01$ ) between these parameters and their own internal standards were not found (Table 4). Moreover, among girls aged 19-20 years the body compliance with the internal standards correlates positively with the body compliance with external standards ( $r = .52$ , at  $p \leq .01$ ).

Table 4 Correlations between the VCOPAS scales, the BSQ scales and the body's compliance with external / internal standards ( $p \leq .01$ )

	Compliance with external standards	Compliance with internal standards
Frequency of comments (VCOPAS)	-.40	-
Emotional reaction (VCOPAS)	-.33	-
Concern with body shapes (BSQ)	-.39	-

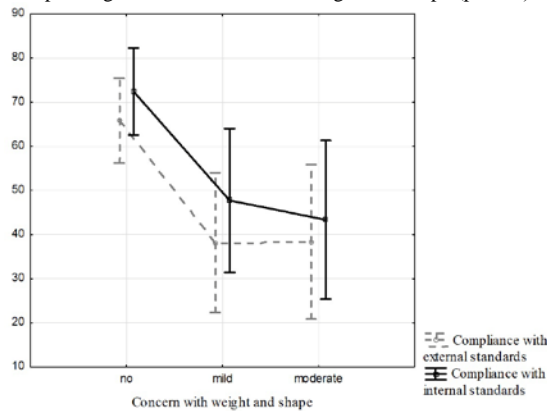
Source: the authors

We found correlations of the VCOPAS scales and BSQ scales with the BMI and height. The girls with a higher body mass index indicate a greater number of people's comments about the appearance ( $p \leq .01$ ). All the mentioned scales, except for the frequency of additional people's comments about participant's appearance, are lower for higher girls ( $p \leq .01$ ).

Depending on the degree of concern for their weight the girls were divided into three groups: girls demonstrating no concern for weight and shape, girls demonstrating mild concern with weight and shape and girls with moderate concern with weight and shape.

One-way ANOVA showed that body image parameters significantly differ in these groups. That is to say, for our sample the compliance with external and internal standards was found to depend on the concern about weight and shape (Fig. 3).

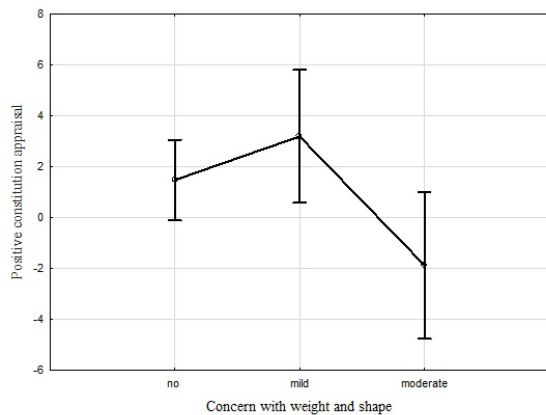
Figure 3 Compliance with external and internal standards, depending on the concern about weight and shape ( $p \leq .01$ )



Source: authors' data

Also positive constitution appraisal was found to depend on the degree of weight and shape concern (Fig. 4). The data were significant with the  $p \leq .03$ . As we can see girls with the moderate weight and shape concern have less positive constitution appraisal.

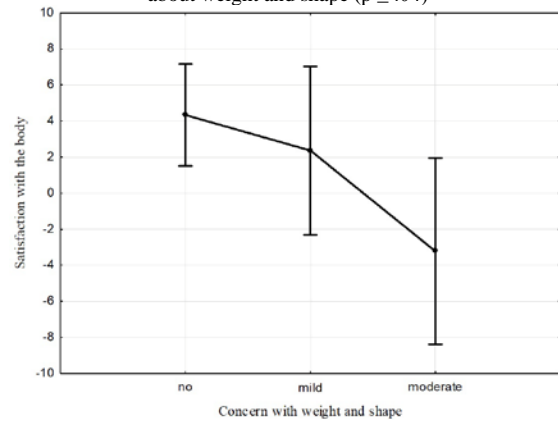
Figure 4 Positive constitution appraisal depending on the degree of weight and shape concern ( $p \leq .03$ )



Source: authors' data

Satisfaction with the body was found to depend on the degree of weight and shape concern (Fig. 5). The data were significant with the  $p \leq .04$ . As we can see girls with the moderate weight and shape concern have less satisfaction with the body.

Figure 5 Satisfaction with the body, depending on the concern about weight and shape ( $p \leq .04$ )

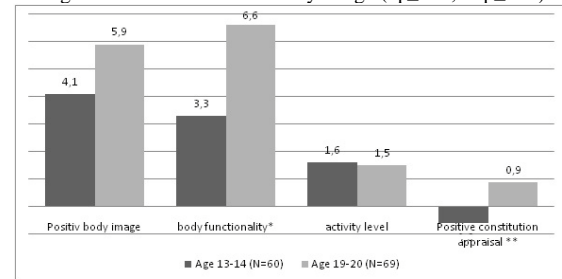


Source: authors' data

### 4.3 Comparison of the Body Image of Girls Aged 13-14 and Girls Aged 19-20

Body functionality is significantly higher in late adolescence compared to early adolescence (Figure 6). Activity level and positive body image differ insignificantly. Differences in the evaluation of the physique are significant only with  $p \leq .06$ .

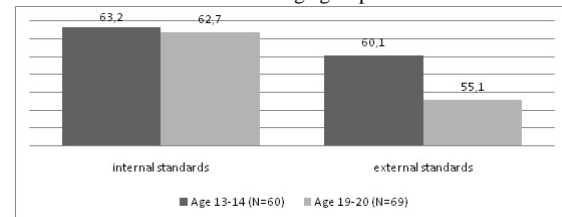
Figure 6 Parameters of the body image ( $*p \leq .02$ ;  $**p \leq .06$ )



Source: authors' data

As we see in both groups satisfaction with the body is low. Compliance with external and internal standards has no significant differences between age groups (Figure 7). As we see girls in late adolescence are little less influenced by external standards.

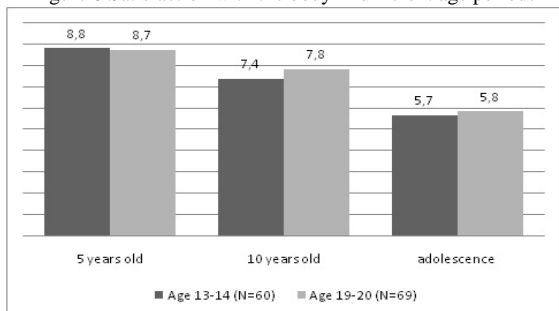
Figure 7 Compliance with external and internal standards in different age groups



Source: authors' data

We also noted the higher satisfaction with their body was retrospectively in childhood, the higher the degree of body acceptance at the present moment the girl has. Satisfaction with the body within different age period (5, 10 and 15 years old) also has no significant differences between age groups (Figure 8).

Figure 8 Satisfaction with the body in different age periods



Source: authors' data

We also found the correlation between the satisfaction with the body and the scales of the «Body characteristics inventory» both in early and late adolescence. Correlation matrices for 13-14 aged girls are presented in Table 6. The data were significant with the  $p \leq .01$ .

Table 6 Correlations between the satisfaction with the body and the scales of the «Body characteristics inventory» for 13-14 aged girls ( $p \leq .01$ )

BCI	Satisfaction with the body		
	At 5	At 10	At present time
Positive body image	.32	.38	.59
Activity level			.59
Body functionality	.38		

Source: the authors

As we see positive body image is correlated with the satisfaction with the body at age of 5 and 10 and in the present time. Also body functionality is correlated with satisfaction with the body at age of 5 in this group. For the girls of 19-20 years old we have found more correlations. Correlation matrices for 19-20 aged girls are presented in Table 7. The data were significant with the  $p \leq .05$ .

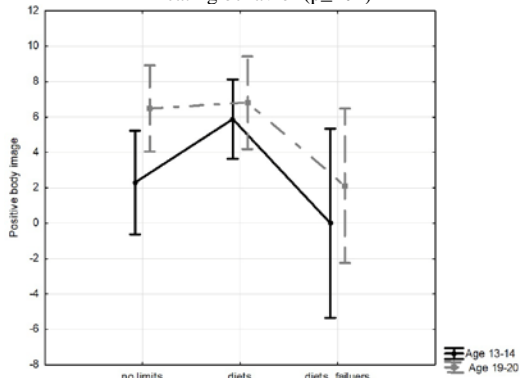
Table 7 Correlations between the satisfaction with the body and the scales of the «Body characteristics inventory» for 19-20 aged girls ( $p \leq .05$ )

BCI	Satisfaction with the body			
	At 5	At 10	At 15	At present time
Positive body image	.45	.49	.53	.55
Activity level	.36	.38	.52	.5
Body functionality	.39	.37	.39	

Source: the authors

ANOVA made it possible to test the dependence of body image parameters on age and eating behavior (Fig. 9, 10, 11). Three groups of girls with different eating habits were identified. Positive body image depends on age, and eating behavior is pictured at the Figure 9.

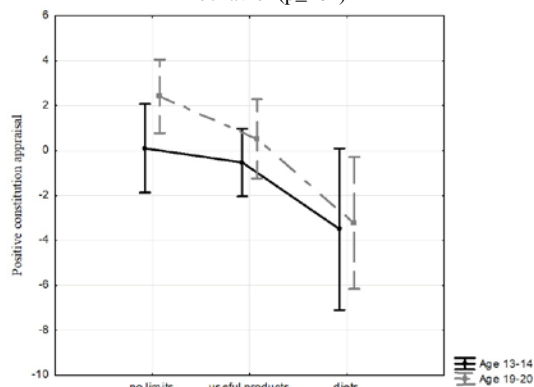
Figure 9 Positive body image depending on age ( $p \leq .09$ ) and eating behavior ( $p \leq .02$ )



Source: authors' data

The data were significant with the  $p \leq .02$ . As we can see girls of both groups experiencing diets and failures have less positive body image. Positive constitution appraisal also depends on eating behavior. The data are pictured at the Figure 10.

Figure 10 Positive constitution appraisal depending on eating behavior ( $p \leq .02$ )



Source: authors' data

5 Discussion

5.1 The Body Image of Russian Girls Aged 13-14

The group of girls in early adolescence is extremely heterogeneous in terms of compliance with external and internal standards ( $M = 60.1$  and  $63.23$  appropriately). So, they follow their own ideals somewhat higher. Five percent of girls indicate their body's compliance with internal standards below 10%, which, in our opinion, indicates that this group has a high risk of eating disorders. At present, dissatisfaction with the body is considered to be one of the most reliable and consistent predictors of food pathology in adolescents and early adulthood (Jacobi & Fittig, 2010).

This group demonstrates the lowest degree of satisfaction with their body at the present time (compared with retrospective assessments of the body in preschool and junior school age). And E. Meland and colleagues (2007) postulated that with age the number of reports about the negative image of the body was increasing.

The indicators of positive body image, activity level, body functionality among 13-14 aged girls are not high. According to our data 72% of girls would like to change something in their body. More often they are talking about the desire to change the waist, height (8% of teenagers would like to be taller) and weight (12% of teenagers would like to lose weight). 28% of respondents would like to change «everything» in their bodies. The study of teenagers aged 12-18 shows that weight and indicators of psychological well-being are associated with perceived body image dissatisfaction (PBID) (Kostanski & Gullone, 1998).

According to our study, self-respect was maximal in the group of 13-14 aged girls with a positive body image. The girls with a negative body image demonstrated the lowest self-respect. The self-blame also depends on the body image; it is much higher among girls with a negative body image. Our study is consistent with other researchers' data. For example, studies linking body image to teenagers' self-esteem show that teenagers who are overweight have an increased risk of depression and low self-esteem (Sjoberg et al., 2005).

Self-esteem is so inherently bound up with the thoughts about a body that the physical appearance was recognized as a prognostic factor for predicting the level of self-esteem in many age categories (Ata et al., 2006). Low self-esteem is associated with negative body image and the occurrence of eating disorders (Green & Pritchard, 2003).

### 5.2 Body Image of Russian Adolescent Girls Aged 19-20

The average body mass index in this group is normal, but there are girls with a lower and higher index. For this age compliance with external standards is slightly lower, and compliance with internal standards is higher than among girls in early adolescence. The indicators positive body image, activity level, body functionality also are not high.

Our data do not correspond with the results obtained for the English-language participants. For example, S. Usmiani and J. Daniluk (1997) have shown that the greater femininity of the gender role correlates with the positive body assessments in the group of girls without menstruation, while in girls with established menstrual periods, the positive body image correlates with greater masculinity in the gender role. Such a difference in the results may indicate cross-cultural differences in the body image of English-language and Russian adolescent girls.

VCOPAS with the Russian participants also demonstrated some difference since the girls noted that they rarely heard comments about the appearance proposed in the questionnaire. A different list of comments might be needed for the Russian respondents. At the same time, the more the number and frequency of comments about the appearance, the more was the negative reaction to them. The more additional comments a girl notes, the higher their frequency, the more negative emotional reaction she also expresses.

BSQ in the Russian participants showed that this is a fairly reliable instrument for analyzing the concern about the body shapes of Russian-speaking girls. Currently, the questionnaire is suitable not only for the English-language sample, but is also translated into Portuguese and Swedish. It was used in studies conducted in Brazil and Sweden (da Silva et al., 2014; Welch, et al., 2012).

The answers of the VCOPAS and BSQ measures in the Russian-language participants correlate with each other. Girls, concerned with the forms of their body, note a greater number of comments, their negative reaction is also higher compared to a group of girls who are not concerned with body shapes. These data corresponds to other studies. For instance, S. Herbozo (Herbozo & Thompson, 2006) reports that the frequency of comments about the appearance that girls note affects body image disturbances and self-esteem in female students aged 18-25.

The concern about one's body, its size and forms might make the respondents pay attention to the comments and get frustrated about this. Although the opposite situation may be true – the more often the girl hears comments about the appearance, the more she worries about the body and its forms. This issue requires further study. It may be very important issue in changing not only the women's self-esteem, but even in terms of changing their eating behavior (Herbozo et al., 2017).

In our sample, 19-20 year-old girls have different body image parameters depending on the concern with weight and shape. In the group of girls with have no concern about a body, compliance with external and internal standards fluctuates around 60%. In groups with a mild and moderate level of concern about a body, the degree of compliance falls to 40-50%. Moreover, our data illustrate that in Russia «normative discontent with a body» is spreading more and more among women and encompassing girls of younger age groups, while in some countries there are reverse trends. For example, a study conducted in Iceland among 16-19-year-old students proved that the body image from 2000 to 2010 became much more positive for both men and women. Also, during this time there was a decrease in the proportion of women following diets (Zhou et al., 2020; Souza, et al., 2019; Wilson et al., 2019).

### 5.3 Body Image for Girls in Early and Late Adolescent

In both groups satisfaction with the body is low. Although studies of the positive body image are becoming popular

(Tiggemann & Zaccardo, 2015), we believe that when considering the relationship between age and body satisfaction, it is necessary to take into account the cross-cultural differences between the studied groups. For example, M. Tiggemann (Tiggemann & McCourt, 2013) noted that satisfaction with body image in women increased with age. However, our previous studies have demonstrated that for Russian-speaking women the situation is opposite (Belogai & Morozova, 2017).

We noted the higher satisfaction with their body was retrospectively in childhood, the higher the degree of body acceptance at the present moment the girl has. It is right for positive constitution appraisal and body functionality. The smaller number of inter-correlations in early adolescence might be due to the serious transformations that the body of a teenage girl is undergoing during this period. As a girl grows older, the body image becomes more integrated.

Body image, the age and the eating behavior are interconnected. Positive body image depends on age ( $p < .001$ ) and eating behavior ( $p < .02$ ), positive constitution appraisal depends on eating behavior ( $p < .02$ ). Girls keeping to diets have the lowest constitution appraisal; they have the least positive body image. Our data are consistent with the data of other researchers. For example, F. Johnson and J. Wardle (2005) indicated that a negative body image adversely affected health behavior, for example, unhealthy weights control behavior.

According to M. Tiggemann (Tiggemann & Zaccardo, 2015) in adolescent and young adult women “positive body image would likely be expressed most obviously in healthy eating patterns, whereby women eat freely and intuitively, following internal hunger, rather than in response to external situational”. It has also been suggested that girls with positive body image might be less likely to engage in smoking, alcohol, or other drug use (Andrew et al., 2014). N. L. Wood-Barcalow, T. L. Tylka, and C. L. Augustus-Horvath (2010) introduced the term “protective filtering”, which means that “information about the body is interpreted in a self-protective manner, filtering out negative information potentially harmful to body image”. Positive body image can be a conscious choice. In the above mentioned study 80% of college students reported that they had experienced negative body image during adolescence which they had subsequently overcome through a cognitive shift in their thinking, including embracing an inclusive definition of beauty.

As our interview illustrates, the dissatisfaction with the body image among Russian-speaking adolescent girls is determined by the same factors as in other ethnic groups: the influence of the media, the Internet, peers and family factors (Thompson et al., 1999; Shroff & Thompson, 2006). Our data correspond to other Russian studies. For example, study reported that parental remarks directly affecting the body image of teenage girls (Zinovieva et al., 2015).

In general, both groups demonstrate «normative discontent» with the body, which is consistent with the data obtained in European, American, and Latin American samples (Holmqvist et al., 2007; de Sousa Fortes et al., 2013; Zhou et al., 2020).

## 6 Conclusions

Most girls aged 13-14 are demonstrated a low degree of body acceptance, by a significant gap between the images of a real and ideal body. The self-respect for them correlates with positive body image. Whereas self-blame correlates with negative body image. Body functionality and positive body image are connected both with external standards and with the internal standards.

Girls aged 19-20 (like a younger group) also have dissatisfaction with the body. Also, there is a correlation between subjective and objective, for example, BMI, characteristics of the body. Depending on the concern with weight and shape, 19-20 year-old girls have different body image.

Having compared the body image of girls in early and late adolescence, we found no significant difference in body image. However, we can observe some positive dynamics in the body image associated with age – the body functionality increases with age. The body image becomes somewhat more integrated by the age of 19-20 compared with the younger girls.

Also there are various relationships between the parameters of the body image, the age and eating behavior of adolescent girls; and this issue requires further study.

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**Primary Paper Section:** A, F

**Secondary Paper Section:** AN, FL

## FOSTERING ENVIRONMENTAL COMPETENCE IN THE PEDAGOGICAL UNIVERSITY GRADUATES THROUGH RESEARCH ACTIVITIES

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**Abstract:** This paper describes the teaching practices at the Department of Natural Science and Technology of the Mordovian State Pedagogical University named after M. E. Evseviev for fostering the environmental competence in future teachers of biology, chemistry and geography. The authors have identified the main approaches to solving the problem of fostering the environmental competence in the pedagogical university graduates through research activities: the graduates should have a solid knowledge about ecology and environmental factors, a strong ability to assess the condition of the environment under the anthropogenic impact; university should implement full-scope research activities directed at fostering the environmental competence; communicative and practice-oriented pedagogical activities.

**Keywords:** ecology, environmental competence, research activities, future teachers, orientation toward nature protection, pedagogical university.

### 1 Introduction

The imperative of the modern society in the 21st century is that a graduate of pedagogical university must have a developed environmental competence. One of the first priorities of the Department of Natural Science and Technology is to foster the environmental competence in the university graduates.

The modern world is living in difficult environmental conditions, which obliges the younger generation to think about the devastating consequences of the environmentally unfriendly actions. In this connection the society has begun to pay more attention to fostering the environmental competence of younger generation which will predetermine the future of people, the nature and the planet as a whole.

The goal of school education is to raise the future generation having the environmental competence and understanding the negative impact of environmentally unfriendly human intervention in nature, possessing certain environmental knowledge, abilities and skills. It brings a challenge before a pedagogical university to raise of students the future teachers committed to developing the environmental competence in the younger generation.

However, the process of fostering this competence cannot be built on traditional methods of teaching focusing on conveyance of theoretical knowledge, which alone cannot be efficient in solving practical tasks. It is possible to address this problem by introducing research activities in the learning process. Thus, the issue of fostering the environmental competence in pedagogical university graduates through research activities proves to be relevant.

The competence of a prospective teacher is a complex structural formation which requires ongoing improvements, where the environmental competence is among the key competences to be developed in a pedagogical university graduate. The professional growth trajectory of a future teacher depends on the individual capabilities of students and professionalism of teachers.

The environmental competence includes certain combination of environmental action algorithms and criteria for implementing such algorithms in practice.

### 2 Literature Review

The basic concept in the context of the problem under scrutiny is research activity. Analysis of scientific and methodological literature revealed that the issue of research activity was studied in the works of A. V. Andreeva (2015), E. A. Makarova (2011), A. G. Busygin, E. V. Lizunova (2018), V. A. Slstenin (2006), A. V. Khutorskoy (2013) etc.).

Nowadays the educational process with a research orientation is considered as one of the ways for boosting creative potential and original thinking, and also is one of the main characteristics of the high level of education of modern students (Busygin & Lizunova, 2018).

Highly relevant is the use of research activities in the system of effective fostering environmental competence for the implementation of integration ideas. The incorporation of research activities as a centralized conceptual platform in the educational process will provide future graduates with the opportunity to build an individual learning path. An individual learning trajectory is a personal path of tapping the personal reserve of environmental knowledge of each graduate (Smirnov & Maltsevskaya, 2019).

According to researchers, research activity is a type of action associated with satisfaction of the needs of students in creative, learning, cognitive activity, which final product is the new knowledge acquired in accordance with the goal (Smirnov & Maltsevskaya, 2019).

The high urgency of the need to foster the environmental competence in future teachers is tied to the requirement of Federal State Educational Standard 3++, which states that each graduate should possess the universal competence (UC-8, GPC-8) for developing conscious attitude to the environment (Portal of the Federal State Standards for Higher Education, 2021; Sadykova & Niyazova, 2014; Satueva 2016).

The research format of activities contributes to the proactive development of graduates' readiness for carrying out professional activities in educational institutions (Chigisheva, 2010).

### 3 Research Methodological Framework

**The purpose of this research** was to identify techniques for fostering the environmental competence of pedagogical university graduates through research activities.

The research objectives were:

- develop a model of fostering the environmental competence of pedagogical university graduates through research activities;
- test the developed model and assess its effectiveness;
- analyze results of the experimental work aimed to foster the environmental competence in pedagogical university graduates through research activities.

This research employed theoretical methods for reviewing the research and methodology literature, observation, analysis, comparison and synthesis, as well as an empirical method (an experiment). The experiment was conducted in 2019-2021 academic year on the basis of the Mordovian State Pedagogical University named after M. E. Evseviev (MSPU). It included 30 students of the Department of Natural Science and Technology of the Mordovian State Pedagogical University named after M. E. Evseviev (MSPU).

During the experimental research, the environmental questionnaire of S. S. Kashlev and S. N. Glazachev (2000) was used to reveal the level of environmental competence of the pedagogical university graduates through research activities. The

questionnaire consisted of 45 questions divided into three modules: environmental: focusing on the questions about environmental activities at the level of each individual and society as a whole (Questions 1-10), mental: focusing not only on the environmental knowledge, but also the natural sciences exploring the environment, its components and their interactions (Questions 11-24) and behavioral: focusing on the environmental skills and creative abilities of students related to application of the obtained knowledge in practice (Questions 20-45). The levels of environmental competence were revealed based on the following differentiation scale: from 0 to 20% - very low; from 21 to 45% - low; from 45 to 75% - medium; from 76 to 100% - high.

#### 4 Results and Discussion

We would like to present the main approaches to solving the problems of fostering the environmental competence of pedagogical university graduates through research activities. The first approach is revolving around the fact that modern university and, in particular, the Department of Natural Science and Technology should be the powerhouse of protection and preservation of ecology and environment. Future teachers should have a solid knowledge about ecology and environmental factors, as well as proper skills to understand the state of ecology resulting from anthropogenic impact.

The second approach is rooted in the fact that in modern higher education institution the full-fledged work should be performed aimed at fostering the environmental competence. The learning content should include the research projects presenting information and facts about environment and ecology. A special place in the research activities is taken by ecological games, eco-trails, eco-quests, which may be efficiently used both inside and outside the classroom.

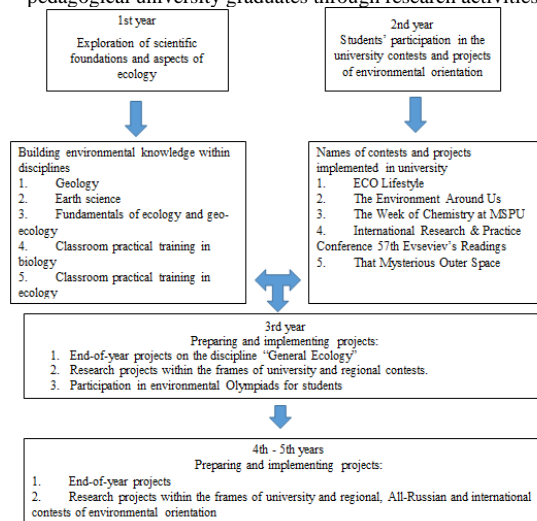
The third approach is hinging on understanding a big role of research activities for the environmental research projects involving cognitive, communicative, practice-oriented pedagogical activities. For implementation of this approach, the biodiversity preservation projects are of great importance.

For accomplishing the purpose of this research, the compound environmental questionnaire was used, which was produced based on several methods of S. S. Kashlev, S. N. Glazachev (2000) in the authors' own interpretation. Two groups, comprised of 30 students each, were organized for the purposes of our experiment. The first group included the graduates who received training under the general education program of higher education without participation in additional research activities, it was the control group. The second group, experimental, included students who, starting from the third year, took an active part in competitions, Olympiads and research projects of environmental orientation.

A large amount of research work is implied for producing end-of-year papers on the disciplines of environmental content and the final qualification paper.

We have developed a model of fostering the environmental competence of pedagogical university graduates through research activities (Figure 1).

Figure 1 A model of fostering the environmental competence of pedagogical university graduates through research activities



Source: developed by the authors

Taking into account the modern trends in the development of global educational space and new requirements of the competence-based approach to the qualification of pedagogical university graduates, the importance of ecological competence cannot be underestimated. The structure of this competence includes the following important components as presented in Table 1.

Table 1 Main criteria, indicators and methods of measuring the effectiveness of efforts aimed at fostering the environmental competence of the pedagogical university graduates

Seq. No.	Criteria & indicators	Measurement methods
<b>Cognitive component</b>		
1.	Acquisition by graduates of a framework of environmental knowledge and necessary skills for modelling environmental relationships and processes.	- Understanding of the holistic ecological picture of the world; - ability of graduates to identify the causes of environmental problems and to foresee their probable consequences.
<b>Professional-activity component</b>		
2.	Readiness of the bachelor's degree holders for environmental action.	- Answers on the methodology of environmental education and propagation of environmental ideas; - performance of creative tasks requiring research activities to solve environmental problems.

Source: compiled by the authors

As concerns the first criterion, graduates performed tasks intended to check their understanding of the holistic ecological picture of the world (Task 1-10) and tasks checking their ability to identify the causes of environmental problems and to foresee their probable consequences (Task 11-24). The conducted research yielded the following results: in the experimental and control groups 11.8% and 10.5% of graduates respectively demonstrated the high level of environmental knowledge and environmental modelling skills. It was revealed that 47% of graduates in the control group and 59% in the experimental group have the medium level of such knowledge and skills. So the number of graduates with a medium and high level of the first and second criteria was: 70.8% of students in the experimental group and 57.5% in the control group. The low level and very low level of the environmental knowledge was

shown by 29.2% in the experimental group and 35% and 7.5% graduates respectively in the control group.

The indicator of the second criterion was the level of the fostered environmental competence of graduates. We used 10 tasks requiring answers regarding methodology of environmental education and propagation of environmental ideas and another 15 creative tasks requiring implementation of research activities to solve environmental problems.

Having analyzed the results obtained in our research, we came to the conclusion that:

- more than half of students from the pedagogical university studying at the Department of Natural Science and Technology in both the experimental and the control groups, showed high and medium results based on the questionnaire results, which is explained by the fact that most students chose the specialty with a natural science orientation and already have the basic knowledge of environmental problems;
- all the graduates have to complete end-of-year projects on the discipline "General Ecology" which by default implies completion of a creative project;
- division of students into groups showed that graduates in the experimental group have the higher ecological competences.

## 5 Conclusion

The better results of students, the prospective teachers, from the experimental group are explained by their active participation in research activities related to the environmental competence. Research activities are not associated only with the development of cognitive skills, but also the ability to navigate the information and digital space, the ability to compare the stated objectives and the obtained results, the ability to structure obtained knowledge in an intelligent way. The future teachers, when carrying out research projects related to environmental issues, are in some way "challenging the future", and on the basis of the received integrated environmental knowledge they choose the most effective ways to solve problems related to the close socio-natural sphere, facilitating implementation of the principles of sustainable development.

Thus, the findings of pedagogical experiment targeting the cognitive and professional-activity components of environmental competence indicate that systematic involvement of students during their five-year study period to research activities of environmental orientation helps to raise the level of environmental professionalism of graduates.

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## BOLSTERING PREPAREDNESS OF A FUTURE TEACHER FOR DESIGNING ASSESSMENT TOOLS

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Abstract: The paper deals with the problem of bolstering preparedness of a future teacher for designing the assessment tools. The authors expand on the possibilities of the discipline "Modern Tools for Assessing the Learning Outcomes" as a means of bolstering the future teacher's readiness to design assessment tools, which include acquisition by students of theoretical knowledge in the field of control and assessing the learning outcomes of students, the specific aspects of educational monitoring; getting the knowledge of modern technologies, methods, tools and forms of control and assessing the learning outcomes of students; developing abilities and skills for designing assessment tools of different kinds; mastering the methods of using the monitoring and assessment data when designing an educational process.

Keywords: professional readiness, teacher, designing, assessment tools, control and assessing activity, on-the-job internship.

### 1 Introduction

The transformations taking place in the system of education in Russia associated with the revision of educational paradigms and the use of new approaches to learning require changes in the guidelines for preparing a future teacher capable to carry out various activities in line with professional standards. One of the most important components of the competence of a future teacher as concerns solving professional tasks of monitoring and evaluating the progress in learning outcomes of students, identification and correction of difficulties in learning is the readiness to design assessment tools.

The development and implementation of a pedagogically appropriate assessment framework is seen today as one of the key conditions for developing monitoring and assessment skills of students. In this case the assessment of students' learning outcomes is intended not to measure the formal knowledge component of the mandatory minimum educational content, but to find out students' ability to apply this minimum to solve practical-cognitive, value-oriented and communicative tasks (Buyanova & Gorshenina, 2019). Transformations in the assessment framework are focused on the student's self-esteem and personal achievements, which sparks the child's motivation in activity, promotes humanization of the system of relationships between students, and also between a teacher and students. The described realities become a beacon for the professional training of a future teacher who should possess the knowledge of modern approaches to, methods and means of assessing activity, be able to use assessment technologies in educational practice and be capable of designing assessment tools.

### 2 Literature Review

Attention to the problem of teacher training is not new in the psychological and pedagogical literature. Researchers put extensive efforts to explore methodological and methodical issues of bolstering the readiness of a future teacher for control and assessing activities.

The publications of recent years highlight the questions related to statement of the problem of bolstering readiness of future teachers to perform control and assessing activities, dictated by

the need to train a competent graduate who will be capable to monitor and assess the learning outcomes of students. Of particular importance in this context are the studies of foreign scientists, who pay considerable attention to elaborating the theory of assessment in education, forms and criteria of assessment (Andrade et al., 2019; Bennett, 2011; Black, 1998; Black & Wiliam, 2009; Dierick & Dochy, 2001; Guskey, 2003; Harris & Bell, 2013; Wylie & Lyon, 2016) and the questions of practice-oriented training of a teacher (Bauer et. al., 2006; Hagger & McIntyre, 2006; Huberman, 1991). In the studies of Russian scientists, the assessing function of a person is viewed from different standpoints: the role of assessment in the life of community is revealed in the works of N. A. Baturin (2008), A. A. Bodalev (1982), Yu. N. Emelyanov (1995), V. N. Kunitsyna (1995); the assessing abilities of a person and the features of their formation were analyzed by T. I. Artemieva (1977), B. M. Teplov (1961), V. D. Shadrikov (1994); the implementation of assessing activity by a teacher is presented in the works of Sh. A. Amonashvili (1984), A. B. Vorontsov (2002), G. Yu. Ksenozova (1991), A. K. Markova (1993), T. S. Polyakova (1983), N. E. Skripova, S. I., Makushina, (2017), G. A. Tsukerman (2011). According to Sh. A. Amonashvili (1984) and A. K. Markova (1993) the control and assessing framework is not oriented toward the teacher's personality, profile and specifics of the educational institution, and does not contribute to boosting creativity and reflexive position of a teacher. N. E. Skripova, I. S. Makushina (2017) analyze didactic difficulties in control and assessing activities of a primary school teacher, to which the authors refer: planning by teacher of monitoring at different stages of students' learning activity; teachers' erroneous identification of objects to be assessed; problem related to the choice of methods to assess the learning outcomes; lack of readiness to include students in the process of assessing the results of their own learning activities and difficulties in organizing activities encouraging self-assessment by students of their learning activities; insufficient use of the results of control and assessment of basic educational results for the purposes of analysis, interpretation and subsequent adjustment for planning classroom and extracurricular activities. Different directions in the teacher training for the major types of professional activities have been explored by E. V. Beloglazova et al. (2020), I. B. Buyanova et al. (2019), N. V. Vinokurova et al. (2018), N. A. Parshina et al. (2019). Analysis of literature testifies to high relevance and importance of the problem of preparing a teacher for designing assessment tools.

### 3 Research Methodological Framework

The purpose of this paper is to reveal potential of the discipline "Modern Tools for Assessing Learning Outcomes" in bolstering readiness of a future teacher to design the assessment tools.

Based on the stated purpose the following research objectives have been identified: consolidate the theoretical foundations for bolstering the readiness of a future teacher to design the assessment tools; assess the readiness of a future teacher to design the assessment tools; develop and implement into the teaching practice the content of the discipline "Modern Tools for Assessing the Learning Outcomes" and determine its efficiency for bolstering the readiness of a future teacher to design the assessment tools.

The experiment lasted from 2020 until 2021. The experimental research was conducted on the basis of the Mordovian State Pedagogical University named after M. E. Evseviev. The experiment included 54 students of the department of physical education in the field of training Pedagogical Education, specialties Physical Education and Physical Education. Health and Safety.

The research relied on theoretical (analysis of psychological and pedagogical literature, synthesis, consolidation, systematization

of publications on the problem of training a future teacher and performance by a teacher of control and assessing, forecasting, comparing, designing functions) and empirical research methods (pedagogical experiment).

#### 4 Results and Discussion

For solving the first task, having analyzed information sources on the research topic we determined that "the readiness of a future teacher to design assessment tools" should be understood as a complex holistic structure which forms as a result of student acquiring experience in control and assessing activities and the combination of personal and professional qualities developing on its basis enabling the effective solution of tasks related to understanding the importance and place of such activities in the holistic pedagogical process, as well as the system of pedagogical knowledge and skills in designing, developing and using various assessment tools.

Here under the assessment tools we mean dedicated methodological and monitoring-assessing materials which allow to verify with a sufficient degree of objectivity and correctness that the process and results of the learning activities of students correspond to the requirements established by the federal state standards of general education. The analysis also helped to determine the structure consisting of motivational-value, cognitive, instrumental and reflexive components and the criteria of readiness to design the assessment tools (the developed personally meaningful and relevant motives, needs and attitudes in the field of designing the assessment tools, as well as high interest in this aspect of activity; knowledge of theoretical and procedural aspects of assessment necessary to design assessment tools; readiness and ability to apply existing knowledge in pedagogical activity reflecting the accrued knowledge of the methods for designing assessment tools, represented by such skills as ability to identify purpose, objectives, object of design, designing skills, ability to assess the results of activity; ability to perform self-assessment of the designing activity with the purpose of subsequent correction), as well as pedagogical conditions of practice-oriented training of a future teacher to design assessment tools (basing on the initial level of readiness to design assessment tools; developing and implementing the content of the discipline aimed at bolstering the readiness to design assessment tools; practical experience of designing assessment tools).

For accomplishing the second objective of this research, a pedagogical experiment was organized, which covered 54 students of the Department of Physical Education pursuing studies in the field of training Pedagogical Education, specialties Physical Education and Physical Education. Health and Safety. The experimental and control groups with no significant differences in basic characteristics were made of the students participating in the experiment.

The first stage (September 2020) involved determining the baseline level of future teachers' readiness to design assessment tools based on the previously identified components of readiness by means of tests and competence-oriented tasks.

The results of the study indicate that the predominant level of future teachers' readiness to design assessment tools among students of the experimental and control groups is medium – 45.63% and 46.66%, respectively. A significant portion in both groups of students are students with a low level of readiness to design assessment tools - 39.65% of students in the experimental group and 38.69% of students in the control group. The smallest percentage are the respondents with a high level of readiness to design assessment tools - 14.72% of students in the experimental group and 14.65% of students in the control group. Students had the greatest difficulties when analyzing the instrumental component. So according to this indicator the low level is typical for 46.4% of students in the experimental group and 47.2% of students in the control group, while the high level has been demonstrated by 10.1% of the respondents from the experimental group and 10.9% from the control group. The

situation is quite expectable as one third of the students (31.4% and 30.0% from the experimental and the control groups respectively) also have a low level of the cognitive component to the readiness under scrutiny. The data obtained indicate the need for targeted work on bolstering the future teachers' readiness to design assessment tools.

For this purpose, from September 2020 to April 2021 the formative stage of the experiment was carried out, which involved development of the content and implementation of the training discipline "Modern Tools for Assessing the Learning Outcomes", included in the curriculum for the field of training 44.03.05 Pedagogical Education, specialty Physical Education. Health and Safety, and testing of the developed assessment tools during on-the-job internship intended to acquire professional skills and experience in the profession.

The total labor intensity of the discipline "Modern Tools for Assessing the Learning Outcomes" is 2 credit units, including 36 hours of classroom learning, including lectures and practical classes. The mentioned course is indented to build the readiness of future teachers to perform control and assessing activities by means of designing and applying various assessment tools. The key objectives targeted by the content of the discipline are acquisition by students of theoretical knowledge in the field of control and assessing the learning outcomes of students, the specific aspects of educational monitoring; getting the knowledge of modern technologies, methods, tools and forms of control and assessing the learning outcomes of students; developing abilities and skills for designing assessment tools of different kinds; mastering the methods of using the monitoring and assessment data when designing an educational process.

By its content the discipline has a modular structure, and consists of two modules consisting both of a theoretical block aimed to develop the cognitive component of the bolstered readiness, and the practical material which is oriented to develop the skills, convey the knowledge of methods and practical experience. The purpose of the module "Theoretical Foundations of Assessment in Education" is to build students' understanding of modern concepts and approaches to assessment of students' learning outcomes, technologies of educational monitoring and peculiarities of how to use its findings. The module "Modern Tools for Assessing the Learning Outcomes of Students" involves the study of a wide range of assessment tools used in the educational process, and the methods to design such tools. During the lectures the theoretical aspects of control and assessing activities of a teacher are explored, while the practical classes are aimed at developing the control and assessing skills through group and individual solution of situational professional tasks containing elements of assessment activities, development of pedagogically appropriate assessment judgments, creation of multilevel tasks and tests for students, designing cases, development of assessment scales, development of alternative ways of assessment. Independent work of students when studying the discipline was focused on the in-depth exploration of problems dealt with during classes, relevant to bolstering the future teachers' readiness for control and assessing activities and for designing the assessment tools. It was mostly concerned with completion of assignments related to designing the assessment tools of different types (tests, quizzes, case-study, projects on different topics, questionnaires, essays, crossword puzzles, rating scales, etc.), which make up the fund of assessment tools for the disciplines pertinent to the student's specialty - Physical Education and Health and Safety. A special attention during defense of the developed fund of assessment tools was paid to the quality of the control and assessing materials, their variety, correspondence to the requirements and possibility of their use in the educational practice. The presented results of students' activity were analyzed and discussed in detail; the materials containing inaccuracies were recommended for improvement.

Integration of theoretical and practical training and experience of professional activity was carried out during on-the-job internship dedicated to develop professional skills and experience of professional activity after learning theoretical part of the

discipline in the second semester in the fourth year of study. The program of such kind of internship included the system of assignments involving performance of control and assessing activities and including parametrical analysis of lessons of the teacher within their specialty, independent delivery of lessons and their subsequent self-analysis, check of written works of students, analysis of the school documentation concerning the aspect of control and assessing activity of the teacher, development of the plan for monitoring the learning outcomes of students on the given topic under the study program, application of assessment tools developed by the student on specific topics of the subject and conduction on their basis of the procedure for assessing the learning outcomes of students, development of a criterial framework for evaluating one of the meta-disciplinary universal learning activities of students. Thus, this internship allowed future teachers not only to apply the assessment tools developed during theoretical training, to use various technologies, methods and forms of assessment, but also by getting immersed in the quasi-professional learning activities to actualize the goals and meanings of control-assessment competence, including readiness to design assessment tools bolstered through the study of the discipline "Modern Tools for Assessing the Learning Outcomes".

The effectiveness of program developed for this discipline and tested in the educational process was assessed by measuring the readiness of future teachers to design assessment tools at the control stage of the experiment by establishing the criteria indicating correspondence of readiness to the anticipated results. The controlling stage of the experiment was carried out in April 2021 after completion of the practical training intended to develop professional skills and obtain experience in profession. Students in the experimental and control groups were offered to solve tests, complete competence-oriented assignments and take questionnaires. The students of the experimental group showed the following results: 42.17% of students have a high level of the studied readiness, which is expressed in the the developed personally meaningful and relevant motives, needs and attitudes in the field of designing the assessment tools, high interest in this aspect of activity; knowledge of theoretical and procedural aspects of assessment necessary to design assessment tools; readiness and ability to apply existing knowledge in pedagogical activity; the ability for self-assessment and self-analysis of design activity; 44.22% of respondents have a medium level of readiness to design the assessment tools and only 13.61% of respondents demonstrated the low readiness. Students in the control group showed no significant changes in these levels: a high level of readiness for designing assessment tools was shown by 15.83% of students, medium by 49.96%, and low by 34.21%.

The results indicate the effectiveness of the conducted work and the reasonableness of studying the discipline "Modern Tools for Assessing the Learning Outcomes" as part of professional training.

## 5 Conclusion

The conducted research led us to the following conclusions:

Practice-oriented training of a future teacher should be focused on developing the competences necessary for control and assessing activities, one component of which is the readiness to design and apply assessment tools of different types.

The readiness of a future teacher to design assessment tools represents a complex holistic structure which forms as a result of student acquiring experience in control and assessing activities and the combination of personal and professional qualities developing on its basis enabling the effective solution of tasks related to understanding the importance and place of such activities in the holistic pedagogical process, as well as the system of pedagogical knowledge and skills in designing, developing and using various assessment tools.

One of the ways to bolster the researched readiness is through studying the discipline "Modern Tools for Assessing the Learning Outcomes", representing the foundation for performing the control and assessing activities, design and implementation of various assessment tools during the on-the-job internship for gaining professional skills and experience of professional activity. Pedagogically appropriate selection of content and elaborate composition of the program ensures the achievement of the highest possible level of readiness of future teacher to design assessment tools.

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**Primary Paper Section: A**

**Secondary Paper Section: AM, AN**



## MANAGING THE ACTIVITIES OF CREATIVE FACULTY STAFF

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**Abstract:** This paper discusses staff management at the creative faculty; a special emphasis is made on the specific features of creative activity and professional education in the field of arts. It describes the key factors influencing development of the educational unit at university which is in charge of creative professional training of students. The purpose of this research is to reveal the major problems related to management, and the distinct aspects of organizing the work of creative faculty in the modern conditions. This research helped to define the possible ways to solve the outstanding problems; the roadmap was created outlining the events aimed at the development, improvement and enhancement of the faculty activities; the faculty development strategy was proposed.

**Keywords:** creative faculty, management, culture, art, development, strategy.

### 1 Introduction

For mastering any activity from the world of arts of crucial importance is practical experience of bringing creative ideas into life. The educational process begins, most often, from the childhood. It should be continuous, as it is connected not with gradual mastering of this or that science (from fundamental to particular knowledge), but with purely practical sensual, physical and intellectual comprehension of essence of the mastered art, unleashing of psychophysical possibilities of personality, training of the body and mind, development of complex psychophysical qualities of a student which are crucial for self-fulfillment in the chosen profession.

This research is highly relevant for the below reasons: the modern conditions for development of the educational system, including development of the faculty, depend on the socio-economic factors (Colbert, 2004), including the increasing competitiveness of educational programs, their economic feasibility, but creative training and creative specialties have a number of specific features, due to which team management acquires its distinct features (Pililyan, 2007). In order to stay in line with the modern requirements and socio-economic conditions (Chizhikov & Chizhikov, 2003), the smooth and logical functioning of the faculty and the team become the goal. The specificity of professional education in the field of art manifests itself already during admission of applicants, where the results of the unified state examination are the necessary, but not the only eligibility criterion. Applicants pursuing creative specialties and fields of training are offered creative tests in addition to the unified state examination. When it concerns the field of art, these are such tests which help to assess the creative abilities and predict the success in acquiring the future profession (Kanov, 2009).

### 2 Literature Review

Problems in managing the activities of university faculties are highly relevant and are extensively discussed. In addition, many papers present the research results related to analyzing the effectiveness of managing the educational units at university.

A. Ya. Kibanov (2005) describes the basics of human resource management. N. G. Sinyak and S. A. Kasperovich (2009), in their study explain the concept development program for university educational units and interpret it as designing a particular set of activities that ensure achievement of the unit's objectives and implementation of the unit's mission. The need to incorporate strategic management in the work of the faculty is explainable by the nature of activities carried out by this

structural unit. The faculty seeks to provide organizational support to the educational process and is a key component in provision of high school educational services (Sinyak & Kasperovich, 2009).

The search for ways to improve the effectiveness of educational units of the university (chair) is described in the study of A.E. Vorobiev and A.K. Murzaeva (2017). In their paper they analyze the strengths and weaknesses of faculty management, basic approaches to assessing the performance of an educational unit and present the methodology for assessing the effectiveness of the faculty (Vorobiev & Murzaeva, 2017).

E. V. Myalkina (2017) offers to look at the implementation results of faculty strategic development plans which were created based on the university strategy. Her study describes the system for evaluating performance of faculties that implement the core activities of the organization. The indicators and criteria for performance evaluation draw on the principles of objectivity, predictability, adequacy, timeliness, transparency and measurability, which are crucial for the university to achieve its strategic goals (Myalkina, 2017).

S. M. Markova (2014) explored the vectors of innovative development of the chair, defined goals and objectives in the context of strategic development of the university and the region. She defined the mission of the chair and the key activities contributing to the effectiveness of the faculty in modern conditions (Markova, 2014).

S. D. Reznik and O. A. Sazykina (2018) presented the results of monitoring the teachers' activities through the prism of their inclusion in the chair management processes. In addition, they examined the current trends as concerns engagement in the strategic management at the university, and made their proposals for the use of mechanisms for involving academic staff to manage the educational unit, where special focus is made on building the organizational and functional structure of the chair management (Reznik & Sazykina, 2018).

These works touch upon the problems of managing any university faculty as a structural subdivision of the university, but do not reveal the problems of organizing the activities of creative faculty, in this connection it is important to analyze the works which discuss the problems related to the functioning of creative teams and associations.

According to N. M. Kuleeva, management of creative potential of the university permanent staff is a process of targeted influence on the team of people, including organization, coordination and creation of proper conditions conducive to the development of creative potential to achieve the university goals (Kuleeva, 2007).

From the view point of Yu. A. Adamenko (2011), in the modern economic setting, the art management becomes the type of management when both manager and art exist, in this connection it becomes crucial to revise traditional forms of work of these faculty and implement innovative activities.

O. S. Chernyavskaya and L. A. Malekova (2013) point out that the specificity of creative activity in any field is primarily connected with the low level of standardization, which applies equally to the expected result and the ways of work. The process of creativity involves not only production of a certain product, but also an idea, firstly, about what product is expected to be the result of this process, what qualitative characteristics it will possess; secondly, about how to produce this product (principles of work, technologies etc.) (Chernyavskaya & Malekova, 2013), these features predetermine the need in such forms of management that would take into account all distinctive features of a creative team.

The mentioned studies indicate that there exist certain problems related to the creative team functioning, and that activity of a

specialist in the sphere of culture and art has its certain specific aspects. However, as yet the whole picture is not clear, and no single plan has been developed to overcome the difficulties faced by the creative team in their work and to facilitate its development, in this connection it is important to proceed from practical experience of managing such structural division of university.

### 3 Research Methodological Framework

The purpose of this paper is to identify the major management problems and specific aspects of organizing the work of a creative faculty in the modern context.

The research objectives were as follows:

- identify the specific features of activities implemented by the creative faculty;
- reveal the external and internal challenges faced by the faculty throughout its faculty;
- create a mission and a strategy for development of the creative faculty based on the analysis of problems faced by the creative faculty in its activities;
- make an action plan and a roadmap outlining the events aiming to facilitate development of the creative faculty.

The research employed the methods of theoretical analysis of scientific literature on the stated problem in the field of management, economics, sociology, as well as socio-cultural management.

### 4 Results and Discussion

The practical orientation of professional education also predetermines the character of training for pedagogical staff. The teachers of profile disciplines master the teaching methodology which they learn directly from their teacher, and, while respecting and treating its traditional foundations with care, enrich it with their own experience.

When solving the problem of finding the best ways to manage the work of academic staff of the faculty with a creative orientation, the distinctive features of art education should be taken into consideration, which are stemming from the work with a creative product (Medvedeva et al., 2019).

Development of the faculty becomes possible only when the main features and strategic trends in the development of the system of education and the space of art get accounted for. At the present time certain conditions emerged that influence development of the faculty. Below we describe some of the challenges:

External challenges:

- decline in the general level of culture among the youth;
- falling prestige of professions in the field of education, culture and art;
- stereotypical social opinion about the low-income level of professions in the field of education, culture and art.

Internal challenges:

- due to strictly regulated rules in the labor market, it is difficult to employ graduates who are ready to carry out creative projects in the creative industries;
- specific features of creative industries, characterized by individualization, cause difficulties in carrying out professional activity as a team effort;
- excessive traditionalism and conservatism of programs in the field of culture and art make it difficult to introduce innovations.

The performance analysis revealed the problem of adapting the achievements in creative education to the priority indicators of higher school teachers' scientific activities, which reflect the university performance indicators (Myalkina et al., 2015).

In an attempt to resolve the contradiction between the real practice of managing the processes of artistic and aesthetic education and the need to achieve high quality indicators of scientific and pedagogical activity the faculty strategic development program was developed which is intended to improve the qualitative and quantitative performance assessment rating scores of the academic staff (Myalkina & Zhitkova, 2016).

Innovative development, which we consider a priority objective of the efforts to transform and improve the faculty activities, is largely determined by the quality of education, innovations in the management of educational process, which necessitate the development of new models and technologies for training professionals and creating facilitating conditions for research, creative and project activities (Medvedeva & Marik, 2016). The main determinants and vectors of change should be identified in order to understand the development prospects and priorities in the coming years.

We have formulated the faculty mission: creation of a unique professional training center to raise a new generation of specialists in the field of art who would have the necessary competencies for the dynamically changing professional reality of the future and who would contribute to development of the cultural space of the region in the part of generation of intellectual and creative resources.

In line with this mission, the main objectives of the faculty development are:

- in the field of education: Creation of a modern educational platform for training specialists for the creative industries in the region, who would be ready for theoretical and analytical perception of artistic space, implementation of innovative mechanisms for managing and producing creative product and also for implementing creative activities in practice by building a proper framework of general cultural, personal and professional competencies which will make them competitive in the labor market;

- in the field of activity popularization: generation, replication and transfer of the best practices for organizing educational process based on the innovative technologies which would ensure competitiveness of future specialists, character education resulting in a strong professional mindset and readiness to use own knowledge, abilities and professional experience for the benefit of the region;

- in the field of promotion: Building and promoting a positive business image of the faculty by means of expanding the learning space: organization of experimental sites, innovative bases for internship, attracting employers (the best personnel) to the educational process, inclusion, interaction with the media sphere (media coverage of the faculty activities). For higher clarity we have presented the above objectives schematically (Figure 1).

Figure 1 Faculty Development Strategy



Source: the authors.

We plan to include some events in the faculty development roadmap that would contribute not only to the professional growth of teachers and students, but also expand the research

experience, facilitate creative fulfillment of personality, embodiment of creative ideas.

As part of the efforts to achieve higher staff performance scores, it is planned to increase the number of scientific studies and publications in the field of culture, education and art, which reflects the specifics of the faculty.

As a result of transformations in the faculty management, we project to build and strengthen the motivation of academic staff for creative publication activity, as well as to organize important creative activities, which require expansion of the learning space for the respective fields of training and research and creative efforts. We define as the fundamental measures the cooperation with profile educational organizations of the region within creative and research efforts, interaction with cultural institutions for implementing educational programs and conducting master classes, implementation of expert activities in the field of design, visual, musical art, decorative and applied arts, as well as screen arts.

Table 1 Roadmap of Events Aiming to Boost Faculty of the Creative Faculty

Goal	Timing	Event	Description
<b>Building and promotion of a positive business image of the Faculty</b>			
Organizing creative and research efforts	April - June 2021	All-Russian Research and Practice Conference "Culture, Education and Art: Traditions and Innovations";	Discussion and discourse on the problems in the field of education, culture and art; Expert opinions on the modern problems in the field of education, culture and art;
Organizing learning events as anticipated by the study program "Producer Business" through participation in the important cultural events of Nizhny Novgorod	April 2021	Holding events in the format of discussion forum	Events on the problems related to designing the media products
		Arranging a movie club	Organizing demonstrations and discussions
Organizing events of interest, learning events aiming to improve the media literacy, film literacy, professional etiquette and personal development	April - June 2021	Planning and holding events that would attract students in the Film Literacy format	Discussion and discourse on the history of cinematography; rules of film aesthetics; techniques of cinematography; movie making technologies; motion production economics.
		Organizing the work of media studios	Creation by the students of the specialty 55.05.04 Producer Business of movies, videos, programs
		Establishing a movie club Kinodrive	Boiling Points within the discipline on the basis of the Cinema History, which purpose is to study cinema as the instrument for personality education and development
Growing the student community	April - June 2021	Establishing a student media bureau Minimedia	Engaging the students of other specialties
Expanding the innovative bases for internships	April - June 2021	Including the profile organizations to the learning process, both curricular and extracurricular	Including the teams Kinofactura, KINOCOM, FUTURO Gallery and others.
		Building a positive image of the program	Engaging new partners for the program implementation: E. Evstigneev's

			Nizhny Novgorod Theater School, Nizhny Novgorod College of Culture, V. P. Chkalov's House of Children's Art, general education schools 190, 169, 161
Program of professional orientation partnership with profile organizations "The Way of Success"	March - June 2021	Organizing events "Image in Visual Arts"	E. Evstigneev's Nizhny Novgorod Theater School, Nizhny Novgorod College of Culture, V. P. Chkalov's House of Children's Art, general education schools 190, 169, 161
		Organizing a webinar How to Compose a Story "Videomaker"	E. Evstigneev's Nizhny Novgorod Theater School, Nizhny Novgorod College of Culture, V. P. Chkalov's House of Children's Art, general education schools 190, 169, 161
		Organizing a webinar "2 Hours with Producers"	E. Evstigneev's Nizhny Novgorod Theater School, Nizhny Novgorod College of Culture, V. P. Chkalov's House of Children's Art, general education schools 190, 169, 161
	February 2021	Organizing a regional media contest "The Wings of Creativity"	E. Evstigneev's Nizhny Novgorod Theater School, Nizhny Novgorod College of Culture, V. P. Chkalov's House of Children's Art, general education schools 190, 169, 161
	June 2021	Organizing the Doors Open Day for the Producer Business specialty	Organizing an event jointly with the networking partner Nizhny Novgorod State TV and Radio Broadcasting Company
Creating a media information space to promote the activities of teachers and students	April - June 2021	1. Specialist with functions of information support for the educational program; 2. Student Association with functions of information support for the educational program.	Training the academic staff in the use of digital technologies. Improving the knowledge of students in the field of media.
		Information support	1. Creating digital information resources on social media, channels and messengers. 2. Attracting users by creating digital information resources on social media, channels and messengers.
Creating a package of educational products building or enhancing qualifications of specialists in the field of media	2022	44.04.01 Pedagogical Education, specialty Design of Educational Media Products, Supplementary Program "Producer of Infoproduct".	1. Regulatory and legal support of the educational product 2. Staffing support of the educational product. 3. Analysis of the opinions of applicants
<b>Generation, replication and transfer of innovative experience</b>			
Expert assessment of the activity	Annually		Project session, chair report
Commercial proposition to the market of educational services	2021		Implementation of the educational product

Source: the authors.

The roadmap was built in a manner hinging on identifying the major problems in development as well as the objective regularities (external and internal challenges), which then were used to determine the main vectors and priority areas of faculty strategic development.

## 5 Conclusion

Having explored the results of activities undertaken by the faculty team, we see the innovative way of developing the system of training for the specialist in the field of art as the creation of a new expanded learning space, based on the spread of new training organization technologies which correspond to the modern trends in the development of education.

In addition, for facilitating the faculty's work, building and promoting its positive business image, the following steps should be taken:

- encourage faculty members to participate in major creative projects of the region with the use of student initiatives to solve professional problems;
- create collaborations with leading organizations and enterprises of the region for joint creative and research efforts, as well as collaborative cultural and educational design;
- create facilitating conditions for professional development of academic staff both in creative and in scientific-pedagogical activities;
- create a media environment of the faculty with systematic information support of the teachers and students.

As a result of targeted efforts for the faculty development, we see our structural unit as a platform of best practices for training specialists and teachers in the field of art capable to implement innovative teaching models.

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## LABOUR EDUCATION OF JUNIOR SCHOOLCHILDREN BASED ON THE FOLK PEDAGOGY TRADITIONS

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**Abstract:** This paper is dealing with identifying opportunities for the use of traditions of folk pedagogy and culture in the upbringing of the younger generation. Based on the analysis of historical and pedagogical literature and study of folklore material and traditional culture of the people, this paper describes the purpose, objectives, content, effective methods and techniques, traditions and customs of educating children and young people in folk culture, along with the key features, conditions and mechanisms of labour education. The research has proven the relationship between the content of labour education in folk culture and the combination of historical and cultural, ethno-psychological, economic factors; and the effectiveness of the holistic system of staged differentiated inclusion of children in the labour activity.

**Keywords:** labour education, folk pedagogy, folk culture, folk traditions, junior schoolchild.

### 1 Introduction

The goal of modern education is to prepare the younger generation for the active labour and professional activity in an ever-changing world and society. The Concept of Spiritual and Moral Upbringing and Development of the Citizen of Russia states that the system of basic national values includes Labour and Creativity as the means of raising a person, a family man, a citizen (Danilyuk et al., 2009, p. 18), and the diverse labour is an essential condition for successful professional self-determination of a student (Antonova et. al., 2019); the component of social experience of a person (Nasibullov et. al., 2016).

Studies of educators and psychologists provide evidence that the junior school age is one of the most favorable ages for labour education. However, the modern researchers note that the level of labour education of younger students is not high enough, few students have a willingness to work, and the motives of entering the labour force are increasingly dominated by extrinsic motives of financial gain and of avoiding punishment. They don't have a mindset for active labour and industriousness; the range of future professional preferences includes more and more professions and activities that, in the opinion of children, do not imply the manifestation of qualities of an industrious person and do not require high-profile education. Such a mindset is formed under the influence of modern mass media, which demonstrate behavioral models driven by anti-ideals of getting wealth through labourless methods without making any effort. The extensive presence of younger generation in the information space, exposure to external influence, suggestibility of children and teenagers can lead to the erosion of values of labour, the emergence of serious problems in the motivational sphere, professional self-determination and self-fulfillment, which will do substantial harm to the economy and society as a whole.

It is against this backdrop that it becomes increasingly relevant to create the conditions conducive to raising awareness of high importance of labour activity for a person of any age as the source of their well-being, positive motivation for labour, practical competencies and personal qualities essential for the labour activity, bolstering the creativity and innovative thinking; self-organization skills, etc.

In order to develop an active personality of an industrious citizen, starting from primary school, it is necessary to combine traditional and innovative technologies and methods for optimizing this process. Among them, a special place is taken by progressive traditions of the people predetermined by historical and cultural, natural-climatic, socio-economic specifics; their high efficiency and sustainability, congruity with nature and differentiated character make them highly useful for education of primary school children while at the same time embracing the modern realities.

### 2 Literature Review

Within the frames of this research, we have explored the scientific and pedagogical literature, including historical and pedagogical studies, folklore material and documents.

The role of folk culture in raising an industrious citizen was emphasized in the studies of domestic and foreign scholars throughout development of pedagogical science and practice. K. D. Ushinsky (1974) justified the necessity to introduce the principle of ethnicity into the practice of teaching and educating children, i.e. designing the educational process based on the values of native language, history and traditions.

The works of foreign scientists (Pestalozzi, 1981; Kerschensteiner, 1915) also emphasize the importance of folk culture in education; frameworks for preparing children to enter the workforce in different countries are based on the traditions and values of the people of each country.

I. G. Pestalozzi (1981), the Swiss educator and supporter of uniting learning and labour, the author of literary works "Lingard and Gertrude" (1781 - 1787), "How Gertrude teaches her children" (1801), emphasizes the obligation to base labour education on the traditions of the mother school and folk pedagogy (Latyshina, 2019, p. 44). I. G. Pestalozzi (1981) believed that the love for this or that profession should be cultivated from the childhood. Even mother, when giving a child some work around the house, should use the best of her abilities to show and explain that any domestic work has its continuation and is connected with the world of work - agriculture, industry. The amount of work commensurate with the child's abilities contributes to development of their human dignity, industriousness, persistence, conscientiousness and other positive qualities of a personality (Pestalozzi, 1981, p. 35).

Defining the goals of the folk school, G. Kerschensteiner (1915) gave priority to developing professional capability and love for labour, and along with them, those basic virtues which lead as their direct consequence to ability to work and love for labour: conscientiousness, diligence, stability, sense of responsibility, self-control and active life (Kerschensteiner, 1915. p. 20).

The importance of introducing the younger generation to the traditions and culture of their people has been emphasized in the works of modern scientists (Yakunchev & Gorshenina, 2013; Gorshenina et. al, 2017), researchers have developed technologies of ethno-cultural education for children (Karpushina, 2018; Kirkina et al., 2018; Zemlyachenko, 2009), pedagogical conditions and mechanisms for including the folklore on labour themes in the educational process (Karpushina et. al., 2018; Rogachev et. al., 2018; Vodyasova et. al., 2019).

### 3 Research Methodological Framework

The purpose of this paper is to identify opportunities for the use of traditions of folk pedagogy and culture in the upbringing of the younger generation. The objectives of this research are to identify the objectives, specific features and effective methods and means of labour education of children and youth in folk culture, as well as extrapolation of the accumulated historical-

cultural experience into the modern theory and practice of labour education of the younger generation.

For producing this paper, the selected methods were used that allowed to explore the specific features of folk labour education: analysis of historical and pedagogical literature, comparative analysis, study of folklore material and traditional culture of the people, the method of analogy and comparison, retrospective analysis.

#### 4 Results and Discussion

A nation which was not engaged in efficient labour was doomed to extinction; that is why labour has become the main topic of people's contemplations irrespective of their religion, nationality, age and sex. The concept of "traditional labour education" is polysemantic and multiaspectual, it includes both preparation for particular labour activity (labour training), and education of industriousness, and influence of labour activity on personal development as a whole.

The paper presents the peculiar features of labour education of the Mordva people (Moksha and Erzya), belonging to the Finno-Ugric group (Kreindler, 1985). The Mordva is the people whose attitude towards work determined its vitality and its right to self-determination.

Mordovian culture has rich positive experience of labour education that was aimed at raising a person of labour, forming all the abilities and skills necessary in life, cultivating diligence, industriousness, purposefulness, respect for hardworking people and results of labour. Labour was the usual state of the Mordovian people, the way how they lived, therefore the ethnic characteristics of an ideal person necessarily include industriousness as a necessary quality of a good person: "It is not the attire that makes a person beautiful, but his skillful hands", "A person adorns himself with his work". Work was seen as a vital necessity and a guarantee of a fulfilled and happy life: "If every day passes without work, then happiness will fly by", "Happiness is obtained in work, not in laziness and sleep", "If you do a lot, you will see a lot of good" (Oral poetic works of the Mordovian people: proverbs, bywords and sayings, 1967, P. 116).

Proverbs praised the masters of their craft, who enjoyed universal honor and respect: "A good cook can make cabbage soup out of an axe", "A cleaver is an axe in good hands", "You can split a knotty log with your wits" (Oral poetic works of the Mordovian people: proverbs, bywords and sayings, 1967, p. 102).

The objectives of labour education of the Mordva at different age stages had a rather stable character, which was conditioned by permanence of folk views on labour, traditional and constant labour activities, crafts and trades of the Mordva, continuity in mastering certain labour operations, strict distribution of duties and clear management of labour activities of all family members. In addition, the objectives of labour training of the Mordva had a differentiated character taking into account gender. Thus, boys, gradually acquiring the necessary labour skills under the guidance of their father and older brothers, prepared for the role of the future master of the house, husband, father; girls adopted the skills of the future hostess from their mother, grandmother, and older sisters (Belyaeva, 2003, p. 48).

The specific content of labour education was shaped under the influence of natural and climatic conditions, religious beliefs, economic activities and traditional culture. Considering the peculiarities of the geographical location, the Mordva was engaged in farming from the earliest times, therefore only a farmer could be seen as an ideal man. The folklore also describes traditional trades and crafts of Moksha and Erzya (fishing, hunting, bee-keeping (wild-honey farming), weaving, processing hemp, flax, making household items, etc.): proverbs and sayings about the ways of production, labour and skillfulness, farming and cattle breeding, riddles about labour tools, economic activities of the Mordva, songs "Flax", "Moksha Girl", "Glorious

Kastusha Girl", "Vasilyeva Praskovya", "Spinstress", which helped to propagate ideas about labour and different occupations, foster respect for the hardworking people and desire to meet the expectations of different peoples who live nearby (Naldeevea et. al. 2018; Oral poetic works of the Mordovian people: lyrical songs, 1965; Boyarkin, 1983).

The peasant child lived in the atmosphere of unceasing labour, was a permanent participant and observer of this process. From the perspective of methods, techniques and means of labour education used in the Mordovian folk pedagogy two aspects should be highlighted. On the one hand, the child was seen as an object, which was expressed in the choice of methods and means corresponding to the psychological and age features of children: the need to imitate, copy the actions and behavior of adults, the desire to grow up, etc. On the other hand, the child is an active subject of labour activity, that is why the most important place in the system of labour education in the Mordovian folk pedagogy was taken by direct labour activity of children, their early training in crafts and trades, introduction to family labour traditions, through which the need for self-fulfillment and recognition, and the desire to engage in activity were satisfied. In these aspects, it is important to look at the forms of children's participation in traditional life activities, religious ceremonies, the means and factors that had a direct influence on formation of the worldview of a zealous worker, participation of the young generation in leading forms of labour activities of the ethnic group, specifics of sex and age division of labour, distribution of duties, participation in typical age-specific activities and games, ways of accustoming children to work (Belyaeva et. al., 2018).

Elements of the traditional culture of the Mordovian people contributed to meeting the objectives of labour education: traditions of honoring the land and bread, calendar holidays, community prayers for a good harvest, maternity rites, children's games, oral folklore, dance culture, the applied and decorative arts, various trades, crafts and types of economic activities (vine weaving, woodcarving, embroidery, making dishes and clothes, household items, furniture, etc.).

Mordva believed that it was necessary to involve the child in work from the very first days of life, therefore among maternity rites there are some interesting rituals intended to meet objectives of labour education. Depending on who they wanted to see their child in the future, the umbilical cord was taken to the appropriate place (to the stable, arable land, etc.) (Mokshin, 2005). They put a piece of fabric and thread to the girl's cradle to make her a future handywoman, and a piece of lead to the boy's cradle to make him a well-shooting hunter, or toy labour tools were given to him. Wishes for future successful labour occupations are also present in the naming traditions when a child was given the name of a relative who had special merits in labour; many names were connected with the nature of the family economic activity or the place/time of birth (in the field, on the arable land): Paksyai, Paksyut, Paxstyan from paksya meaning a field, Nuyat, Nuyaksha from nuems meaning to reap, Pivtsai from pivtems meaning to thresh, etc.

The Mordovian folk songs figuratively represent all life aspects of the people, reflect their thoughts about daily work and harvest: kolyadka songs such "Kolyada", "Kolyada! The hemp is on the fence"; Troitsk song "Field", round-dance songs "How to sow the flax" (Rogachev et al., 2018, p. 511).

Effective methods of labour education in the Mordovian folk pedagogy were verbal instructions, advice, recommendations reflected in the richest oral-poetic art. Children were taught that the results of labour depend on the contribution and efforts of a person: "If you plow well, you'll be rich", "If you don't put anything in the soil, you won't get anything from it", "If you don't try, your barn will be empty", "If you don't jump into the water, you won't learn to swim", "Nothing is impossible, there are people who fear hardships".

Mordovian folk wisdom disapproved of the negative attitude to work, unwillingness to work, violation of labour traditions, condemned and ridiculed laziness: "The lazy person fears work

as the grave", "The lazy person snores during the day, even the earth shakes", "The lazy person always has a stomachache", "The lazy person pulls weeds - sows grass" (Rogachev et al., 2019; Oral poetic works of the Mordovian people: proverbs, bywords and sayings, 1967). The key method of labour education among the Mordva was the personal example of the elders, who were engaged in labour activities throughout the year, even during the winter and early spring, when no agricultural work was performed.

A substantial portion of the folk culture, proverbs and sayings, about work is devoted to mocking ineptitude, unwillingness to learn how to do their job properly and professionally: "Without knowing the heart of the matter, it is impossible to weave a straw shoes", "He says badly not because the saw is dull, but because the saw master is dumb", "He weaves the bats, but puts the splints in a wrong way", "There is no bad land, there is a bad ploughman" (Oral poetic works of the Mordovian people: proverbs, bywords and sayings, 1967, p. 103).

The Mordovian people considered it important to assess the quality of work only by its results: "Desire gains value in implementation, and work in completion", "Don't praise before you begin, but praise after you complete the work". In labour, according to the people, it is important to take on one thing and do it well: "You can't do a good job in a hurry", "When you rush after everything, you will be nowhere" (Oral poetic works of the Mordovian people: proverbs, bywords and sayings, 1967, p. 106).

The key factors in the labour education of children of the Mordovian people were religious beliefs, which influenced all spheres of social life, including labour activity. The native land due to its high significance was a subject of special veneration of the Mordovians which was expressed in its deification, performance of agricultural religious ceremonies and traditions of worshipping the Mordovian deities: Nishke-paz (the supreme deity), Mastor-ava (the earth goddess), Paksya-ava (the field goddess), Norov-ava (the harvest goddess), Vir-ava (the forest goddess), Ved-ava (the water goddess) and others. (Mokshina, 2016; Mokshina, 2013; Mordva: essays on the history, ethnography, and culture of the Mordovian people, 2004).

In meeting the objectives of labour education among the Mordva helpful were the calendar religious holidays in which children participated. For example, an integral part of Christmas carols (kolyadki) of the Mordva was a custom of public inspection and evaluation of handicrafts, during the Maslenitsa celebration one rode down the mountain on pre-harvested hemp or rye sheaves to ensure well-being and good luck in other economic affairs (Batkov, 2006, p. 39). Significant educational potential lies in one of the key customs in the life of the Mordovian peasant community - the custom of gratuitous mutual aid lezdom (Moksh., lezdam (Erz.), in which children took the most active part (Balashov, 1991; Miroshkin et al., 2020).

When including children in any activities, adults took into account their age and gender. Involvement of children in labour activities was carried out gradually, consistently and systematically, with account of their individual specifics. For a long time, the Mordovians had a semi-natural economy, almost all household items were made in the family by their own efforts, so parents considered it their duty to teach a girl to spin, weave, sew, embroider, and a young man - to make tools and household utensils, build houses, weaving straw shoes and baskets, the art of wood carving, etc. Young Mordovian children, like children of other nations, took care of themselves, helped around the house, and were "babysitters" for younger brothers and sisters. From the age of six or seven, serious work began: working in the vegetable garden, helping in the fields, harvesting, etc. The skillfulness of a Mordovian girl was evaluated at a wedding, for which the bride traditionally had to make 10 to 20 embroidered female shirts and approximately the same number of male shirts, a large number of embroidered towels, headdresses, scarves, etc., which she was making for several years (Mordva: historical and ethnographic, 1895; Belyaeva, 2002; Mokshin, 2005).

The boys were also accustomed to labour through systematic and gradual complication of labour operations. At the age of 7-8 they were taught to ride a horse, harness and unharness a horse, bring haycocks in a cart etc. From the age of 9-10 they were involved in harrowing, and then in plowing. At the age of 13-14 peasant children could do all agricultural works, had the skills of woodworking, traditional crafts. By the age of 15-16 boys and girls became fully trained workers and were able to perform all work on a par with adults. The achievement of objectives of labour education was facilitated by the games which were inspired by the rural life. Folk games were oriented to specific ages and genders. Games for boys were focused on developing their dexterity, ability to judge by eye, strength and endurance. Toys, which were mini-copies of adult tools of labour, were also of special importance.

Based on the analysis of ethno-pedagogical and ethno-graphic sources, we can identify the key features of labour education in the Mordovian folk pedagogy.

The integral and continuous nature of the system of labour education of the Mordovian people was achieved due to the interrelation between all components within the system and their consistent and clear implementation at all age stages.

The system of labour training of the Mordva is multicomponent, as it indivisibly bounds together the mythological and religious beliefs and traditions related to labour, the methods and techniques of practical preparation of the younger generation for labour, the means of folk culture (decorative and applied arts, music and song writing, proverbs, riddles, fairy tales, games, rites, etc.).

The intricate nature of labour training of children implied the compulsory skills in various economic activities (agriculture, carpentry, crafts, weaving, sewing and embroidery, etc.).

The Mordva's labour education had practice-oriented nature due to the use of practical methods for its implementation, and orientation of child labour toward its utility value for future life. Often preparation for labour was purely utilitarian, and focused exclusively on its usefulness.

The successive nature of children's preparation for labour ensured the gradual step-by-step development of labour skills and abilities from simple to complex; in addition, in the family environment, the mastery of crafts was passed from generation to generation (jewelry art, making felt boots, wood carving, etc.).

The inseparability of labour skills formation and everyday life of the family, community and village. A child mastered necessary knowledge, qualities and skills through the game and labour activities, participation in calendar holidays, rites and rituals, prayers, etc.

Collective nature of labour education was achieved by organizing the joint work of children and adults.

Differentiation of labour activity according to age and sex rendered the training of children for labour more effective.

The effectiveness of the system of incentives and encouragements for children's labour in the form of public recognition, praise and award of personally and socially significant status.

Basing on the above, we may highlight some key mechanisms of labour education of junior schoolchildren in the folk traditions (Zemlyachenko, 2014):

- imitation mechanism, which helps to assimilate the models of labour behavior that meet the requirements of morality, spiritual needs of a person in the process of familiarizing schoolchildren with the images of industrious people;
- identification mechanism, providing interiorization of spiritual values and promoting the ideal of an industrious citizen through gradual "immersion" into the folk culture;

- dramatization mechanism (emotional experience), which allows to influence the emotional and sensual sphere through the works of folklore (hymns, labour songs, epics, etc.), recreating folk rituals and traditions, describing the labour exploits of ancestors and contemporaries;
- dialogue-reflexive mechanism operating through dialogue forms, assistance in understanding the importance of labour for each student through analysis and reflection of own behavior, comparing own deeds with the deeds of folk heroes;
- activity mechanism which contributes to shaping the active attitude of an industrious person and subjectivity of a child through organizing socially and personally significant collective activities, showing care to people and the surrounding world based on the folk moral traditions.

We believe that the accomplishment of objectives of labour education of junior schoolchildren on the basis of folk traditions will be effective provided that:

- a continuous and successive system for shaping the personality of an industrious person is created, starting from the first stages of the education system;
- teachers get trained to carry out the labour education through an in-depth exploration of the experience and traditions of the local people, and the works dedicated to this subject;
- the students are engaged on the emotional and sensual level when learning about the heroes of labour of the past and the labour traditions of the local people;
- the learning is organized with reliance on the practice-oriented approach and ensuring high relevance of the presented material to the real life which may be achieved through drawing the parallels between past and present events, and showing the importance of labour traditions for every modern person.

## 5 Conclusion

Thus, the system of folk labour education in the Mordovian culture hinges on a certain combination of historical and cultural, ethno-psychological and economic factors; it is aimed at preparing the younger generation for labour, development of industriousness; it represents an effective holistic system of staged differentiated inclusion of children in labour activity. In this regard, the study and use of ethno-pedagogical traditions of labour education in modern primary education is one of the possible ways of solving the problem of preparing the younger generation for life and work.

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## INSTILLING THE IDEAS OF MORALITY IN JUNIOR SCHOOLCHILDREN

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**Abstract:** This paper deals with the problem of instilling ideas of morality in junior schoolchildren in the modern social and pedagogical conditions. The authors analyze the essence of key notions of research, identify the potential of extracurricular activities as a facilitating environment for raising the morality of junior schoolchildren. Fulfillment of the facilitating pedagogical conditions as identified by the authors helps to build a morality-oriented environment supporting co-creativity of teacher and students in the process of instilling the ideas of morality in the junior schoolchildren. The paper presents the data obtained by diagnostics of the morality ideas among junior schoolchildren and the results of fulfillment of the facilitating pedagogical conditions within the pedagogical process.

**Keywords:** junior schoolchild, morality, idea, instilling, morality ideas, pedagogical conditions.

### 1 Introduction

In the present-day sociocultural situation, it becomes paramount to raise the level of morality among the younger generation. Due to this, education of children as the molding of a morally strong personality has become one of the major goals of the modern society. This turns the spotlight on the need to explore the process of instilling the ideas of morality in the junior schoolchildren which lays the foundation for the moral education and development of personality; identification, testing and fulfillment in the open educational space of the facilitating conditions for raising the level of morality among the junior schoolchildren.

The morality ideas are instilled and corrected in the children of junior school age throughout the entire professional input of a teacher, that's why the search for modern techniques of organizing the process explored in this research in the conditions of a educational facility becomes especially relevant.

It is in the junior school age, that children have their first mindful moral judgements and assessments, gain understanding of the meaningful moral processes and motives, which makes this age period highly sensitive for organizing the process of instilling the morality ideas which testifies to the high relevance of this research.

### 2 Literature Review

Attention to the problem of moral education of students is not new in the psychological and pedagogical literature. Researchers are eager to explore methodological and procedural issues of developing the moral structures of the student's personality, effective means of building the moral consciousness and shaping the behavior.

Modern studies focus on various aspects of organizing education of junior students (Antonova et al., 2019; Chiranova et al., 2020; Kuznetsova et al., 2020; Kobozeva et al., 2020; Karpushina et al., 2020), explore the methodologies and methods concerned with molding the moral consciousness of students (Abolin & Valiakhmetov, 2002; Arkhipova & Mikheikina, 2020; Belova et al., 2018; Vasenina et al., 2018a, 2018b), identify the best conditions and technologies of effective training of specialists in the field of education and of other teaching staff to organize the educational process (Kutnyak et al., 2019; Vinokurova et al.,

2018a, 2018b; Spirenkova & Oskina, 2018; Kudashkina et al., 2018; Kuznetsova et al., 2016.; Belyaeva et al., 2018); find the facilitating conditions for developing the educative techniques (Kulebyakina et al., 2018; Mikhalkina et al., 2018; Goryacheva et al., 2020; Kolechenko, 2006; Okolelov, 2015); examine the potential of different methods and pedagogical instruments for moral education of students (Vinokurova et al., 2018a, 2018b; Vasenina et al., 2018a, 2018b).

The analysis of modern scientific research findings led the authors to the assertion based on ideas expressed by researchers (Buyanova et al., 2020; Divnogortseva, 2019; Shityakova & Verkhoviyk, 2020) that the moral education of students may be defined as:

- knowledge of norms, rules of behavior and communication, as well as the ability to apply them as appropriate, to give evaluative judgments to what is happening;
- purposeful efforts of educators to ingrain in students a system of firm ideas and notions of morality, to develop their moral feelings, and to shape their judgements and attitudes that may further guide them in their lives;
- a process that is intended both to mold the moral feelings, moral consciousness and moral behavior, and to prevent any deviations in the moral development of each child;
- a combination of certain conditions and factors for building the need for moral improvement.

The analysis of the literature proves the high relevance and importance of the problem of instilling the ideas of morality in the junior schoolchildren.

### 3 Research Methodological Framework

The purpose of this paper is to identify the potential of extracurricular activities as a facilitating environment for instilling the ideas of morality in the junior schoolchildren.

The stated purpose was achieved by addressing certain objectives: consolidate the theoretical foundations underpinning the process of instilling the ideas of morality in junior schoolchildren; reveal the initial level of morality ideas among junior schoolchildren; reveal and test the facilitating pedagogical conditions for instilling the ideas of morality in junior schoolchildren; measure the effectiveness of the revealed facilitating pedagogical conditions for building the ideas of morality among junior schoolchildren. The research relied on theoretical (analysis of psychological and pedagogical literature, synthesis, consolidation, systematization of publications on the problem of training an education specialist to design the individual roadmap for student, forecasting, comparing, designing) and empirical research methods (pedagogical experiment).

The experiment lasted from 2018 until 2021. The primary classes of the general education facilities in the Republic of Mordovia and the Mordovian State Pedagogical University named after M. E. Evseviev served as the experimental base of research. The experiment involved 320 primary school students, 25 teachers who carry out educational functions in the system of primary general education. The trial part of the experiment was carried out on the basis of Lyceum No. 31, Lyceum No. 26, Secondary General Education School with Advanced Study of Certain Subjects No. 30, Secondary General Education School No. 27, Secondary General Education School No. 1 in the city of Saransk.

The diagnostic tools used at the ascertaining and control stages of the experiment included "Unfinished Situations" (A. M. Schetinina, L. V. Kirs (Schetinina, 2000)); "Finish a Sentence" (N. E. Boguslavskaya); "What We Value Most in People" (L. M. Fridman); "Story-Telling Pictures" (R. M. Kalinina); "How to Behave" (I. B. Dermanova) (Dermanova, 2002); authors' questionnaires intended to find out

the age-specific distinctive features and the level of morality ideas of the respondents.

#### 4 Results and Discussion

The terminological analysis led us to the definition of the moral education as a purposeful and organized process which should result in the system of moral ideas, views, beliefs, values, motives of personal behavior and the higher level of moral development.

Under moral ideas of junior schoolchildren, we mean abstract images from which a positive emotional attitude of the child to the surrounding reality is emerging, which manifests in morally colored actions and behavior.

As a result of the analysis of information sources on the topic of research we have established that "the instilling of moral ideas in junior schoolchildren" should be understood as a process of multifactorial both purposeful and spontaneous impact on the moral sphere of child's personality leading to the emergence of images of memory and imagination, laying the foundation for conceptual apparatus, moral motives of behavior and beliefs of a personality. Therefore, the task of a pedagogical employee is not only a purposeful positive influence on the moral sphere of a personality, but also the correction of the spontaneous influences of external information fields, facilitating the moral growth of a personality. The instilling of moral ideas should be based on the mechanisms that are typical for the molding of values, but not typical for the assimilation of knowledge. The ideas of the junior schoolchildren are formed on the basis of their limited personal experience, assessments and opinions of others, for that reason their main characteristics include simplicity and crudity.

Researchers have defined a range of ideas that can be successfully instilled in the junior school age. In our opinion, the notions which manifestations may be seen as the criteria of formedness of moral ideas in junior schoolchildren and which determine their age specifics include kindness, mercy, obedience, industriousness, friendliness, discipline, unselfishness.

At the ascertaining stage of the experiment (April-May 2018) the control (167 people) and experimental groups (153 people) were formed, comparable by basic characteristics. The level of morality ideas among the junior schoolchildren was examined with the help of diagnostic tools, which allowed to measure the following components of morality ideas:

1. cognitive ("Unfinished Situations" (authors A. M. Schetinina, L. V. Kirs) (Schetinina, 2000), "Unfinished Stories" (author T. P. Gavrilova) (Schetinina, 2000), authors' questionnaires intended to find out the age-specific distinctive features and the level of morality ideas of the respondents);
2. emotion-evaluative ("What We Value Most in People" (author L. M. Fridman); "Story-Telling Pictures" (author R. M. Kalinina) (Dermanova, 2002));
3. activity-volitional ("How to Behave" (author I. B. Dermanova) (Dermanova, 2002), morality-oriented tasks and situations.

The conducted research found that 50% of respondents in both experimental and control groups had the low level of morality ideas; 27.3% in the experimental group and 29.4% in the control group had the medium level; and 22.7% in the experimental group and 20.6% in the control group had the low level. Based on the obtained data, the purposeful efforts were designed and organized to improve the level of morality ideas among the junior schoolchildren.

From September 2018 till May 2021, the formative stage of our experiment took place which involved fulfillment of the identified facilitating conditions in the pedagogical process of the primary school (Lyceum No. 26, Secondary General Education School with Advanced Study of Certain Subjects No. 30):

- integration of information from various fields of knowledge;
- regard for the regional and ethno-confessional specifics;
- selection of the learning content which encourages children's creativity and promotes their right to free choice.

For methodological fulfillment of the identified facilitating conditions (Buyanova et al., 2020), the supplementary general education (general development) program, 'The Beauty of My Soul', was developed and incorporated in the pedagogical process of educational facilities (Lyceum No. 26, Secondary General Education School with Advanced Study of Certain Subjects No. 30). The program conveys the basic understanding of the culture of the people with its centuries-old traditions, the family way of life, and the moral values essential to modern society. The program was divided in three parts: "We and Our Culture", "Our Family" and "Our Values".

We relied on the above-specified facilitating conditions when selecting the learning content for lessons for each part of the program. Having analyzed the results of the joint activities of teachers and students in the experimental class, we revealed the faster inclusion of children in the work on the program at one of the very first lessons on the topic "Beauty in Life and Art" which rather successfully fulfilled the condition of *integration of information from different fields of knowledge*, and as a result we managed to create the emotional climate favorable for discussion, contemplation and opinion exchange. The good foundation for that was the complementary effect of the combination of means: literary, music, artistic. When summarizing the results of this lesson, it was noted that children had extremely strong impressions after they had listened to the recordings of the organ music by Johann Sebastian Bach. Later, in written reviews of this lesson, 25% of students from the experimental group who attended the lesson indicated that the music was extraordinary and they liked it very much. Emotional response to the music was so strong largely because the listening was accompanied with the visuals. But even more important and valuable evidence of significance of integration was the activity of children, which we have noted when analyzing the products of their creativity, which clearly demonstrated improvement in cognitive, emotion-evaluative and activity-volitional components of morality ideas of junior schoolchildren.

As mentioned earlier, the research was conducted on the basis of general education facilities in the Republic of Mordovia. For that reason, the second condition we focused on was the *consideration of regional and ethno-confessional specifics*; we organized lessons which covered the major religious views of the Mordovians, Russians and Tatars (we explored the cultural traditions characteristic of most representatives of these peoples: pagan polytheism of the Mordovians and Russians (the children were provided information about the period preceding Christianization to give them an idea of the uniqueness of each nation and its history), Orthodox Christianity, and Muslims. Great interest among the students was aroused by information about calendar holidays, which were presented in a comparative manner: Trinity - Sabantuy - worshipping the goddess of fertility Angelpatiy; Maslenitsa - Nauruz, etc., with an emphasis on the process of integration of ethnic groups. Thus, fulfillment of the condition consisting in *the consideration of regional and ethno-confessional specifics* made it possible to lay the foundation for further strengthening the respect for the customs, traditions, culture and language of different peoples inhabiting the small motherland; ingraining the morality ideas of good-neighborly relations, friendliness and mercy to one's neighbor, industriousness as a valuable quality of the people.

*Providing children with an opportunity to express and use their creative abilities and the right to free moral choice as a*

facilitating condition for increasing the level of moral ideas among junior schoolchildren, allowed us to diversify the organizational and activity component of the process of instilling the ideas of morality among junior schoolchildren. Moreover, only the learning content selected based on this condition provides opportunities to organize children's activities in such a way that children use their right to offer their solutions to ethical, spiritual problems, corresponding to their worldview, beliefs, specific features of national consciousness and not contradicting the norms of public morality. It was this approach that predetermined the choice of the basic forms of lessons, which were reflexive dialogue and conversational discussion. Initially we had concerns about the appropriateness of such a form of work at primary school, but during the trial of the developed techniques we found that already in the junior school age the first experience of solving moral problems at the level accessible to the students can be acquired, and the chosen forms of lessons prove to be effective subject to a number of conditions which should be considered when designing and organizing activities that promote the ideas of morality.

The level of morality ideas of junior schoolchildren was measured by applying the criteria of their formedness to the outcomes.

During the control stage of the experiment (March-May 2021) a number of diagnostic procedures were performed with participants in the control and experimental groups to determine the level of morality ideas. In the experimental group 39% of participants showed high levels of the ideas of morality, which manifested through understanding of ethical categories, identification of a sufficient number of their correct attributes, the willingness to act in line with the moral standards, the moral aspirations in interactions with others; 38% of participants demonstrated the medium level; 23% of schoolchildren have low level of the ideas of morality. In the control group, the low level was shown by 39%, the medium level - by 36%, and the high level - by 25% of respondents.

## 5 Conclusion

The conducted research led us to the following conclusions.

The instilling of moral ideas in junior schoolchildren should be understood as a process of multifactorial both purposeful and spontaneous impact on the moral sphere of child's personality leading to the emergence of images of memory and imagination, laying the foundation for conceptual apparatus, moral motives of behavior and beliefs of a personality. Therefore, the task of a pedagogical employee is not only a purposeful positive influence on the moral sphere of a personality, but also the correction of the spontaneous influences of external information fields, facilitating the moral growth of a personality.

The results of the ascertaining stage of our experiment revealed that most junior schoolchildren had low level of the ideas of morality, which verified the need to take purposeful efforts directed at improving the level of morality ideas of junior schoolchildren.

The efficient tooling for raising the level of morality ideas of junior schoolchildren is the use of the supplementary general education (general development) program which involves the fulfillment of the following facilitating pedagogical conditions:

- integration of information from various fields of knowledge;
- regard for the regional and ethno-confessional specifics;
- selection of the learning content that encourages children's creativity and promotes their right to free choice.

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**Primary Paper Section: A**

**Secondary Paper Section: AM, AN**

## THE WORLDVIEW OF WOMEN HAVING BREAST CANCER UNDER THE FAVORABLE AND UNFAVORABLE COURSE OF THE DISEASE

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**Abstract:** Reduction of oncological disease morbidity and mortality is one of the paramount tasks of healthcare worldwide. The objective of this research is to study particularities of worldview in women having breast cancer under the favorable and unfavorable course of the disease. During the study, specific features of worldview have been found in women diagnosed with an oncological disease: female patients with the unfavorable course of the disease are convinced of their own luck and ability to control the events taking place. The pronouncement of these assumptions can serve as a predictor of the unfavorable course of the disease. The research findings act as a scientific basis for developing a psychological support system for BC patients.

**Keywords:** breast cancer, worldview, world assumptions, favorable course of the disease, remission, stable disease, spreading, recurrence, disease proliferation.

### 1 Introduction

The increase of oncological disease cases is noted throughout the world. As measured by specialists of the International Agency for Research on Cancer (IARC), 19,3 million new cancer cases and about 10 million cancer deaths were registered in the entire world in 2020 (Ferlay et al., 2020). In 2020, according to the cause of morbidity, breast cancer (11,7%) outpaced lung cancer (11,4%) as the world's most frequently diagnosed cancer (Ferlay et al., 2020). Among the female population of the world, breast cancer is the most frequently diagnosed cancer and the major cause of death due to cancer (Sung et al., 2021).

According to the data of the IARC, in Russia, the leaders of 2020 in terms of morbidity are colorectal cancer (13,1%), followed by breast cancer (12,7%), lung cancer (10,8%), prostate cancer (7,9%), and gastric cancer (6,3%). In 2020 mortality figures, Russia's first place among oncological malignant diseases is held by lung cancer (17,4%), with gastric cancer (8,9%), colon cancer (8,1%), breast cancer (7,4%), and pancreatic cancer (6,6%) pulling up (Ferlay et al., 2020).

So, according to the said statistics, it is breast cancer that is the most widespread among the world's female population. This disease bears a threat to subjects' physical health and life and varies in force and intensity of its psycho-traumatic impact. More specifically, on top of stress associated with the fear of death, a woman having breast cancer experiences emotional strain consisting in the fear of losing femininity due to the post-surgery cosmetic defect. In the oncological disease situation, women feel anxiety, insecurity, depression, and worry, which fuels exhaustion of the nervous and immune systems and entails the decrease of adaptive capacities. Subsequently, similar symptoms can have a negative impact on the course of the disease, effectiveness of treatment, and convalescence. In such a situation, the high importance of the system of world assumptions behind one's worldview is revealed.

The oncological disease can affect the world assumptions held by a subject, however, as the subject copes with the stress situation, her worldview can rebuild itself, thus ensuring the woman an opportunity to adapt to the new conditions of her life, as well as the feeling of security and stability. As of today, studying the specific features of worldview of women having breast cancer is a relevant topic. By finding out differences in the world assumptions system of women with the favorable and unfavorable course of the oncological disease, psychological predictors of the onset of disease remission or, conversely, emergence of complications can be discovered.

### 2 Literature Review

When analyzing studies available, several groups of factors associated with the breast cancer development risk can be found. Considering reproductive factors of breast cancer development, Li et al. (2015) note that in nulliparae, the risk is almost twice as high as compared to women having given birth to three and more children. The authors also emphasize the association of a later age of the first childbirth (after 35) and the emergence of breast cancer as compared to women who have had children before 20 (Li et al., 2015). Breastfeeding, the prolonged one especially, can lead to reducing the breast cancer development risk: cancer morbidity goes 4,3% down per each 12-month period of breastfeeding (Collaborative Group on Hormonal Factors in Breast Cancer, 2002). A number of researchers point out that menstrual characteristics (early menarche onset age, late menopause age, some types of menopause) can act as risk markers for the development of malignant neoplasms of breast (Li et al., 2007; Brinton et al., 2018; Collaborative Group on Hormonal Factors in Breast Cancer, 2002). The evidence of relation between women's use of oral contraceptives with the emergence of breast cancer was described in the world epidemiological study by the Collaborative Group on Hormonal Factors in Breast Cancer (2002).

Detailing the genetic risk factors of breast cancer, authors note that women who have had breast cancer cases among their nearest blood relatives risk developing breast cancer 1,5-2 times more (Familial Breast Cancer Working Group, 2001). Alongside this, the higher risk of breast cancer was observed in the female patients exposed to radiation at any age (Kaiser et al., 2011).

As for endogenous breast cancer emergence factors, many researchers emphasize that endogenous estrogens increase the risk of breast cancer: there is the direct relation between the blood estrogens level and the risk of developing malignant neoplasms (Yager & Liehr, 1996; Bolton et al., 1998; Colditz 1998; Thomas et al., 1997; Zanetta et al. 2000, Suzuki et al., 2009). Progesterone plays the key part in the development of breast, and according to experimental findings, progesterone metabolites can both reduce and increase the risk of breast cancer (Wiebe, 2006).

Although the interest in the problem of the oncological disease of breast in women is growing, the circle of psychological phenomena studied within this sphere is quite limited. It should be noted that works by P. Revidi (1983), H. J. Eysenck (1994), L. Temoshok (1987), Y. Chida (Chida et al., 2008), I. G. Malkina-Pykh (2008), M. G. Ivashkina (2010), N. V. Tarabrina (Tarabrina et al. 2006), D. A. Tsiring (Tsiring et al., 2019), and others describe psychological prerequisites of the development of malignant neoplasms. As breast cancer risk factors, these authors identify restraint in expression of emotions (Revidi, 1983; Temoshok, 1987; Rautalin et al., 2018; Fasano et al., 2020), the marked feeling of guilt and lack of self-confidence (Revidi, 1983), the external locus of control and low significance of the health value (Ivashkina, 2010), non-productive strategies of coping (Chida et al., 2008; Fasano et al., 2020), feelings of hopelessness and one's own helplessness (Temoshok, 1987), rigidity of attitudes (Revidi, 1983), the feeling of despair and depression (Revidi, 1983), and so on.

On top of its threat to physical health and life, breast cancer is distinguished by the force and intensity of its traumatizing impact which consists in the fear of losing femininity due to the post-surgery cosmetic defect suffered. This disease can be perceived as a factor disrupting one's social and psychological adaptation and affecting one's relationships with others, too. J. Fasano et al. (2020) emphasize the role of psychological features in coping with stress caused by the prolonged treatment process. H. J. Eysenck (1994) notes that in case of getting cancer, a person having such personality traits as self-sacrifice, conformity, suppression of anger, manifestation of anxiety, worry, and some others faces death more quickly than people with other personal features do.

The high importance of the system of world assumptions is revealed in the situation of the oncological disease. A subject's world assumptions turn out to be affected by the strong stressful event, so, change of the existing assumptions and "destruction" of the worldview are observed. For the subject, the worldview and view of one's own self provides the needed support to lean on and the feeling of stability in the dynamic conditions of the present-day reality. Using the system of world assumptions which constitute worldview, one structures one's own experience and forms the model of behavior. According to M. A. Padun and A. V. Kotelnikova (2012), "World assumptions are generalized, implicit, stable ideas of man about the world around him, his own self, and relations between the self and the world" (p. 98).

As one copes with the stress, one's system of world assumptions is regained, yet it differs from the previous one which used to be there before facing the traumatic situation of the oncological disease. Restoration of worldview which ensures a subject the feelings of security and stability becomes an especially essential and urgent process in the situation of coping with stress, mental and social adaptation to the new realia of life (Sirota & Moskovchenko, 2014). With regard to this, it seems important and relevant to find out particularities of worldview in patients having an oncological diagnosis under various courses of the disease. This research deals with exploring the hallmarks of worldview in women having breast cancer under the favorable and unfavorable course of the disease, in particular: remission of the disease (complete healing or reduced activity of the lesion and its clinical symptoms), stable disease (minor growth or reduction of the tumor without new any lesions emerging), spreading of the process (the pathological process invading the organ or even the entire body), tumor recurrence (the malignant disease coming back after the period of remission), tumor proliferation (new distant metastases emerging with possible qualitative changes in the structure of the neoplasm).

### 3 Research Methodological Framework

Given the relevance of the problem of breast cancer prevalence and development, current prerequisites for exploring psychological particularities of BC patients in various disease courses, the objective of this work has been worded as follows: to study specific features of worldview of women having breast cancer with the favorable and unfavorable course of the disease. The research objective has conditioned determination of a number of research tasks. Alongside diagnosing hallmarks of worldview in female patients having breast cancer with the favorable and unfavorable disease course, the authors intend to find out average indicators of pronouncement of their world assumptions and to compare the resulting figures with the normal values of the questionnaire. They also expect to empirically confirm worldview distinctions in the female BC patients having the favorable and unfavorable course of the disease. Completing these research tasks and achieving the said objective will further on allow identifying psychological factors which contribute to better remote effectiveness of treatment. The indicators of worldview of women having the favorable or unfavorable disease course can act as a criterion to forecast the progress of the disease.

The general layout of the empirical research was determined by the objective and tasks of the work. In line with the research objective, the sampling was made up of two clinical groups. The

first group of the tested ones (N=89) included women having breast cancer with the favorable course of the disease (remission of 6 months and more or a stable disease status). The second group of the tested ones included the female BC patients with the unfavorable course of the disease (N=52): those in conditions of the pathological process spreading, in the situation of recurrence of the malignant disease after a remission period, or of tumor proliferation.

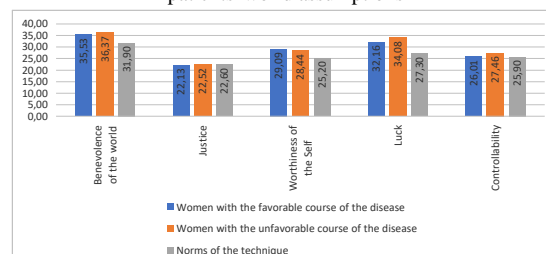
The empirical research was based at the State Budget-funded Healthcare Institution "Chelyabinsk Regional Clinical Center for Oncology and Nuclear Medicine", Chelyabinsk, Russia. The research was conducted within January-June of 2021 and covered the total of 141 women aged 33 to 80.

As the research methods, the authors used questionnaire survey, testing, and mathematical data processing methods. Testing and questionnaire survey were conducted on an individual basis. The questionnaire enabled the authors to collect data on social and demographic parameters. R. Janoff-Bulman's World assumptions scale as adapted by M. A. Padun and A. V. Kotelnikova (2012) was used as the research technique. Mathematical methods of statistical data processing are represented by the descriptive statistics ones and nonparametric comparison methods (Mann-Whitney U-test). In this study, average indicators were used that allow evaluating the difference in pronouncement of the tested ones' psychological characteristics as compared to the normal values set by the techniques. The nonparametric Mann-Whitney U-test enabled the authors to identify significance of distinctions in values of the characteristics under study between the two samples: the women being at the remission stage and those having the oncological diagnosis at the baseline.

### 4 Results and Discussion

During the conducted study of particularities of worldview in women under the favorable and unfavorable course of the disease, distinctions in a number of indicators have been found. Figure 1 shows the results of exploring world assumptions in women having breast cancer, as well as the reference norms of the technique used.

Figure 1 Correlation of average values on indicators of BC patients' world assumptions



Source: authors' own processing

According to the findings, the assumptions about luck and benevolence of the world are more pronounced in women having the oncological diagnosis under the favorable and unfavorable course of the disease as compared to norms of the questionnaire. One's idea about luck is associated with the individual's assumption about being a lucky person on balance. Women having breast cancer with the unfavorable course of the disease are convinced of their luck to a greater extent. In spite of difficulties in treatment of the disease, the women stay alive, which enables them to make a conclusion about their own luck.

The assumption about benevolence of the world around one implies a subject's conviction in it being safe or unsafe to trust the world. This assumption is pronounced in both groups under study. Women having breast cancer believe the world is safe and people around them are in general kind and trustworthy. In the BC patients, the assumption "Worthiness of the Self" implying one's being sure of the fact that one is a person worthy of love and respect is more pronounced as compared to norms of the questionnaire. In the situation of the threat to life and health, the

women having the oncological disease are convinced of the value and importance of their own Self to a greater extent.

The assumption about one's ability to control events happening to one is pronounced to a greater extent in women with the unfavorable course of the disease. On the one hand, pronouncement of this indicator can be indicative of the fact that they undertake responsibility and aim to regulate their own life with the help of control. Such control turns out to be productive if a subject's composure is justified by the external conditions. On the other hand, excessive control can lead to suppression of emotional reactions in difficult situations and inhibition of actions. The world assumption about justice of the world around one is pronounced in women with the favorable and unfavorable course of the disease at approximately the same level. This assumption expresses one's certainty of the fact that good and bad events are distributed among people according to the principle of justice: everyone gets what they deserve.

Further on, the authors verified the significance of distinctions using the nonparametric comparison method, Mann-Whitney U-test, as applied to pronouncement of the indicators of worldview – world assumptions among the BC patients (Table 1).

Table 1 Results of comparison of world assumptions in women having breast cancer

World assumptions	Average rank		U	p
	Women with the favorable course of the disease	Women with the unfavorable course of the disease		
Benevolence of the world	99,16	108,24	3549,5	0,334
Justice	99,60	105,02	3665,0	0,562
Worthiness of the Self	103,06	97,00	3666,0	0,519
Luck	96,60	<b>115,63</b>	3165,0	<b>0,043</b>
Controllability	97,32	<b>113,57</b>	3272,5	<b>0,083</b>

Source: authors' own processing

According to the findings, women with the unfavorable course of the disease differ significantly from those having the favorable disease course in the indicators of Luck ( $p = 0,043$ ) and Controllability ( $p = 0,083$ ). The women being at the disease proliferation stage, in case of recurrence or tumor spreading note they are quite lucky people and think fortune favors them. Evaluating their life, the female patients with the unfavorable course of the disease stress they are lucky more often than others are; they recollect they had to count on a lucky coincidence earlier in life.

Personal world assumptions can undergo dramatic change under the influence of traumatic events suffered by an individual, the oncological disease included. So, it is possible that the assumption about their own luck could form in the women after being diagnosed with the disease and/or in the process of treatment. The women having breast cancer in the situation of the unfavorable disease course can convince themselves of being lucky and fortunate in life, thus calming themselves down and comparing themselves to ones whose disease unfolds in a more severe form and leads to the lethal outcome.

Alongside the assumption about luck, the one about controllability is more pronounced in women with the unfavorable course of the disease as compared to those having the favorable disease course. The assumption about controllability implies a subject's belief that people can prevent difficult events by their actions. Thus, if one is more cautious, one behaves correctly, and pays more attention, and then one will be able to escape negative events. Under the unfavorable course of the disease, the female patients are convinced they can control events happening to them and can act so that the situation lines up in their favor.

According to the data obtained, women with the unfavorable course of the disease (proliferation, spreading, recurrence) are on the one hand convinced that fortune favors them, they are lucky in general, and they can hope for a lucky coincidence. On the other hand, in the same female patients, the assumption about their ability to control developments so as to opt for a more advantageous behavior strategy in difficult life situations is pronounced.

## 5 Conclusion

As of today, there is only a limited quantity of studies highlighting specific psychological features of BC patients. The research conducted allows finding out hallmarks of worldview in women having the oncological diagnosis and outlining the prospects for further research works. As groups to be studied, the authors opted for women with the favorable and unfavorable course of the disease. These groups were selected for identifying particularities of worldview which contribute to better remote effectiveness of treatment.

World assumptions making up an individual's worldview have an effect on the individual's thinking, behavior, and emotional condition. In survivors of the traumatic event and in persons who have not experienced any, world assumptions related to one and to the world around one can differ considerably. At this stage of research, the authors suppose that pronouncement of assumptions about luck and controllability can serve as a predictor of the unfavorable course of the disease. This conclusion needs more evaluation in the course of further empirical studies of the influence of women's assumptions about their own luck and controllability on their chances of survival.

The research findings can act as a scientific basis for developing a psychological support system for BC patients.

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**Primary Paper Section:** A, F

**Secondary Paper Section:** AN, FD

# LEARNING CHINESE CIVILIZATION AT RUSSIAN PEDAGOGICAL HIGHER EDUCATIONAL INSTITUTIONS: THE EXPERIENCE OF MORDOVIAN STATE PEDAGOGICAL UNIVERSITY NAMED AFTER M. E. EVSEVIEV

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**Abstract:** The objective of the paper is to find out content-related and methodological particularities of learning Chinese civilization at Russian higher educational institutions. As an example, the experience of teaching history and culture of China to students of Mordovian State Pedagogical University named after M. E. Evseviev was taken. Methodologically, the paper relies on the dialectic, comparative historical, and hermeneutic methods; as applied to this topic, they help detail specific features of the way history and culture of China are taught in the Russian system of higher humanitarian education. Materials of the paper are of practical importance for improving the academic process at higher educational institutions in terms of methodology and content.

**Keywords:** China, Confucianism, civilization, history, culture, higher educational institutions, teaching.

## 1 Introduction

The relevance of the topic of this paper is first of all associated with the growing geopolitical importance of China in the contemporary world, as well as with the strategic nature of the partnership between the Russian Federation and People's Republic of China.

So, the necessity for Russian students of the humanities and social sciences to learn the history and culture of China seems a rhetorical question. In fact, this question is answered by the special and unique world of Chinese civilization in all its diversity, with its fundamental stratum of cultural heritage. China is a world counting the centuries-long history and representing one of the most influential powers within geopolitical realities of today at the same time. This is a world to have created a culture which is unique in its richness and intellectual sophistication. Finally, it is a world to closely interact with Russia as the country's historical and very important neighbor.

With regard to the above, it seems completely obvious that specialists in humanities (historians, political scientists, social scientists, philologists, lawyers – the list can be continued) must find their bearings in the features of Chinese civilization which has played and continues playing such an important part in the history and culture of mankind.

Touching on the question of the scope in which Chinese civilization is taught in the Russian higher school, as well as the academic subjects within which it is taught, one has to take into account the specific circumstances of particular higher educational institutions. So, Russia has scientific research institutes, higher educational institutions, and faculties which train professional Sinologists in various domains of humanities – historians, philologists, political scientists, diplomatic officials, etc. However, fundamentals of China's history and culture are taught at most small-town higher educational institutions, too. This paper presents the relevant experience of one of the leading pedagogical higher educational institutions of the Volga Region – Mordovian State Pedagogical University named after M. E. Evseviev.

## 2 Literature Review

For students learning about China, a great help is the monographic and reference literature which is truly immense and widely available in libraries (both in the local ones of higher educational institutions and the public ones). The authors believe that here, an important task of teachers is to help students orient in this endless sea of collections of papers, author research works, dictionaries, and encyclopedias. For instance, there is a sort of "canonic" (let this name not be taken totally seriously) list of authors whose works are perfect to introduce readers to the "boundless and brilliant" world of Chinese civilization – by giving them the most essential knowledge, without which it is difficult or even impossible to find one's way in the history and culture of the "Celestial Empire". To name a few such authors, for example, this is R. Kruger (2014), V. V. Malyavin (2011a), L. S. Perelomov (2011), and C. P. Fitzgerald (2014).

Further on, students can expand this list on their own, depending on the topic they are working on. So, as for China's medieval culture, it is a good idea for one to consult works of the above mentioned V. V. Malyavin (2011b) first of all; concerning the phenomenon of the "Chinese dream" of today – works of Z. Xinmin (2018) and so on.

In this ocean of books, a separate place belongs to personalia dedicated to "giants" of the contemporary history of China – Chiang Kai-shek and Mao Zedong (e.g., fundamental works of J. Fenby (2006) and P. Short (2005)).

In this relation, sources on China's classical culture are quite important, too; they are also published and represented not only in readers. So, there are Russian-language translations of "Analects" of the great Confucius (2013), Taoist treatise "Tao Te Ching" (2013), and many other pearls of Chinese intellectual culture having determined the image of this civilization.

## 3 Research Methodological Framework

The objective of the research is to analyze particularities of the way the history and culture of China are taught at Russian higher educational institutions (using the case of Mordovian State Pedagogical University named after M. E. Evseviev). Tasks of the research are to find out the content-related segment of subjects "The ancient history" and "The modern and contemporary history of Asian and African countries" associated with China, to analyze methodological support of teaching this topic, as well as individual controversial issues in China's history of the 20th-21st centuries which can become the subject of debate at seminar classes.

In terms of methodology, the paper relies on the dialectic, comparative historical, and hermeneutic methods; as applied to this topic, they help detail specific features of the way history and culture of China are taught in the Russian system of higher humanitarian education. So, the dialectic method allows viewing Chinese civilization in its development on the understanding that basic attributes conditioned by the influence of Confucianism have been there for millennia. In this case, the comparative historical method implies focusing students' attention on succession of individual epochs in the history of the "Celestial Empire". Finally, the hermeneutic method as that of analyzing written sources is critical because one cannot gain an insight into Chinese civilization without studying its classical texts.

## 4 Results and Discussion

The typical case of the way the history and culture of China are taught in the Russian system of higher education is Mordovian State Pedagogical University named after M. E. Evseviev to which the authors of this paper are linked by many years of

work. Here, China is studied chiefly by students of the faculty of history and law, as well as of the philological faculty.

First of all, Chinese civilization is viewed within the basic academic subjects of "The ancient history" (year I of the full-time and part-time departments of the said faculties) and "The modern and contemporary history of Asian and African countries" (years III-V of the full-time department; years IV-V of the part-time department of the said faculties).

At the ancient history classes, students learn features of the ancient Chinese civilization. Here, one has to take into account the limited scope of academic hours allotted for this subject which involves covering an immense material – the history of civilizations of the Ancient East, as well as of Classical antiquity (Ancient Greece and Rome). This is why, given such rigid timing, the Ancient China is fit in one or two classes only, dealing with the first empire in the history of the "Celestial Empire" (Qin) and with Confucianism as the spiritual basis and foundation of this great Far-Eastern civilization.

A slightly larger scope of classes on further centuries-old history of China is provided for in "The modern and contemporary history of Asian and African countries". However, it has to be noted that while this is a smaller "introductory" course at the faculty of philology, various departments of the faculty of history and law have quite a lot of academic hours allotted for the history of the East.

In spite of the above name of the subject, its structure incorporates a topic on the history of the late Chinese Middle Ages – "The Manchu Conquest of China and the formation of the Qing Empire", discussing the events of the 17th century, – as a sort of introduction to "The modern and contemporary history".

The modern history of China covers the following topics: "The Open Door Policy of China, the Opium Wars and the Taiping rebellion"; "The Qing Empire in the 1870s – 1890s: first attempts of modernizing China (the Self-Strengthening Movement and the Hundred Days' reform)"; "China at the beginning of the 20th century: from the Xinhai Revolution toward the World War I".

The relevant problems of the contemporary China are detailed in the final part of this basic subject of the course, i.e., "The contemporary history", as follows: "China in 1918–1949: from the formation of the united national front to the formation of the PRC"; "People's Republic of China in the epoch of "the great experiments"; "The "Chinese way" and "Chinese dream": market reforms and enhancing the geopolitical influence". The specific features of the said academic subject implies (which is clear from the names of the topics outlined) the priority attention to questions of China's political and social-economic history. Regrettably, it has to be stated that questions of the Chinese culture, both intellectual and artistic, are only viewed here passingly, as a sort of "lyrical digressions" designed for keeping the student audience interested. The cause of such an approach is but on the surface: this is the lack of study time, as one has to fit an immense stratum of the material into a limited number of lectures and practice classes.

Some words must be said about what materials (course and further ones) are currently used for teaching the history of China at higher educational institutions (again, let an average Russian higher educational institution be used as a case, and not the elite RAS institute training professional Sinologists).

To begin with, as of today, there are quite a lot of high-quality, sound textbooks and study guides for higher educational institutions on the history of China. The first one to be mentioned is the large-scale multi-volume educational edition "The history of China from the earliest times up to the early 21st century": without overstating it, all the leading Sinologists of Russia have contributed to creation of the series (The history of China, vol. 1, 2016; The history of China, vol. 2, 2016; The history of China, vol. 3, 2014; The history of China, vol. 4,

2016; The history of China, vol. 5, 2016; The history of China, vol. 6, 2014; The history of China, vol. 7, 2014; The history of China, vol. 8, 2017; The history of China, vol. 9, 2016). Notably, the last volume of this project, dedicated to the PRC of the second decade of the 21st century, is currently being prepared. There is also a textbook "The history of China" by L. S. Vasiliev, A. V. Meliksetov, Z. G. Lapina, and A. A. Pisarev (2007), plus M. E. Kravtsova's author textbook of the traditional Chinese culture (2003). Alongside the above, the history of China is described in higher educational institution textbooks on the ancient history (The Ancient History, 2019; Perfilova, 2018; The History of the Ancient East, 2003) and on the modern and contemporary history of Asian and African countries (Safronov & Losev, 2019a, 2019b).

It must be noted that the content of the educational material on China for Russian higher educational institutions has undergone certain transformation in the recent decades. This is associated with the verge of the 1980s – 1990s seeing drastic, revolutionary changes in the Russian humanitaristics. They involved separation from the monopoly power of the Marxist methodology and the contemporary Russian historians, philosophers, and political scientists' embarking on a challenging but, definitely, creative, and extremely interesting search for new conceptual approaches.

With regard to this, the Russian China Studies were no exception, too. So, certain changes are confirmed by publication of new textbooks on the history and religions of the East (including sections about China, among others) in the 1990s – early 2000s; these textbooks presented various approaches to the history of African and Asian societies. In particular, penned by the prominent Russian Sinologist, professor L. V. Vasiliev (1983, 1994), "The history of the East", the two-volume author work, and "The history of Eastern religions" supplementing it relies on the variant of civilization methodology which is close to A. J. Toynbee's interpretation (2019) given in "A Study of History", his classical work. By contrast, "The modern history of Asian and African countries" (in three parts) (2004) and "The contemporary history of Asian and African countries" (in three parts) (2018) prepared by the academic and teaching team of the historical faculty of Moscow Pedagogical State University and edited by A. M. Rodrigues (2004, 2018) presents a view of the history of this region in terms of formations, i.e., from the standpoint which is largely consistent with the Soviet historiography of the question.

When teaching the history of China, at the beginning of working with virtually any student audience, one has to face the fact that this great Asian civilization is a terra incognita for the vast majority of the present-day young people. Admittedly, "every second one" of them knows that it is the Chinese who invented gunpowder and compass. Many have heard something about Confucius and Mao Zedong but it is only individual students who have an idea about doctrinal features of Confucianism and Mao's "great experiments". This kind of information vacuum appears to be all the more surprising if one recollects that China is one of Russia's most important neighbors with whom a strategic alliance has been formed in fact over the latest decades.

This is why, when working with students, one has to draw their attention to the basic, fundamental, pivotal aspects of Chinese civilization above all and to keep returning to revising them – because without knowing them, further discussion of the topic makes no sense at all.

With regard to this, what has to be spoken about most importantly is Confucianism, the philosophy and doctrinal ideology to have been determining the image of this great Far-Eastern civilization for millennia, from the oldest times to the present day. The doctrine of Confucius (2019) worded in the famous "Analects of Confucius" ("Lun Yu") has become the quintessence of the Chinese cultural code and Chinese ethos, the way being is perceived and experienced.

So, the most important task of teachers seems to be presentation of the topic in question in the form of a vivid story containing

curious and entertaining details alongside the scientese notions and complicated terms which are compulsory for learning. This can be achieved quite easily, as Chinese history and culture is abundant with interesting figures, tragic, or, by contrast, amusing stories, and curious facts. It is Chinese culture that yields a rich material in this aspect: stories about Taoist men of wisdom, real or mythical, with their paradoxical thinking and sophisticated idea about fluctuation of being (a classic example is Chuang-Tzu's butterfly dream) spark excitement in the student audience unflinching. Characters of the contemporary history of the "Celestial Empire" evoke as lively a reaction, too, especially Mao Zedong – who is not only the colorful but also the major figure in China's political life of the 20<sup>th</sup> century, to say the least of it.

Speaking about issues in teaching the history of China to student audience, it has to be stated that for many (if not most) students, Chinese names and individual terms present certain difficulties in memorizing. Anyway, it is merely impossible to find one's bearings in the history and culture of this country without many of them. So, in one respect, personal abilities of individual students have to be taken into account here (for the so-called "strong" students, just the above terms turn out to pose no special difficulty for learning). The authors of the paper are far from holding a snobbish attitude to their younger colleagues getting to grasp the boundless world of Chinese history and culture (be it with varying success in this field, even). One must remember that it is students who are most important, if not the most important, participants of the work on the subject under consideration. Basically, it is to them that the entire immense layer of factual and theoretical knowledge is addressed.

## 5 Conclusion

On the one hand, at the majority of Russia's higher educational institutions (except the few higher educational institutions and faculties of the Orientalist focus), China's history and culture are taught in a rather limited way. This is first of all true for the faculties of history, where students get acquainted with this great Asian country at the classes of "The ancient history" and "The modern and contemporary history of Asian and African countries". On the other hand, the authors of this paper believe that even in such a format, high-quality teaching of the history of China still can give the future specialists a quite relevant idea about the particularities of Chinese civilization from the oldest times up to nowadays. As for more profound knowledge of this topic, students can get it when writing their bachelor's and master's theses and within the student science (preparing papers and presentations for round tables and student conferences). On top of this, the methodological support available for teaching the history and culture of China (study texts, multivolume ones included) is of quite a good quality as of today.

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**Primary Paper Section: A**

**Secondary Paper Section: AA, AM**

## PERSONAL RESOURCES IN WOMEN DIAGNOSED WITH BREAST CANCER HAVING VARIOUS SOCIAL AND DEMOGRAPHIC CHARACTERISTICS

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**Abstract:** Breast cancer is the leading oncological disease among all malignant neoplasms. This is a severe medical and social disease. The objective of the research is to analyze the correlation of hardiness and coping strategies as personal resources in women having breast cancer with various social and demographic characteristics. The study involved 186 women diagnosed with breast cancer not earlier than 6 months before the point of the survey. Comparative analysis of personal resources (hardiness, coping strategies) in the women having breast cancer with various social and demographic characteristics has found some distinctions in manifestation of personal resources aimed at coping with the serious illness.

**Keywords:** oncopychology, breast cancer, personal resource, hardiness, coping strategies, social and demographic characteristics.

### 1 Introduction

According to the world statistics, over 1,5 million women have been diagnosed with breast cancer, and around 400 thousand cases face the lethal outcome (Bray et al., 2018). Even with the advanced methods of breast cancer diagnostics and treatment, the survival rate remains insufficiently high. The incidence of this oncological disease is broad throughout all developed and developing countries. The disease affects all strata of the population, with their social status and age varying. Some 30% women die within the first year after being diagnosed. Getting the oncological diagnosis is an extreme situation for the women which demands from them powerful psychological resources to be able to cope, level out the stress, realize, and build a new life strategy aimed at treatment.

The chronic nature of the life threat due to the oncological disease present and new stressful events can trigger its recurrence (Lukoshkina et al., 2016). V. L. Matrenitsky (2018) sees the cause of breast cancer recurrence in women's realizing the role of stress in the oncological disease only partially. O. D. Rozhkova (Matrenitsky, 2018) notes that after the treatment process is completed, female patients go on using the same coping strategies which they used to have before the malignant neoplasm was found – they make no attempts to change their repertoire of coping strategies, which increases the risk of aggravation. Coping behavior in women with breast cancer was explored in the works of N. A. Rusina (2019), N. A. Sirota and B. A. Fetisov (2014), D. V. Moskovchenko (Sirota & Moskovchenko, 2014), I. V. Zapesotskaya (2016), N. V. Deineka (2018); it was also discussed in studies of N. V. Tarabrina, M. A. Padun (Tarabrina et al., 2008), and others.

Studying the contribution of personal traits into the self-regulation and self-determination processes, the authors of research works use such terms as the "potential", "resources", and "resources of personality". In psychological literature, resources are considered as significant predictors of well-being and quality of life (after Ivanova, 2013; Diener, Fujita, 1995; Holohan, Moos, 1990). According to S. E. Hobfoll's conservation (Hobfoll, 1989; Hobfoll & Shirom, 1993) of

resources theory, the latter are classified into the objective, personal, and energetic ones. Within studying psychological predictors of the course of the oncological disease, it is personal resources that are of interest: they act as fundamental components of the individual capacity for adaptation and they play the primary part in the context of coping with stress. Personal resources are personal features, such as optimism, self-efficiency, hardiness, coping strategies, locus of control, etc. It has to be noted that resources do not exist independently of each other but they represent a system, a resource reserve, possessed by an individual. Resources are interrelated and interdependent; the lack or loss of one resource can be compensated for by the presence or acquisition of another one. However, medical studies do not have any data dealing with exploration of the set of psychological factors which are associated with particularities of the disease course, which help extend the periods of remission and reduce the recurrence risks, and which would be considered as a personal resource. Sufficient attention is not paid to psychosocial, social and demographic factors determining successful adaptation to the disease, and to psychological resources in overcoming the recurrences – i.e., those individual psychological features of the patients which can act as favorable factors of the disease course and elements to rely on in psychological support. There are only occasional research works studying the positive role of certain psychological particularities of personality in the struggle for survivability in conditions of the oncological disease (Finaghenova, 2009; Chulcova & Pestereva, 2018; and others).

As psychological resources of personality, the authors identify strategies of coping behavior (coping strategies) and hardiness. These psychological features are conventionally discussed in the psychological science as a resource for overcoming difficult life situations.

### 2 Literature Review

Studies of psychological particularities and mental state of breast cancer patients are quite relevant as of today. The problem of the role played by psychosocial factors in the development of malignant neoplasms remains unresolved, and there has been no conclusive opinion on this question so far. Finding out and studying the factors which influence the incidence and survival rate of breast cancer patients, understanding the mechanisms of stressful events acting on an individual's mind can contribute to solving the problem of the psychosomatic nature of this disease, as well as possible somatic psychological consequences.

Breast cancer is accompanied by the strong emotional tension; it has a psycho-traumatic impact on the patients and touches on many aspects of their life. J. Fasano et al. (2020) note that the contribution of life events into the forecast of breast cancer is not high; however, the author emphasizes the leading role of the particularities of coping with the diagnosis situation, as well as with the stress caused by the prolonged treatment process. Understood as the "conscious behavior aimed at intensive interaction with the situation – changing it (for the controllable ones) or adapting to it (for the uncontrollable ones)" (Kryukova, 2008, 2010) within this research, coping behavior implies the use of coping strategies for overcoming the difficult life situation. A limited repertoire of coping strategies hinders productive coping with the stress which accompanies female breast cancer patients at the point of their oncological diagnosis being announced, during their preparation for surgery, throughout the post-surgery treatment, and after discharge from the hospital (Tsiring & Evstafeeva, 2020; Tsiring et al., 2019; Lukoshkina et al., 2016). The psychological science has amassed numerous works discussing the coping behavior strategies in patients with malignant neoplasms of various localizations. Coping strategies are studied within the context of treatment motivation of oncological patients (Zapesotskaya, 2016), with regard to personality features of cancer patients (Tsiring & Evstafeeva, 2020), to varying degree of emotional

maladjustment (Makhnach, 2011), and in relation to cognitive and emotional indicators (Sirota & Moskovchenko, 2014). Coping resources are explored on samples of women having breast cancer (Sirota & Fetisov, 2012).

According to S. R. Maddi, hardiness is a personality trait fulfilled by a special pattern of the structure of attitudes and skills enabling one to consider whatever changes happening to one as new opportunities. The pronouncement of this quality helps not only develop one's personal potential but also assess adverse events as less traumatic and form a new experience of successful coping with the stress (Nalivaiko, 2006; Leontiev & Rasskazova, 2006). Research of hardiness in patients having oncological diseases gives evidence about the manifestation of constituent elements of hardiness in cancer patients being not homogeneous. The Commitment indicator is validly higher in persons receiving chemotherapy treatment alongside other methods of treatment of the oncological pathology. The found higher value of Control as a feature of hardiness allows supposing significance of the Control indicator within the structure of hardiness during the patients' interaction with their close social environment (Sharova, 2016).

Thus, each of the described psychological phenomena is studied in relation to personality features of cancer patients, to the etymology and course of this chronic disease; however, there has been no research of psychological characteristics as a set serving as predictive markers of the course of the oncological diseases. The necessity of an integrated study of personality features which represent the personality's systemic mental organization of patients having malignant neoplasms is evident. This approach to exploring psychological predictors can serve as a scientific basis for developing the system of psychological support for patients with malignant neoplasms, identifying the risk groups of getting malignant neoplasms of certain localizations. Analysis of relevant scientific sources points to the lack of integrated studies of psychological predictors of the course of oncological diseases, their functioning as a coherent personal resource, and the structure of the said resource. Applying the resource-centered approach to studying the disease course in patients having the oncological diagnosis can open up the opportunity of gaining an idea about the mechanisms by which particularities of cancer patients' psychological personality organization influence the course of their disease. It can also help analyze the existing relationships and assess resource factors possessed by the patients which can determine the disease outcome.

### 3 Research Methodological Framework

The objective of this research is to analyze the correlation of hardiness and coping strategies as personal resources in women having breast cancer with various social and demographic characteristics. According to the research objective, the following empirical tasks were determined: to diagnose personal resources (coping behavior and hardiness) in women having breast cancer; to compare particularities of coping behavior in the respondents having different social and demographic characteristics (age, marital status, employment status, the level of education); to compare indicators of hardiness in the tested ones having different social and demographic characteristics (age, marital status, employment status, the level of education); to find out and analyze correlation relationships of the indicators of hardiness and coping strategies in the women.

The general layout of the empirical study was determined by the objective of the work. According to the research objective, the sample of the tested ones included 186 women aged 26 to 80 (with the average age being 55 years old, Med = 57, Min = 26, Max = 80) and living in Russia. The study was conducted within June, 2019 and May, 2020. In the entire sample of the women, breast cancer was diagnosed not earlier than 6 months before the point of the survey. All the female patients had the luminal tumor type, with the following distribution in stages: stage I – 59%, stage II – 22.7%, and stage III – 13.6%.

For obtaining the empirical data, the authors used survey methods. The technique "Ways of Coping Questionnaire" by R. Lazarus (as adapted by T. L. Kryukova, E. V. Kufiyak, M. S. Zamyshlyayeva) (Kryukova, 2010) allows finding out ways of overcoming difficult life situations, diagnosing the focus of a subject's efforts in coping with difficulties: whether they are aimed at transforming the situation, avoiding it, or at reducing the inner emotional tension caused by the stress. The test of hardiness (Hardiness Survey, S. R. Maddi, as adapted by D. Leontiev) (Leontiev & Rasskazova, 2006) allows assessing the cancer patients' system of beliefs about themselves, the world, and relationships with it. Alongside the said questionnaires, the authors used their independently prepared form to collect the data about social and demographic indicators. The form contains questions on the marital status of the respondents, their employment status, level of education, and age.

For the research, the individual data collection mode was used. To form the motivation for participating in the survey, the authors built the rapport of trust with the tested ones, explained instructions to the respondents, and rendered help for understanding and completing the questionnaires, if required. There was no time limit for filling out the questionnaires.

The authors used the SPSS Statistics 24 software for processing and analyzing the data obtained (including descriptive statistics methods, Mann-Whitney U-test, H-Kruskal-Wallis test, and Spearman's rank correlation coefficient).

### 4 Results and Discussion

For studying particularities of coping behavior, the tested ones were differentiated into groups depending on the number of objective parameters: age, marital status, employment status, and the level of education. The research findings are given below.

The sample of the respondents was subdivided into 5 parts based on their age: the female patients aged 30 to 40 (26 women), the ones aged 41 to 50 (36 women), the ones aged 51 to 60 (44 women), the ones aged 61 to 70 (50 women), and the female patients aged 71 to 80 (18 women). Some respondents have not specified their age, so their data are used in analyzing particularities of coping behavior according to other indicators. The mean values for coping behavior indicators in different age subgroups of the surveyed ones are given in the table below (Table 1).

Table 1 Mean values of coping behavior indicators in different age subgroups of the tested ones

Names of coping strategies	Mean values (aged 30-40)	Mean values (aged 41-50)	Mean values (aged 51-60)	Mean values (aged 61-70)	Mean values (aged 71-80)	Norms of the questionnaire
Disclaiming	9,577	9,139	8,558	8,26	7,667	8,998
Distancing	10,038	9,306	10,349	10,6	9,611	8,664
Exercising self-control	13,769	13,028	13,674	14,13	12,889	13,687
Seeking social support	13,192	12,111	10,535	10,08	10,5	10,692
Accepting responsibility	7,269	7	7,628	8,06	7,889	7,364
Escape/Avoidance	13,538	11,639	12,116	10,79	9,333	10,563
Planful problem-solving	13,115	11,639	11,651	11,88	10,647	12,737
Positive reappraisal	14,231	12,75	12,791	11,88	12,824	12,319

Source: authors' own processing

When analyzing the mean values, pronouncement of the Exercising self-control coping strategy in the tested ones of all ages can be noted: the surveyed women tend to suppress their emotional reactions, and pursuit of composure is characteristic for them. This coping strategy enables them to keep the risk of making haphazard decisions to the minimum. However, the frequent use of the Exercising self-control strategy causes emotional tension and difficulties expressing one's own

emotions. The less frequently used coping strategy of the respondents is Accepting responsibility. This strategy implies one's realizing the association between one's own behavior, actions, and consequences thereof. On the one hand, the use of this strategy enables one to assess one's role in the emergence of difficulties. On the other hand, the frequent use of the Accepting responsibility strategy can entail the feeling of guilt and self-criticism.

As a result of comparative analysis of the coping behavior indicators in different age subgroups of the surveyed ones, using H-Kruskal-Wallis test, the authors have found that the tested ones aged 30-40 make use of Escape/Avoidance and Seeking social support coping strategies significantly more frequently than the older respondents do (p=0,009 and p=0,001, respectively).

For studying particularities of coping behavior, the tested ones were differentiated into groups depending on a number of social and demographic indicators: marital status, employment status, and the level of education. The research findings, descriptive statistics, Mann-Whitney U-test values, and the significance level of distinctions in the indicators under study are given below (Table 2).

Table 2 Particularities of coping behavior in women having breast cancer with various social and demographic characteristics

Social and demographic characteristics	Coping strategies	Mean value (M)	U	p
Married (1) (N=110) Single (2) (N=67)	Positive reappraisal	(1) 13,091 (2) 11,985	3099,5	0,076
Working (1) (N=96) Non-working (2) (N=90)	Disclaiming	(1) 9,031 (2) 7,901	3441,5	0,012
	Seeking social support	(1) 11,615 (2) 10,714	3668,0	0,057
	Escape/Avoidance	(1) 12,021 (2) 10,797	3609,5	0,04
Secondary vocational education (1) (N=105) Higher professional education (2) (N=67)	Planful problem-solving	(1) 12,229 (2) 11,189	3581,5	0,043
	Exercising self-control	(1) 12,958 (2) 14,627	2694,0	0,018
	Seeking social support	(1) 10,745 (2) 11,925	2803,5	0,063
	Positive reappraisal	(1) 11,114 (2) 13,075	2591,5	0,002
		(1) 11,905 (2) 13,955	2538,5	0,003

Source: authors' own processing

As a result of comparative analysis among the married (N=110) and single (N=67) women, the authors have found only one significant distinction at the statistical trend level: married women recur to using the Positive reappraisal strategy more frequently than the single ones (p=0,076). So, having a spouse and family relationships (social support) acts as a resource when coping with difficulties, allows finding a positive meaning in the events focusing the attention on personal growth and development opportunities.

Several significant distinctions have been found by the authors when scrutinizing particularities of personal resources in women having different employment status (the working ones (N=96) and non-working ones (N=90)). When coping with stress, the working tested ones use Disclaiming (p=0,012), Seeking social support (p=0,057), Escape/Avoidance (p=0,04), and Planful problem-solving (p=0,043) strategies significantly more frequently than the non-working ones. Their professional and labor duties, opportunities of contacting their peers demand from the women to plan their own actions, to be focused, to analyze the situation and their own capacities, and to look for ways of solving the problem on their own or with the help of an external resource. Having a job enables the women to get distracted from their problem, to avoid thoughts about it, on the one hand; on the

other hand – to get some external support and the opportunity of tracing prospects.

For comparing the indicators under study among the respondents having different education levels, the authors used the results of two groups of the tested ones: having the secondary vocational education (N=105) and the higher education (N=67). As a result of comparative analysis, significant distinctions have been found in four indicators: Exercising self-control (p=0,018), Seeking social support (p=0,063), Planful problem-solving (p=0,002), and Positive reappraisal (p=0,003). These coping strategies are more frequently used by women having the higher education. At this stage of the research, the authors suppose the higher education level is a prerequisite to resolving difficulties more efficiently. However, it should be noted that this hypothesis requires further empirical verification.

Next, the authors studied the personal resource of hardiness. As previously mentioned, for exploring the age-related particularities, they subdivided the respondents' sample into 5 groups: the female patients aged 30 to 40 (26 persons; the data of one surveyed woman aged 26 were referred to this group, too), the ones aged 41 to 50 (36 women), the ones aged 51 to 60 (44 women), the ones aged 61 to 70 (50 women), and the female patients aged 71 to 80 (18 women). Results of comparison for the hardiness indicators in the subgroups under study are presented in Table 3 below.

Table 3 Particularities of hardiness in different age subgroups of the tested ones

Hardiness (indicators of hardiness)	Mean values					H	p
	Mean values (aged 30-40)	Mean values (aged 41-50)	Mean values (aged 51-60)	Mean values (aged 61-70)	Mean values (aged 71-80)		
Commitment	39,32	33,86	34,46	33,47	34,22	4,788	0,310
Control	32,579	29,143	26,514	25,645	25,200	11,449	0,022
Challenge	18,895	14,857	14,686	13,566	14,800	8,281	0,082
Hardiness	89,4211	74,3182	73,5556	70,8205	75,3500	9,213	0,056

Source: authors' own processing

According to the findings, the indicators of control, challenge, and hardiness are higher in women aged 30-40. The least pronouncement of all indicators is observed in women aged 61 to 70. So, the younger women are more convinced that fight can influence the result of what is going on, even in a situation when no successful resolution of the situation is guaranteed. Such women feel helpless to a smaller extent; they also look for discovering development opportunities both in the positive and negative experience. The high level of hardiness helps mitigate the inner tension by using active coping, taking an active life stance, reducing the significance of negative consequences of what is happening and raising their value.

Table 4 presents descriptive statistics, Mann-Whitney U-test values, and the significance level of distinctions in hardiness indicators.

Table 4 Particularities of hardiness and its components in women having breast cancer with various social and demographic characteristics

Social and demographic characteristics	Hardiness (indicators of hardiness)	Mean value (M)	U	p
Married (1) (N=110) Single (2) (N=67)	Hardiness	(1) 76,21 (2) 69,75	3225,0	0,051
	Commitment	(1) 36,02 (2) 32,66	2975,5	0,059
	Control	(1) 28,19 (2) 25,08	2758,0	0,008
Working (1) (N=96) Non-working (2) (N=90)	Control	(1) 28,07 (2) 26,1	3545,5	0,075
Secondary vocational education (1) (N=105)	Control	(1) 25,97 (2) 29,43	2392,0	0,001
	Challenge	(1) 14,320 (2) 16,67	2508,0	0,003

Higher professional education (2) (N=67)	Hardiness	(1) 71,71 (2) 80,90	2685,0	0,003
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Source: authors' own processing

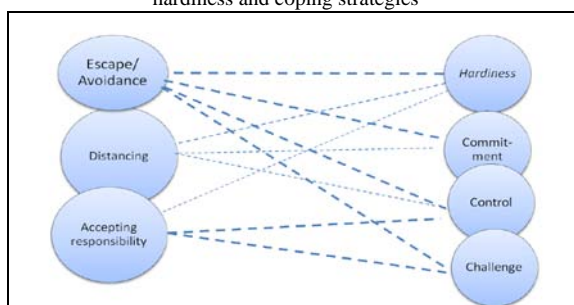
As a result of diagnosing hardiness and its components in married (N=110) and single (N=67) female breast cancer patients, significant distinctions in a number of indicators have been found. So, hardiness is more pronounced in married women ( $p=0,051$ ); its structural components – commitment ( $p=0,059$ ) and control ( $p=0,008$ ) – are validly higher in married women, too. This fact confirms that the marital status, the breast cancer patients' being married, enables them to consider the severe somatic illness to be less traumatic. Similarly, by means of hardiness, the marital status of married women enables them to mitigate the effect of stress as a consequence of the disease and, for the purposes of discussion, to keep up their health. According to S. R. Maddi, hardiness is formed at an early age on the basis of the experience of child-to-parent relationships but it goes on to be maintained and developed in adulthood, too, in interaction with other people – more specifically, in situations of accepting help and approval. Clearly, in women diagnosed with breast cancer, their marital status (having a husband, a family) enables them to manifest high commitment by taking an active part in everything; manifestation of control is expressed in the attitude of one's being able to influence the events on hand, i.e., the disease, by means of struggle.

When comparing the indicators of hardiness in working and non-working breast cancer patients, distinctions in the Control indicator have been found: it is higher in working women at the trend level ( $p=0,075$ ). In working women, control (both as a component of hardiness and as an attitude determining one's interaction with the world) can be manifested in their conviction of the fact that owing to one's own initiative, one can influence consequences of the events taking place around one. Having the work activity and professional engagement might support this attitude in women with the severe somatic illness (breast cancer), enabling them to be active in fighting the disease, too.

When looking into the comparative analysis data for the hardiness indicators in breast cancer patients having different levels of education, the authors have obtained the following findings: women having the higher education are distinguished by control ( $p=0,001$ ), challenge ( $p=0,003$ ), and hardiness ( $p=0,003$ ) in general. The Control and Challenge attitudes form hardiness as the disposition which is able to alleviate anxiety associated with the future (Mitrofanova, 2018). In the situation of the threat to life caused by the fatal illness – breast cancer, women having the higher education turn out to be more capable of coping with the ontological anxiety to gain meaning through making decisions for the benefit of the future. They think they can influence the developments of their own life (control) and seek to gain their own experience (challenge).

After this, the authors performed correlation analysis of indicators of coping behavior and hardiness among the female breast cancer patients (see Figure 1, Figure 2).

Figure 1 Negative correlative relationships of the indicators of hardiness and coping strategies



Source: authors' own processing

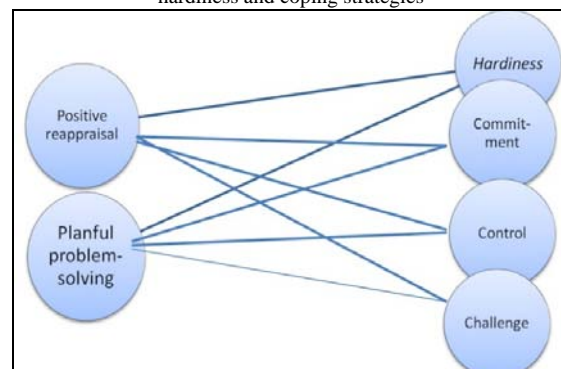
During the correlation analysis, the authors have obtained negative relationships between the indicators of hardiness and distancing, accepting responsibility, and escape/avoidance coping strategies (Figure 1). So, the higher their commitment with the goings-on, confidence of themselves and of the opportunity to influence the outcome of the situation (control) is, the less inherent in women having breast cancer distancing and distraction from the situation is. Experiencing the events taking place in women's life as exciting and joyful, controllable ones enables them to reduce the probability of dismissing their own emotions and feelings. Pronouncement of hardiness prevents emotional discomfort from arising not by distancing and reducing the significance of the situation but using other coping strategies.

The Accepting responsibility strategy implies the subjects' recognizing their role in emergence of the problem and accepting responsibility for resolving it; alongside this, it can be manifested in the form of self-criticism and self-blaming. Pronouncement of this strategy can drive subjects into the feeling of guilt. The negative relationship between the Accepting responsibility coping strategy and hardiness gives evidence about the fact that the high level of readiness for acting quickly in a situation of the absence of guarantees (challenge) and confidence of the opportunity to influence the situation (control) reduce the risk of ungrounded self-criticism. The higher the level of hardiness, control, and challenge is, the less frequently women make use of the Accepting responsibility strategy of coping.

Similarly, the relationship between the Escape/Avoidance strategy and all indicators of hardiness is of the negative nature. The more frequently a subject denies and ignores a problem, the less pronounced hardiness and its components in the subject are. Thus, the absence of actions for resolving the difficulties having emerged and manifestation of passivity give evidence about the low level of commitment with one's own life, control, confidence of the opportunity to influence the developments, and challenge.

Next, the authors analyzed positive associations between hardiness and its components with coping strategies (see Figure 2).

Figure 2 Positive correlative relationships of the indicators of hardiness and coping strategies



Source: authors' own processing

Hardiness and its components influence appraisal of the situation. Owing to readiness for acting energetically which is characteristic for hardy people, difficult life events can be perceived by them as less traumatic. The positive correlation relationship between hardiness and its components with the Planful problem-solving strategy of coping involves attempts to overcome the problem by focused analysis of the situation and possible behavior options, as well as by planning one's actions with external and internal factors borne in mind. The higher the level of hardiness, commitment, control, and challenge is, the more brightly the opportunity of resolving the problem situation in a focused and consistent manner is pronounced.



The Positive reappraisal coping strategy implies overcoming problem situations by rethinking it in a positive way, considering it as an opportunity for personal growth and improvement. Its association with hardiness is positive, too: the more frequently a subject uses the strategy of positive reappraisal, the higher the subject's level of hardiness, and vice versa. Challenge as a component of hardiness implies one's certainty of the fact that what is happening to one promotes one's development. It demonstrates the positive association, too, with the strategy of positive reappraisal of the situation. Confidence of one's own forces and independent choice of one's own activity and path make up the Control component which is also interrelated with positive reappraisal. A subject having the developed Commitment control enjoys his or her own activity and feels included into life processes. The higher the level of commitment is, the more frequent use of positive reappraisal is characteristic for women with breast cancer.

The specific features of personal resources (hardiness, coping strategies) found in women having breast cancer with various social and demographic characteristics confirm that a number of the features can act as risk factors (age, the level of education, marital status, employment status) eroding the personal resources.

### 5 Conclusion

Women having breast cancer are one of the most vulnerable categories of patients, as the fact of the oncological diagnosis is an extreme and crisis situation. Emerging abruptly, this disease jeopardizes women's life and leads to uncertainty of the future and lower social functioning. What is also affected is the quality of life of the female breast cancer patients – which is directly associated with the treatment forecast and chances of survival. It is required from women to mobilize their personal resources aimed at mitigating the traumatic impact of the stressor – the severe illness. So, in the difficult life situation, hardiness acts as the resource helping them cope with despair, the feeling of helplessness, and loss of meaning.

As a result of studying the relationship of hardiness and its components with coping strategies in women having breast cancer, significant correlations of negative and positive set have been found. Hardiness contributes to higher caring about one's own health and well-being, which can lead to reducing the inner tension and emotional discomfort. The association of strategies of coping behavior in difficult life situations with hardiness allows revealing a specific personal resource in women diagnosed with breast cancer – the stability and self-regulation resource. This personal resource enables the women to reduce their vulnerability in the situation of the chronic disease and to determine the nature of decisions made while interacting with their life circumstances for the benefit of the future. Moreover, when assessing personal resources of female breast cancer patients, their social and demographic characteristics have to be taken into account, too. Social and demographic factors mediate the personal resource lending some consistent distinctness to it.

Results of the research of coping behavior and hardiness as a personal resource can serve as a basis for working out programs of personal resource development for patients having the oncological disease. The essence of rendering psychological assistance to women with breast cancer consists not so much in alleviating their moral and psychological suffering rather than in amplifying the effect of treatment by mobilizing personal resources, which means, raising their survivability.

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**Primary Paper Section:** A, F

**Secondary Paper Section:** AN, FD

## INTERACTIVE LEARNING CONTENT OF A LESSON: PEDAGOGICAL CONDITIONS FOR DEVELOPING THE SUBSTANTIVE CONTENT FOR TRAINING A PHILOLOGY TEACHER AT THE UNIVERSITY

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Abstract: The research is concerned with determining the pedagogical conditions for developing the interactive learning content of a Russian language lesson in the course of training bachelor's degree students at pedagogical universities. Based on the analysis of scientific papers, the authors offer a didactic comprehension of this problem, describe the experience of creating a methodology of teaching the philology students at Mordovian State Pedagogical University named after M. E. Evseviev to develop the interactive learning content relevant to teaching Russian language in today's school. They describe step-by-step implementation of the methodology, including theoretical, practical and control stages.

Keywords: educational resources, interactive learning content, Russian language lesson, lesson content, information and communication technologies, teaching tools, professional competence of a philology teacher.

### 1 Introduction

Interactivity is a universal concept, because it is used in various fields of human activity. In information and communication systems interactivity is understood as the ability of the system to adequately respond to the user's actions, to get engaged, to include user in the process of interaction.

Interactivity as an ability of the user to interact with the content itself is becoming a distinctive feature of the modern education at all levels. This also dictates requirements to the university training practice for teacher as concerns the development and use of educational resources.

The need to create interactive learning content for the Russian language lessons today is fixed in the official documents. According to the Decree of the Government of the Russian Federation from December 7, 2020 No. 2040 On Running an Experiment for Deploying the Digital Learning Environment" (2020), a draft order of the Ministry of Education of the Russian Federation on approving the procedure for creating and keeping the register of providers of digital learning content and educational services approved or recommended for use in the educational process was submitted for public discussion [Decree, 2020]. The document provides a detailed explanation of the requirements for the content and technical characteristics of digital lessons, electronic textbooks and other content as well as the requirements for developers of the learning content and services.

Obviously, the demands of the new generation to education, the need to become flexible and efficient in the use of computer programs and distance learning tools make it imperative to revise and update the university methods and technologies of teacher training, adding more relevance to the solution of the problem of our research.

### 2 Literature Review

The indicated problematics of research has a wide scope. Scientists examine the questions concerned with understanding the place and importance of interactive learning content in the modern school and higher education facilities: so, development

of interactive learning content is seen as a trend of modern education (Klimenko, 2017); interactive learning content is defined as an additional resource boosting the efficiency of training and quality of higher education (Smolnik & Tonkonogov, 2019); find ways to build the content of a Russian language lesson in an electronic environment, define the role of the language teacher, and the specific aspects of organizing students' learning in a digital school (Skryabina, 2020); explore the potential of a modern digital learning environment for the professional development of young philology specialists (Sokolova & Sokolnitskaya, 2020).

Analysis of the typology of interactive learning content allowed us to explore the specific features of mobile applications as the tooling helpful for a subject teacher and identify groups of mobile learning resources, their potential for facilitating the process of mastering the learning content by students: organizers, messengers, mobile applications for various academic disciplines, visualization programs (presentations, charts), control programs (quizzes, tests) (Savelieva, 2018).

Publications describing the experience of applying interactive learning content in a modern school appear rather interesting: the results of deploying the information environment "Moscow Electronic School" in Moscow schools, presented as a factor in modernizing the professional training of a language teacher, are conspicuous in terms of revealing the difficulties associated with development and use of the learning content in the real learning process (Kokhanova, 2019).

In the modern scientific and methodological literature, a special place is given to the issues related to the formal and substantive development of the interactive learning content of different types. Thus, various algorithms for the use of virtual learning content as a constructor for developing interactive game programs are proposed (Atroschenkov et al., 2019); principles of modeling composite interactive learning content with the focus, for example, on the function of educational e-book, coupled with automation and individualization of formative and testing processes as part of educational activities (Lanskikh, 2020) have been described.

Different aspects of the development and use of electronic learning environment, or electronic learning resources (electronic teaching and learning aids, simulators, databases, etc.) in the process of future teacher training, including practice in both contact and distance learning situations are covered in a number of contemporary publications (Chigisheva et al., 2016; Babushkina et al., 2017; Tsareva et al., 2018; Kuznetsova et al., 2018; Kizrina et al., 2018; Kashkareva et al., 2019; Kabanova & Vetrova, 2019; Vinokurova & Babina, 2019; Safonov et al., 2019; Babina et al., 2020a; Babina et al., 2020b; Vodyasova, 2020; Beloglazova et al., 2020; Otterborn et al., 2020; Voinova et al., 2020; Shukshina et al., 2021; Vershinina & Babina, 2021).

In terms of searching for the ways to improve the efficiency of professional training of students of pedagogical universities, highly illustrative are the results of the methodology aimed at developing the skills to create and process such type of sound electronic learning resources as audio podcast (audio content) in bachelor's degree students obtaining pedagogical education within the discipline "ICT and Media Information Literacy" (Protsenko & Safonova, 2021) are revealing.

### 3 Research Methodological Framework

The research purpose is to describe the experience of using the methodology of teaching philology students to develop the interactive learning content for a modern Russian language lesson. The research objectives are as follows: 1) to determine how profoundly the question has been studied to date and define

the research methodology; 2) to create a model methodology of teaching philology students to develop the learning content of the indicated type; 3) to implement and test the developed methodology.

For establishing the conceptual base of research, we have resorted to analysis of scientific and methodical literature generalized and systematized the material exploring the didactic potential of the interactive learning content at schools and universities, and specific features of its creation. Pedagogical modeling was helpful for developing the methodology of teaching the philology students at pedagogical university how to develop the interactive learning content for a lesson. In order to implement and test the developed methodology, methods of observation and criterial evaluation were used in the course of the internal university contest in interactive teaching tools "Interactive Learning Content for a Modern Russian Language Lesson" held at the Philology Department of the Mordovian State Pedagogical University named after M.E Evseviev (98 third and fourth year students took part in the contest in 2020/21 academic years).

#### 4 Results and Discussion

Analytical review of the scientific papers dealing with creation of the learning content, including interactive content, for a Russian language lesson showed that the research field of this problem is just beginning to develop. Works that look into this problem in the context of university training of a future philology teacher do not exist as yet. Thus, the underlying theoretical material for creating a model methodology of teaching philology students at pedagogical university to create interactive learning content for a Russian language lesson was obtained through didactic comprehension of this problem and its reconversion into the professional pedagogical training of bachelor's degree students.

Further we will present the results of accomplishing the research objective consisting in implementation and testing of the methodology of teaching the philology students to develop the interactive learning content for a Russian language lesson within the frames of a discipline "Russian Language Teaching Methodology" studied on 3rd and 4th courses (semesters 5-8).

At the theoretical stage (lecture topics: "Teaching Techniques", "Teaching Tools", "Russian Language Lesson") students received the knowledge about the interactive learning content as a trend in modern education, with typology of the learning content in general and the interactive learning content of a Russian language lesson. As a result, they gained understanding of the concept of interactive learning content, its specificity (user interaction with the interactive content) in contrast to the so-called passive content on the web.

Students were introduced to online services for creating content without special programming skills: <https://learningapps.org/> (a collection of ready-made interactive modules, or exercises on various general education subjects and templates for creating similar online exercises for classification, multiple choice tests, etc.), Playbuzz (creating quizzes or polls), uCalcThinglink (transforming ordinary pictures into interactive ones with pop-up annotations), Online Test Pad (creating tests and simple games), Kahoot (creating online quizzes, tests and polls), etc. The analysis of the online learning platforms recommended by the Ministry of Education of the Russian Federation (<https://edu.gov.ru/distance>) was also carried out.

Since interactive learning content is a particular concept in relation to educational resources, students were explained the typology of digital learning resources, including integrated creative environments (editors of texts, graphics, music and a set of programmable objects) used to organize the project activities of students multi-directional in terms of covered subjects and content; virtual laboratories and constructors, providing an opportunity to create visual and symbolic imitation models and run experiments with these models, the sources of information (databases in the form of electronic encyclopedia and digital

collections), simulators used for building individual learning trajectories. It was determined that of all the rich variety of interactive learning content for the modern Russian language lesson most pedagogically appropriate are the following types of content: tests, quizzes, simulators, interactive exercises, web quests, web portfolios, etc.

At the practical stage (practical course "Russian Language Teaching Methodology") the existing practices of developing and using the interactive learning content for Russian language lessons were explored, specific features associated with developing the content of different types were identified and analyzed, the effectiveness of interactive learning content in teaching the Russian language in the school of today was assessed. So, the analysis of existing practices of developing and using the interactive learning content in modern school has allowed to reveal the basic requirements to the content which is obligatory for any lesson, such as the lesson's electronic scenario representing the structured learning content which can be played on an interactive panel and on tablets of students (Kokhanova, 2019).

The indispensable components of the content of the electronic lesson script are the following: 1) lesson outline or notes to certain lesson stage (displayed on the electronic device of a teacher), 2) presentation to the lesson (displayed on the interactive board, screen in the classroom), 3) interactive worksheets (displayed on the personal devices of students).

Obligatory requirements to the scenario of a lesson: presence of interactive elements, video fragments, test tasks, tasks in the format of Basic State Examination, Unified State Examination, etc.

Analysis of the effectiveness of digital learning resources in teaching Russian language revealed the following mandatory requirements that such resources should satisfy:

- correspondence to the content of education and current educational standards;
- pedagogical appropriateness;
- relevance to the specific academic topics of the current program;
- possibility to be used in interdisciplinary and innovative learning activities,
- regard for the level of teacher preparedness for the use of ICTs in the teaching process.

The control stage of our research was focused on creation of conditions for philology students to develop the interactive learning content for a Russian language lesson. As one of such conditions we created a situation of competition: the internal university contest of interactive teaching means "Interactive Learning Content of a Modern Russian Lesson" was organized and held. The contest had the following objectives: to study the achievements in the modern methodology of teaching the Russian language; to help students master an interactive format for presenting learning content facilitating the independent study of material by school students; to boost the students' creative potential; to identify and support relevant and promising projects; to demonstrate information culture in using the ICT as a resource to improve the quality of future professional activities; self-presentation as a developer of interactive learning content in today's labor market; sparking the interest of the younger generation in the Russian language teaching as a profession. The competition was held in two rounds: First round included examination of the submitted training tools and determining the winners of the first round; and the second round was concerned with defense of the interactive learning tools. The interactive teaching tools for the modern Russian language lesson independently developed by 3rd-4th year students (a total of 48 projects) were submitted to the contest in the following categories: "Digital Learning Content" (the projects made with the use of online platforms (services) for creating web portfolios, web-quests, interactive tests, exercises, games, crosswords, quizzes); "Media Content" (the projects made with the use of tools for creating graphics, posters and videos for training or

implementing educational projects); "Interactive presentations" (projects made with the use of tools for creating electronic presentations).

The main evaluation criteria for the interactive learning tools were the following: richness of information and content; methodological integrity and structure; relevance and periodicity of updates; safety and comfort of the virtual learning environment; interactivity, the level of engagement of the users' audience and the use of Internet tools for communication with different target audiences (students, parents, colleagues); originality of the methodological idea; educational value of the methodological materials; replicability; style; literacy; logical presentation; aesthetics.

The most popular nomination was "Digital Learning Content", under which it was requested that the students created a variety of interactive exercises, and the analysis of the submitted results showed that most often students used learningapps.org templates such as "Find a pair", "Classification", "Text entry", "Quiz for choosing the correct answer", "Fill in the blanks", "Puzzle", "Crossword puzzle", etc.

## 5 Conclusion

The research intended to identify the most appropriate pedagogical conditions for developing the interactive learning content of the Russian language lesson by philology students led us to the following conclusions.

In response to the needs of the contemporary times and taking into account the possibilities of the modern ICT, the learning content acquires an interactive format, which affects the development of learning resources relevant to teaching the Russian language. The major requirement for the development of learning content of the modern lesson is obligatory presence of interactive testing instruments for assessing the level of knowledge (competencies and skills) of students: electronic tests, simulators, quizzes, etc.

The role of interactive learning content is determined by its ability to improve the effectiveness of teacher's proactive, activity-based, individualized forms of teaching in a modern school. Development of the lesson's electronic scenario as the main type of learning content of a modern lesson should include three obligatory components: 1) lesson's electronic outline (plan, notes to a lesson, etc.) displayed on the electronic device of a teacher, 2) electronic presentation displayed on the interactive board, screen in the classroom, 3) interactive worksheets (displayed on the students' tablets).

The discipline "Russian Language Teaching Methodology" taught at the modern pedagogical universities should include a content component familiarizing students with the methods of developing interactive learning content of a Russian language lesson. In the practice of university training of the philology teacher one of the crucial pedagogical conditions for creating the adequate interactive learning content of a Russian language lesson can be the contest of interactive training tools "Interactive Learning Content of a Modern Russian Language Lesson".

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**Primary Paper Section: A**

**Secondary Paper Section: AI, AM**

## THEORETICAL APPROACHES AND CONCEPTS TO THE REALISATION OF ELECTRONIC LEARNING IN THE EDUCATIONAL PROCESS

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**Abstract:** In the era of high technologies, no one doubts that the role of electronic and distance learning will be further expanding. The fact that the society when faced with challenging living conditions had to react and urgently change and rebuild all spheres of its life, served as a litmus test for identifying the matters of highest priority that need to be addressed as soon as possible. E-learning was not an exception. In our work we focused on its aspects, identified the advantages and disadvantages of e-learning at university, mapped out some prospective ways for modernizing the educational system to eliminate the existing contradictions.

**Keywords:** electronic learning, distance learning, educational process, educational space, university.

### 1 Introduction

The relevance of this research is high as recently the society has faced the challenges for which it was unprepared. The modern world, the whole structure of which is predicated upon the achievements of technological progress, has turned out to be extremely vulnerable in times of emergency and unforeseeable situations. In this connection, an increased emphasis has begun to be placed on novel and modern organizational forms of educational process, which in the context of modern realities will help to mitigate the damage resulting from the involuntary long isolation and paralysis of all social structures. The pace of development of the modern society also makes it imperative that a future university graduate becomes highly mobile and flexible, and the e-learning may help to develop these qualities. A learner gets access to the continuous education, and a possibility to achieve self-fulfillment in profession and learning at the same time. Territorial boundaries between regions become blurred. However, the modernization of education for incorporating in the system of education, in addition to traditional forms, the most advanced and high-tech organizational forms, definitely is not a matter of one day. E-learning has already been firmly established in the modern educational process, but the realities of present day brought society to realization of its true potential in providing high quality educational services meeting the demand (Satunina, 2006). At the same time, it was the situation of urgent restructuring of all spheres of social life that clearly revealed the gaps that need to be eliminated in order to achieve high efficiency and productivity in all spheres of social life, including provision of high quality educational services meeting the demand (Maslova & Gafforova, 2012; Pokholkov et al., 2004).

### 2 Literature Review

It is important to highlight that the problem of incorporating e-learning in the educational process is highly relevant in the scientific community and ignites interest of the domestic and foreign researchers. Thus, this problematic has been successfully dealt with by the following Russian researchers: Kornienko S.A. (2014) whose works show that his scientific interest is directed towards the use of e-learning formats for implementing the modern educational programs; T. N. Fokina (2015, p. 138), who addresses the issue of defining the concepts of electronic and distance learning and developing the modern educational technologies corresponding to the imperatives of our times; A. E. Satunina (2006) who seeks to fix the contradictions arising in

the process of implementation and incorporation of e-learning in the educational process.

It should be noted that modern domestic researchers attach particular importance to the creation of a single methodological basis of e-learning, since, in their opinion, e-learning is not part of the traditional learning, but has its own, specific, goals and objectives (Kornienko, 2014; Fokina, 2015; Satunina, 2006; Vernik, 2014). That is why the main contradiction is that, despite the sufficient knowledge about e-learning and its high popularity, its incorporation in the educational process implies a need to deal with very substantial scientific issues.

Undoubtedly, speaking about the theoretical foundation beneath such a concept as "e-learning" it is impossible not to mention the name of Richard Mayer, who is known as "the father of the science of e-learning". In his works he justifies the need to introduce new electronic forms in the educational process of the future. His ideas are shared by Van Merriënboer and Ayres (2005), who point to the need for adapting the learning content to reduce its cognitive load and the use of learning formats which through illustrative potential and imageability will ensure higher comfort of learning for students. Interesting for us are the works of Marshall McLuhan (2003), who was the founder of the theory of digital media, he believed that the media is a treasure trove of resources for e-learning (Vernick, 2014, p. 11). Foreign authors, as well as domestic ones, agree that a solid theoretical framework should be developed for the e-learning which will help to overcome its bottlenecks and identify its advantages (Van Merriënboer & Ayres, 2005; Gianelli, 2018; McLuhan, 2003).

As concerns the above, there is no doubt that the issue of implementation, adaptation and modernization of e-learning at university is highly relevant and promising from a scientific and theoretical perspective.

### 3 Research Methodological Framework

The research purpose was to determine and provide theoretical substantiation to the efficiency of integrating electronic learning in the education process at university.

For achieving the stated purpose, we had to address the following objectives:

- identify the features peculiar to the e-learning process;
- explore the pedagogical and psychological concepts relevant to implementing the e-learning;
- design an e-learning model composed of the components differentiating it from a traditional learning model.

For accomplishing the research purpose and objectives, we conducted theoretical analysis and synthesis of pedagogical, psychological, methodological literature; in our research we employed the methods of modeling, analysis, synthesis, generalization of mass practice and the best practices in Russia and abroad.

### 4 Results and Discussion

Based on the definitions of the concepts of electronic and distance learning, it should be noted that these types of learning have been used in the educational process for quite some time, but often their use is chaotic and unsystematic. It is important to understand that for the effective integration of electronic learning in education a solid theoretical framework is required, the scientific foundation without which it is impossible to organize training at a proper level.

In his work, M. Gianelli (2018) brings into focus that when designing the process of e-learning it is necessary to rely on the results of empirical research in the field of e-learning effectiveness, tools, resources and forms of organization. In

addition, it is necessary to generalize and systematize terminology for the effectiveness of research in the field of e-learning and distance learning. The researcher points out that currently there is no sound theoretical framework that could have been used for the implementation of e-learning (Gianelli, 2018). At the same time, the researcher notes that this form of learning is innovative, which entails the need for dynamic changes and revisiting of the usual forms of educational process. M. Gianelli (2018) points to the problem of coexistence of traditional pedagogical practice and such an innovative form as e-learning. Modern life characterized by a high pace, mass digitalization, migration and regional remoteness make e-learning more and more attractive, helping more and more students to study under the programs of the country's leading universities (Gianelli, 2018, p. 82).

M. Gianelli (2018) highlights a conceptual component of the e-learning content through the prism of the concepts of cognitivism, constructivism, behaviorism, digital media theory, activity theory, and active learning theory. Below based on the study of M. Gianelli (2018), we present the key characteristics peculiar to the e-learning process with regard to these concepts and theories.

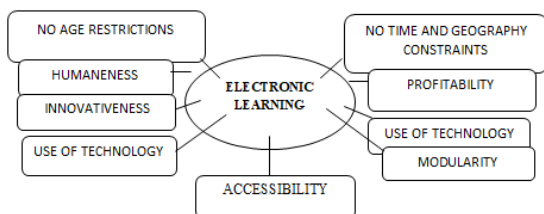
1. The concept of cognitivism. From the point of view of cognitivists, learning is an internal process. The structure of this process includes such components as figurative thinking, reflection, memory. As a distinctive feature of this concept we may name metacognition through the lens of subjective comprehension of reality. In this concept, information is perceived by a person via senses, then processed by the operative memory, which resources are limited, and only then enters the long-term memory, which has no limitations (Gianelli, 2018, p. 83). Van Merriënboer and Ayres (2005, p. 12) also note the need to adapt information in order to reduce its cognitive load and to integrate in the learning process such forms that through illustrative potential and imageability will ensure higher comfort of learning for students. Thus, these recommendations may serve as a basis for organizing an effective educational process at university with the help of electronic applications with reliance on cognitivism as its theoretical framework.
2. The concept of constructivism. This concept is based on the assumption that all new knowledge should be built on the basis of the already existing knowledge. In pedagogy, this didactic principle is called "from simple to complex". It is easy to apply this concept to e-learning. This approach promotes cooperation, reflection, and allows the student to absorb new information free of stress. The situations reproduced within the framework of this approach foster in students such significant personal qualities as independence, proactivity, curiosity, initiative. The learning takes place in the format of "guided discovery", when a student gets the impression that he/she independently makes all discoveries, which becomes a strong motivation for learning. In this case, no significant differences may be observed in the understanding of constructivist approach in e-learning and constructivist approach in traditional learning (Gianelli, 2018). Here only the forms of organization of work with students differ, but the essence remains the same – building knowledge based on the learner's personal experience, high personal discipline, interactive presentation of information and self-reflection, as well as shaping a subjective component of the learner's personality (Gianelli, 2018). It can be assumed that this approach holds a rather high potential for building the conceptual foundations of e-learning.
3. The concept of behaviorism. Proponents of this approach view learning in the context of external stimuli, or environmental stimuli (Gianelli, 2018). The role of human perception is premised on the simple principle "stimulus - response" (Gianelli, 2018). Such understanding of human cognition already includes the subjective evaluation of reality (external stimulus) and its comprehension on the basis of "internal perception". Thus, according to behaviorists, a person acquires knowledge through personal experience in interaction with the surrounding world. Projecting this approach to the learning process, the quality of a stimulus producing a response is of great importance in learning. Behaviorists, or rather neo-behaviorists, recommend that study course designers arrange the learning content so that it encourages students to respond to the stimulus eagerly. This becomes possible when the content itself will initially meet such criteria as accessibility, vividness, motivation, imagery, problem-raising, dynamism. The principle "from simple to complex" is also relevant in the framework of this approach, but the leading role belongs to the quality of "a learning stimulus" that is meant to produce "an educational response" (Gianelli, 2018).
4. The digital media theory enriches e-learning with a wide diversity of media formats that can be used for teaching and learning (Gianelli, 2018). If we proceed from the formula of Marshall McLuhan (2003, p. 348), who believed that the medium of communication itself carries information, then the media is a treasure trove of resources for e-learning. According to McLuhan (2003), "the emergence of a new medium of information transfer changes people more than the content of this medium" (Arkhangelskaya, 2009, p. 11). It is important to note that the theory of digital media addresses the key issues related to the accessibility of information in the media format, meaning that the issue of "equal starting opportunities" for all participants in educational relations becomes topical (Gianelli, 2018, p. 86). In this aspect, an important point is to provide all students with necessary technical means and access to the Internet, which, despite the mass digitalization of society, is not always possible, as the previous year showed. At the same time, within the framework of this theory, new interactive forms of information presentation come into existence, which fix the main issues of cognitivism, namely the overload resulting from processing a large amount of information. Illustrative potential and manipulateness allow a student, within the framework of this theory, to absorb a rather vast amount of information without suffering from an overload and weakening of cognitive and learning motivation.
5. The activity theory and active learning theory. This approach is very relevant amidst the modern realities, especially in the legal field, implemented as professional standards, where student is seen as a subject, a carrier of activity, as these are activity, proactivity, independence, interest (curiosity) and initiative that are essential properties of a future specialist for his/her success in profession. This theory hinges on the approach of conscious active learning (Gianelli, 2018). Because it is through consciousness and understanding of the goals and objectives that a student internalizes the educational content, and not just mechanically learns it by heart. E-learning, having a number of advantages, very effectively fits within this approach. Various quests, case studies, business and interactive games, problem situations open the way for independence and creativity in solving tasks (Gianelli, 2018). A possibility to complicate or simplify tasks, select levels to be passed, return to the unfinished tasks, find keys to their solution, all this motivates a student and contributes to quick learning of the content. From this perspective, e-learning perfectly correlates with this approach (Gianelli, 2018).

The scientific community is faced with the question of whether it is required to develop its own scientific basis for the e-learning or are the existing developments sufficient? It is important to understand that e-learning in pedagogical theory and practice, is the formation which is dynamic, prone to constant modernization and development, as the progress of technology and digital society is very rapid. The changing world dictates its tasks, the digital community exists according to its own laws and this progress is unstoppable. In this regard, it is important to set forth the key considerations to be taken into account when creating new digital concepts and theories (Fokina, 2015, p. 137).



The e-learning model should include components that distinguish it from the traditional educational model, namely: remote access to any university across the globe, regardless of its geographic location, no time constraints (regardless of a time zone), for example, within the frames of e-learning a student may choose the most convenient time for learning the content, if the lectures are not delivered in real time, etc. Based on the above, in our view, this model may be presented as a following chart (Figure 1. The Component Model of Electronic Learning (Authors).

Figure 1 The Component Model of Electronic Learning



Source: the authors

Therefore, we would like to highlight that electronic learning is based on the following principles:

1. flexibility - the absence of regular classes in the form of lectures and a free choice of time for learning the program content.
2. modularity - each separate topic or a combination of topics completed by a learner, create a holistic view of the particular subject area, thus arranging knowledge in a clear system or structure.
3. parallelism — training can be carried out without discontinuing the main work activities.
4. beyond distance — the physical distance between a learner and an educational institution is not a hindrance.
5. asynchrony — a possibility of implementing learning technologies irrespective of time.
6. mass coverage — non-criticality of the parameter "number of learners".
7. profitability — economic efficiency of training.
8. use of technology — a widespread use of new information and communication technologies (Popov & Andryushkova, 2011, p. 22).

The presented chart shows that one of the distinctive features of e-learning is the ability to provide services remotely, which, for understandable reasons is an obvious advantage, making education accessible for students living far from the chosen university, but at the same time has its drawbacks due to the lack of direct communication and reflection. Thus, the concept of e-learning must necessarily include components, which, on the one hand, minimize the problematic aspects, and on the other hand, invigorate the strengths of this type of learning. Also the paramount task, when organizing e-learning by higher education institutions and its incorporation into their curriculums is the development of a legal framework regulating this process (Lapchik, 2014, p. 102). A major problem today is also associated with staff, in particular, unreadiness of the university teaching staff to handle the e-learning tasks, to the biggest extent it concerns universities whose teachers have a long teaching record, it does not mean that all teachers with a lengthy service demonstrate technological backwardness, but it is more difficult for them to readjust and switch to new formats of work.

## 5 Conclusion

Today it is inconceivable that the educational process may exist without electronic learning. Progress in technology and digital advancements dictate new requirements for the life of society as a whole and all its spheres in particular. The use of various forms and means of e-learning significantly enriches the educational process, increases its illustrative potential and accessibility, opening "equal starting opportunities" for all students regardless of their location and social standing.

However, today, the advantages of e-learning become prominent along with its disadvantages. In the force-majeure situation where our society was caught due to the pandemic, gaps in the methodology and technical resources of universities has become more apparent. The questions arose which require new comprehension by the scientific community of the purposes and objectives of electronic learning.

In recent years, scientists are increasingly coming to the conclusion that the existing pedagogical and psychological theories on which traditional education is resting are not suitable for addressing the specific objectives of e-learning. This brings scientists to realization of the need to develop a new theory and methodology of e-learning and make these developments comply with a single educational standard.

Also, the introduction of a distance learning triggered by the pandemic, has revealed unreadiness of university students for this type of learning, for personal rather than technical reasons. Without the direct control, many students showed their personal immaturity when dealing with problems associated with distance learning.

The identified main issues that require solution for optimizing the educational process in the system of higher education highlighted for us the need for this research. Also our research led us to the conclusion that e-learning is not only highly relevant, but also highly promising. In our opinion, this type of organizing the educational space carries a powerful pedagogical and technological potential, which tapping becomes the priority task for both educators and practicing teachers.

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Primary Paper Section: A

Secondary Paper Section: AA, AM

## SPECIAL FEATURES OF SOCIAL DEVELOPMENT OF THE OLDER PRESCHOOL CHILDREN IN A PROVINCIAL SOCIAL ENVIRONMENT

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Abstract: This paper presents the results of the experimental research into special features of social development of the older preschoolers in a provincial social environment. The authors revealed that positive changes relating to social development occur in the children of this age group, which are caused by the impact of provincial social environment (preservation of family traditions, participation of the broad spectrum of socializing agents in upbringing and socialization of a child, intergenerational continuity within a family, wide-ranging interactions with the peers, etc.), however, a large portion is constituted by the respondents with insufficiently stable social behavior which is explainable by their age-specific features.

Keywords: social development, older preschool children, diagnostics, childhood, provincial social environment, socialization.

### 1 Introduction

Amidst the ongoing social transformations, exploration of the modern childhood and its psychological-pedagogical features seems to be a relevant goal, which is explained by the influence rendered on this phenomenon by various socio-cultural conditions, the changing forms of communication between an adult and a child, emerging new ways of collecting information about social reality, changing needs of a child, etc. In the studies of recent years, the childhood is viewed as an autonomous sociocultural reality, a distinctive subculture with its own structure, language, functions, and traditions conditioned by age sensitivity.

At the present stage, the older preschool age occupies a special place in addressing the objectives of studying the psychological-pedagogical features of the childhood. This is a period when a child gradually enters the world of specific social relations, realizes the socio-cultural connections, "probing" own self in the socio-cultural space, when the cognitive assimilation of social reality gets substituted with conscious socialization. However, the social development of a child of this age group depends on many socialization factors, including the influence of the socio-cultural environment where the child lives. The current transformations in the society significantly change the objective conditions of social development of older preschool children, which requires scientific comprehension for considering the impact of the new realities of the socio-cultural environment. At the same time, problems related to studying the social development of older preschool children in specific socio-cultural conditions remain understudied. These include the problem of studying the influence of the provincial society on the process under scrutiny and exploration of its socializing potential. In the context of our study we will consider the special features of social development of preschool children living in a provincial social environment.

### 2 Literature Review

In the Russian and foreign science there are fundamental psychological and pedagogical studies concerning various aspects of human social development, personal involvement as an individual subject of social relations (Kon, 2004; Dodge et al., 1994; Hjele & Ziegler, 1992; Feldstein, 2009). Research has

focused on the study of social development at different age stages.

Older preschool age is considered in psychological and pedagogical theory as the most important age stage for social development (Damon et al., 2006; Bysheva & Khanova, 2016).

Peculiarities of children's social development in view of the age are considered in the works of Baranova (2020), Denham et al. (2011), Dougherty (2006), Gershon and Pellitteri (2018), Lapteva (2016), Pahomov (2020).

At the present stage in the development of pedagogical science, a steady tendency has been observed to study socio-pedagogical factors of social development. The findings of research into the impact of various socio-cultural conditions on the social development of children are presented in the works of James and Zanden (1990), Joan and Davidov (2010), Schoonmaker (2006), Valitskai and Sultanov (2009), Wichmann et al. (2004). However, the domestic science for a long time has not paid due attention to the study of the impact of the provincial society and its socio-pedagogical features, and the few studies known at the moment mostly focus on the geographical, economic or statistical and demographic issues. Having analyzed the literary sources, we should note that the modern provincial society is characterized by the strong family values; domesticity of population choosing to reside in the same locality; preservation of close family and collective relations; no social or cultural contrasts; differentiation of norms of the expected behavior and norms of relationships as concerns the age and gender of residents; certain selectiveness in communication, by intensity and emotional significance, as well as by content, etc. These studies do not view the provincial society as a distinct socio-cultural and socio-pedagogical environment. Socializing potential of provincial society, effective socio-pedagogical conditions for improving the positive socialization of the younger generations remain unexplored.

A view on the child as a subject of children's activities is presented in the studies of Vasenina et al. (2018), Gogoberidze et al. (2018), Osorina (2017), Smirnova (2013), Sadinova and Karpova (2018). Scientific works devoted to the problem of exploring the social development of older preschool children with account of the provincial society environment are extremely scarce and have only a polemic nature.

### 3 Research Methodological Framework

The research purpose was to explore special features of social development of the older preschool children in the provincial social environment.

This purpose was accomplished through the following objectives: identify the diagnostic criteria base for exploring the special features of social development of older preschool children in a provincial social environment; measure the level of social development of older preschool children in a provincial social environment; consolidate the results of diagnostic research and present the major trends in the social development of the older preschool children in a provincial social environment.

The ascertaining stage of our experiment took place during the year 2021. The experimental base of research was Kindergarten No. 76, Municipal Autonomous Pre-School Educational Institution, in the city of Saransk, the Republic of Mordovia. The research included 108 older preschool children (5-7 years).

For assessing the basic parameters of social development of the older preschool children, a complex of diagnostic methods was used: "Sociometric Survey" (Denisova, 2017), a subtest to identify the subjects of identification for older preschool children, "Unfinished Sentences", "Expert Evaluation of Older Preschool Children Socialization" (Mikliaeva, 2017),

"Unfinished Situations" (A. M. Shchetinina, L. V. Kirs) (Shchetinina, 2000).

For addressing the identified objectives, the following research methods were used: pedagogical experiment, observation, questionnaires; expert evaluation method; quantitative and qualitative analysis of the obtained data.

#### 4 Results and Discussion

For revealing the specific features of social development of the older preschool children living in a provincial society the following indicators were defined: the level of knowledge and understanding of the socio-moral norms; understanding the motives of other people's actions, the ability to adequately perceive the observed behavior within a certain social context; the ability to put oneself in the place of another (to overcome communicative and moral egocentrism); the ability to establish emotional connection with adults, peers or peer group; the ability to develop the communicative situation.

The diagnostics helped to address the objective of studying the current level of social development of the older preschool children living in a provincial society. The level of social development of the older preschool children was identified based on the indicators listed above, taking into account the impact of the provincial social environment.

In the context of our study, of the greatest interest was the study of the relationship of the older preschool children with their main subjects of identification. Two types of social relationships, namely socially normalized relationships with adults and relationships with peers, are especially vividly manifested in the older preschool age.

Studying of the specific features characterizing the relationships of the older preschool children living in the provincial society environment is possible through examining the level of awareness of the emotional effect on the child's personality of communication with different categories of people.

From the angle of the emotional-motivational sphere, conspicuous are the results of a projective subtest for identifying the level of personal identification, which helps to reveal the child's position in relation to their subjects of identification (mother, father, grandmother, grandfather, peers, teacher, etc.), graphically represented as eight circles positioned horizontally, which also determines the rank positions of the subjects of identification. The results obtained by this subtest showed that the primary subject of identification in the immediate circle of the older preschool children is a mother. This subject was given the leading position by 70% of the subjects. Such ranking position can be explained by the fact that when children is near their mothers, in most cases they have the feeling of social comfort and protection. It is with her that children associate the expression of the best human qualities and try to copy her, wishing to acquire similar qualities. A role of the father is rather high for the older preschool children. However, this subject of identification takes a lower position in relation to the mother.

Children of the older preschool age in most cases assign 3rd and 4th position to such subjects of identification as grandfather and/or grandmother. In some families, these agents of socialization have a direct influence on the child's personality, in others, their influence is indirect. Despite the general trends of transitioning from multigenerational to nuclear family in modern provincial society, more intense migration processes, geographical separation affecting the relationships between the older generation and other family members, the role of these agents in the social development of a child in provincial society is quite sizeable, because through them children learn the customs and traditions of the family, they spend a lot of time with children because parents are busy with jobs, thus, along with mother and father, grandparents are significant agents of socialization for children of this age group.

Results of this subtest have been validated with the help of the Sociometric Survey (Denisova, 2017). This survey includes five blocks, 10 questions each, intended to investigate relationships with child's peers, family members, teachers, and a reference group. To the questions "Who do you like to play with at home?", "Who do you like to walk with?", "If you had two tickets to the circus, which family member would you go there with?" 78% of the older preschool children named their mother. Responses to the question "Who in the family would you want to be like?" revealed the reference group for the older preschool children - 38% prefer to be like their mother, 32% identify themselves with a dad, 4% with an older sister or brother, and 26% of children noted the important position of their grandparents.

If to widen the lens of exploration of this problem to include the glance into the features of social development in other institutions of socialization, it can be seen that one of the leading roles the children of the older preschool age assign is to their nursery teacher. Adults, who are not family members, become part of social reality of a child specifically in the preschool age. The conducted research has proven the important role of a nursery teacher in the social development of preschool children. 44% of the older preschool children put their teacher into the leading positions.

In a sociometric survey, when asked "Which adult would you share your troubles with?" 34% of the older preschoolers mentioned the teacher. This group of preschoolers quite often turn to the teacher to share the encountered difficulties. Along with other reference adults, 40% of the older preschoolers would share a joyful event with a teacher.

The peers of the older preschool children are mostly ranked to the lower positions. It should be noted that the level of awareness of the specifics of relationships among the older preschool children living in a provincial society is extremely low, which is explained by their insufficient experience in interpersonal interactions, 5-7 years old children are looking at the external reaction of another person, often not realizing the level of this person's importance to themselves. They are indiscriminate in establishing social contacts and strive for any kind of communication, in connection with which they assign 1st, 2nd or 3rd rank to each of the subjects of socialization.

In order to identify the distinctive features of interaction between older preschool children and their peers, we used observation and expert evaluation of the socialization of children belonging to this age group under the method of N.V. Mikliaeva (2017). According to the results of our research, the older preschool children may be divided into three main groups with a high 21.3%, an average 42.6%, and a low 36.1% level of socialization. The diagnostics revealed that in the older preschool age the system of relationships with peers becomes highly saturated, diverse and cooperative. As concerns communication with peers in this age group, the contacts of equal status are assumed. When communicating with peers, the older preschool children are able to take into account each other's point of view, negotiate, find compromises, express their attitude to the current situation, propose possible development scenarios in the process of play activity; the predominant motive in interaction with peers is the play, while the business motive in interaction is demonstrated by the older preschool children with low sociometric status, the personal motive in interactions is most often shown by children holding leading positions in the group of peers. The general tendency as concerns interactions in the peer group is the limited scope of interactions in a spontaneous environment. The yard games and mixed-age children's communities, which used to be an important component of socialization, have almost vanished. The provincial society, as the research shows, to some extent still preserved this kind of interactions of the older preschool children. Through interactions in a mixed-age community of children, an older preschool child gets the opportunity to adapt independently in the group of peers, and effectively develop many social skills.

In the process of experimental work an attempt was made to study the level of awareness by the older preschool children of the main social categories. For addressing this objective, the method "Unfinished Sentence" was used. Children were offered to explain such elementary social concepts as "a friend", "a family", "kindness", "mercy", "responsiveness", etc. It was found that as the older preschool children grow older, their understanding of basic social perceptions, concepts and knowledge improves; the number of social concepts used by them in speech increases; the content aspect of the studied component undergoes changes due to the growing number of attributes and categories included in the active vocabulary and resulting from clarification of the already assimilated information.

For studying understanding by the older preschool children of the motives of other people's actions; their ability to develop a communicative situation; their ability to establish an emotional connection with adults, a peer or a group of peers, the method "Unfinished Situations" was used (A. M. Shchetinina, L. V. Kirs) (Shchetinina, 2000). It was found that a significant portion of respondents (40.7%) have an insufficiently stable social and moral behavior, characterized by situational reactivity, which is tied into their age specifics; a significant number of older preschool children (31.4%) demonstrated absolute inconsistency in socio-moral norms and behavior in some aspects of the research.

Based on the results of diagnostics intended to identify the level of social development of the older preschool children, three groups were identified. Older preschool children with a high level of social development have deep objective knowledge and subjective ideas about socio-moral norms, fully understand the motives behind other people's actions; are able to establish an emotional connection with adults, peers or a group of peers; and are ready for collective interactions to deal with arising social situations. Children with a medium level of social development have some objective knowledge and subjective ideas about socio-moral norms, understand the motives behind other people's actions in some situations; are able to establish an emotional connection with adults, peers or a group of peers; are partially ready for collective interactions to deal with arising social situations; are able to determine the algorithm of actions with the help of adults or peers. The older preschool children with a low level of social development do not have the objective knowledge and subjective ideas about socio-moral norms, regardless of situation, do not understand the motives behind other people's actions; are not able to establish an emotional connection with adults, peers or a group of peers; and are not ready for collective interactions to deal with arising social situations.

The results of diagnostics of the levels of social development of the older preschool children living in a provincial society are presented in Table 1 produced by the authors.

Table 1 Diagnostic results of the level of social development of senior preschool children living in provincial society (%)

Level	Total respondents	High	Medium	Low
Group of children	108	25	41,6	33,4

Source: the authors

The results yielded at the ascertaining stage of the experiment showed that most of the older preschool children in the provincial social environment have low and medium levels of social development.

## 5 Conclusion

Social development of the older preschool children is an important predictor of their success at other age stages. During this age period, children actively enter the socio-cultural environment, their interest in learning more about social reality and the interactions with the "world of people" grows stronger. Through interactions with the world and the people around, the children satisfy their needs for self-fulfillment as expression of

own self among "others" and the need to find their own place. The leading subjects of relationships with the older preschool children are adults, acting as the role models of social behavior, transmitters of the ethical norms of interaction, and the peer group driving the development of mechanisms of interpersonal perception and understanding, instilling of positive personal qualities, performance of certain social roles established by the system of interpersonal interactions. Intergenerational interactions remain a priority in the modern provincial family, and the leading social role in the upbringing and socialization of children belongs to representatives of the older generations. However, the life space of an older preschool child in a modern provincial family becomes more and more limited, the number of activities that are appealing and interesting for children is reducing, the time they spent watching TV shows and playing computer games is increasing considerably, which hinders the process of social development. In a provincial society, influence of a peer group on the social development of an older preschool child in a spontaneous environment within a mixed-age children's community continues to some extent.

In the older preschool age, the social sphere develops, the main progress occurs due to the emergence of new social perceptions, the understanding of elementary socio-moral concepts improves, but social perceptions, concepts and knowledge remain fragmented and not yet structured into an organized system. A significant portion of respondents show insufficiently stable social behavior characterized by situational reactivity.

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## PARTICULARITIES OF GENESIS AND FUNCTIONING OF THE DEEP STATE WITHIN VARIOUS POLITICAL REGIMES

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**Abstract:** The paper deals with analyzing particularities of genesis and functioning of the deep state within various political regimes. A deep state is a networking structure integrating various interest groups in a low-profile format; its resource superiority enables it to control the country's social and political process partially or completely. With the course of time, it is procuring of reproduction of its structure that inevitably becomes the priority aim of the deep state. It can take on numerous quite specific forms; meanwhile, its power can be ensured both by the military and security resources and by less heavy-handed means.

**Keywords:** deep state, genesis, networking structure, Iran, Pakistan, USA, Turkey.

### 1 Introduction

In recent years, the term "Deep state" has been used within the discourse of political science increasingly extensively. D. Trump's actions as the US President, his losing the 2020 election, as well as domestic political events of the USA accompanying it, spurred the growth of interest of the general public and representatives of the expert community in the topic of the "Deep state" (Osnos, 2018; Travkina, 2020). However, debate of the said question was largely rendered unconstructive due to attempts to marginalize this concept.

Alongside the essence of this term getting distorted by both its supporters and opponents, appeals for abandoning this concept and explanatory models associated with it voiced by some politicians and columnists generate the necessity of making the content of this scientific concept more precise by summing up new conceptual approaches and empirical data.

As previously noted by the authors, analysis of the functioning of any socio-political system necessarily requires, first of all, the creation of its "non-material image", i.e., an information and mathematical model. The corresponding stage of scientific research requires the researcher to ensure that the constructed models are as close as possible to the real subject of research. However, in practice, this requirement is often forced to be violated, in particular, due to the impact of such a factor as a lack of information" (Pronchev & Mikhailov, 2020, p. 434-435).

The principal task of this paper is to find out general and specific particularities of functioning of the deep state within various political regimes for constructing a mathematical model of functioning of the deep state further on. For methodology of mathematical modeling of systems which are difficult to formalize, one can consult the monograph by A. A. Samarskii and A. P. Mikhailov (2002). A similar approach was in use earlier, for example, for mathematical modeling of clans as a factor of political system (Pronchev & Mikhailov, 2020; Mikhailov & Pronchev, 2020), corruption (Mikhailov et al., 2013; Mikhailov & Gorbatikov, 2016), and various aspects of information warfare (Mikhailov et al., 2018; Petrov et al., 2018; Petrov & Proncheva, 2019; Petrov & Proncheva, 2020).

### 2 Literature Review

The concept of a deep state (sometimes, the term "Parallel state" is used instead) came to be employed as a means of interpreting the system of political institutions at the end of the 20th century. This term (which is the Derin devlet concept directly translated from Turkish) was first used to denote low-profile power institutions supplementing or substituting themselves for official agencies of political administration in states of the Near and Middle East. As for the scientific community, growth of interest in the said range of topics was largely associated with

consequences of the Susurluk scandal of 1996 during which the fact of close cooperation maintained among Turkey's official authorities, Armed Forces management, security and intelligence agencies, organized criminal gangs, and extremist formations was brought to light. Shortly afterwards, experts could confirm work of a similar symbiosis model of these organizations out of public view in Pakistan, India, and Egypt. Later on, researchers started revealing similar political cooperation formats even in Western polyarchies and manifestations of activity of the deep state as far as at the international level, too. In this case, one can cite close cooperation of the authorities of Mexico and the USA with the Guadalajara cartel within financing the activity of anti-government forces in Nicaragua in the 1980s as an illustrative example (Ponkin, 2019).

Existence of the rich empirical material having pronounced national specific features in most cases has brought about the variety of approaches to interpreting the concept of a deep state.

B. Oran used this term to mean a structure within which particular politicians or institutions forming the system of state administration gain an opportunity to complete their own tasks in a borderline illegal way (Oran, 2006). A. Almashat and S. Thabet (2019) interpreted a deep state as a system of organizations and individuals defending corporate interests in a secretive form and for this purpose controlling the course of the political process. Meanwhile, it was noted that the deep state is built beyond the context of democratic administration procedures, has no legitimacy, and appropriates the political power in fact. M. Gunter (2008) defines the deep state as a covert system of decision-making and coordinating actions which unites representatives of political leadership, economic powers-that-be, security, defense, and law enforcement agencies. P. Scott (2013) details the essence of the deep state viewing it as a total of military and security services and/or their staff which is actually autonomous in relation to other elements of the state administration system. According to this approach, the distinctive feature of the deep state is their overriding the rule of law which they substantiate by the necessity to protect the state and society from actual or assumed existential threats (Scott, 2013).

D. Hellinger (2019) interpreted a deep state as an elaborate networking structure which unites representatives of various authorities, first of all, military and security services, and enables them to undermine execution of the political course of the formal head of the state or government, if necessary, or even get him or her removed from the said position.

E. Mérieau (2016) detailed the meaning of the concept under study by an explanatory model which assumes existence of an organized hierarchical autonomous structure incorporating representatives of various authorities (military and security services, judicial system, and so on). It is not seamless; quite frequently, it unites agents considering each other to be competitors. However, the effect of entropy factors is leveled out by their shared interests. In this viewpoint, the deep state is only partially controlled by public authorities or not subordinated to them at all. Deep state structures influence trends of the political process in an indirect way, first of all, by tampering public opinion and fabricating artificial crises. According to this approach, the deep state is anti-democratic in its nature. The objective of its existence is to deprive the broad public of real political subjectness and keep them in such a condition subsequently (Mérieau, 2016).

According to R. Gingeras (2011), a deep state is a system of political interaction among factions within the authorities and beyond them which are not recognized overtly or even are unidentifiable. This concept implies that the deep state is heterogeneous in nature, and it incorporates not only representatives of the state power system. However, it still is law enforcement authorities, security, and intelligence agencies that

play the key part in its structure because the latter hold the monopoly for wording and carrying out national security policy. This lodges them with a wide range of opportunities in terms of influencing the society and other groups of elites (by fearmongering, using damaging material, repressing directly, or organizing clashes with some external forces) (Gingeras, 2011).

M. Lofgren (2016) considers a deep state to be a hybrid structure uniting representatives of security and intelligence agencies, law enforcement authorities, defense, financial, and foreign services, as well as the business community segment affiliated with them. Relying on the empirical data collected within studies of the US political system, the researcher concludes that in the present-day USA, the deep state, despite its non-democratic nature, is still partially controlled by the public power system: functioning of deep state structures is coordinated by the Presidential Administration via the National Security Council of the USA (Lofgren, 2016).

According to S. A. Modestov (2018), a deep state is a system of concentrating the political decision-making opportunities in the hands of individual groups of civil servants and representatives of expert communities associated with them. The political administration function is carried out by the deep state by creating informal institutions of decision-making and approval. These groups within the deep state conglomerate are closely connected with elites and oriented to achieving goals viewed as strategic for the state machinery by the factions of powers-to-be, accordingly (Modestov, 2018).

The authors believe that as a deep state has its own distinctive features, it can be considered a networking structure uniting diverse influence groups (for example, representatives of business and finance affiliated among them, state authorities, local self-government ones, mass media, public organizations and movements, and various criminal gangs) into a single system in a low-profile format. At the expense of resources it possesses, the deep state can partially or completely control the country's social and political process, substituting itself for the official legal administration system in fact. The deep state is first of all oriented to procuring of reproduction of its structure and achieving the strategic aims of its constituent influence groups.

The characteristic feature of the deep state is reproduction of counterpart institutions primed by its functioning. Usually, this process violates the procedure of interaction between the civil society and the state (Pronchev et al., 2016; Pronchev et al., 2018), which triggers the growth of mistrust in the official power. Attempts of resolving the controversies within the above system do not generally yield a positive outcome because virtually all actions of the state can be undermined by the deep state. Nevertheless, the resulting situation leads to a part of the civil society developing rancor and demanding transformations of the system of administration. In fact, this is requirement of forced renewal of the state power and, as a consequence, eradication of the existing deep state. Thus, the long-term stable existence of the deep state can be provided either by periodical large-scale concessions to the broad population or by distracting the civil society from the problems amassed. This can be achieved, for example, by engaging in an external conflict or using various tools of terror against the civil society. So, quite frequently, the authorities of Columbia or Mexico in fact cede the control of certain regions to criminal gangs. As a result, a significant proportion of the civil society migrates to other regions or countries or switch to the individual survival model (Pronchev et al., 2019; Sushko & Pronchev, 2021).

### 3 Research Methodological Framework

The objective of this research is analysis of particularities of genesis and functioning of the deep state within various political regimes.

The principal research tasks are as follows:

1. to analyze methodological approaches to the study of the concept "deep state";

2. to analyze deep state accomplishment cases within various political regimes;
3. to find out the correlation between the form in which the deep state is materialized and the current political regime.

Methodology of the work is derived from the combination of structural and comparative analysis elements.

The empirical basis of the research consists of cases of the USA, Turkey, Pakistan, and Iran.

## 4 Results and Discussion

### 4.1 Methodological approaches to the study of the deep state

In most cases, the study of functioning of the deep state conceptually relies on variants of the functional representation theory; among these, it is the neo-corporatist approach that is the most popular one with researchers.

The theory of functional representation interprets relations between the state and society as a series of interactions between interest groups who word, defend, and promote needs of social, political, or economic communities within the context of the process of goods distribution (Peregudov et al., 1999).

A. Bentley notes that as a rule, interest groups have a complex structure incorporating representatives of business, authorities, mass media, public organizations, and expert platforms. With regard to this, their integration is ensured by extensive horizontal mobility. So, owing to their ramified associations within power agencies and an understanding of intricacies of their functioning, retired public servants can always count on some interest on the part of HR managers of large companies. Equally, representatives of top management of private corporations frequently hold elected positions, including those in the system of regional vertical of power within territories which are strategically significant for the company (Bentley, 1949). As noted by S. V. Rastorguev (2016), this kind of "mutual exchange" is a natural consequence of human resources circulating between the state and business – which occurs in corruption-laden forms, among other things. In particular, civil servants or their family members can be included on the executive board of large commercial organizations or get the title to a part of the company's assets (Rastorguev, 2016).

D. Truman (1951) placed emphasis on the fact that interest groups can interact with the state in an informal way and stressed the importance of integrating into certain interactions of marginalized structures (first of all, criminal gangs) and previously discriminated social strata. The latter is associated with the interest groups' consistent aspiration to expand their resource base and array of political tools, as well as getting all potentially accessible decision-making centers under their control (Truman, 1951).

M. Olson (1965) notes that within developed economies, it is to business structures which act as centers of crystallization of interest groups and unite around themselves subsidiaries operating in various spheres of public life that the role of leading political actors belongs in reality (Olson, 1965).

Ph. Schmitter (1974) emphasizes that interest groups possess mechanisms for controlling the process of HR decision-making in the state administration and they are also vested with unofficial monopoly of wording demands and suggestions concerning the public power. Without their support, for certain agencies, it may be next to impossible to carry out their functions successfully (Schmitter, 1974).

Importantly, neo-corporatism rates the specific ways of interaction of interest groups as follows: in spite of the competition existing among them, these communities still demonstrate an inclination to cooperate within providing for strategic interests of powers-to-be (Shapkin, 2016).

Accordingly, in terms of the functional representation theory, the deep state can be viewed as a product of the process of delegating representation of social and economic corporations' interests to certain groups of leadership elite. Its gradual evolution has contributed to the representation institutions getting out of touch with their social base and, at the same time, has led to emergence of stable networking structures uniting various interest groups.

#### 4.2 Examples of materialization of the deep state within various political regimes

Practice shows that particular forms of manifestation of the deep state can vary considerably, depending on the certain country's background: circumstances of origin of political regimes in question, power and stability of public political institutions, scope of civil activism, and economic development.

As for the case of polyarchies, the deep state control of the political process is performed with most formal democratic procedures observed; meanwhile, elements of coercion are either not in use at all or used in mild forms not turning into terror toward opponents (I. Almashat & Thabet, 2019).

So, in the USA, the deep state system relies mainly on the specific circumstances of functioning of horizontal and vertical mobility institutes, as well as on blurring of partisan division boundaries. On the one hand, the personnel circulate continuously between large companies and the state authorities. In this case, it is Facebook's HR policy that can be an example. Since 2013, this social network has vested organization of the content moderation in M. Bickert who previously held the U.S. Attorney office (FNVP, 2019b). Her team is formed partially from former Defense workers, and partially from those employed by the White House when the Presidential Office was held by B. H. Obama II (FNVP, 2019b). Global security service of Apple Inc. is largely manned by former staff members of the National Security Agency of the USA and Pentagon, too (Hoskin & Mostrous, 2020).

At the same time, both current and former civil servants are extensively engaged in the work of numerous nonprofit organization which are post-partisan in nature and closely affiliated with big business. For example, Twitter cooperated with The German Marshall Fund of the United States (GMF) within creation of Alliance for Securing Democracy (ASD), a bipartisan transatlantic group with its stated aim of "countering efforts by Russia to undermine democratic institutions in the United States and Europe". Members of Advisory Council of this organization include R.H. Ledgett, former deputy director of NSA; M.J. Morell, former acting CIA director; M. Chertoff, former U.S. Secretary of Homeland Security, and M.S. Rogers, former chair of the House Intelligence Committee (FNVP, 2019a).

Convention of many American politicians' partisan affiliation is also confirmed by A.A. Schwarzenegger's message blaming D.J. Trump of seeking a coup in January, 2021. Formally, this could be considered as gross violation of party discipline by the high-ranking Republican. It was his support that predetermined J. McCain's winning primaries on the eve of the 2008 election, which vividly characterizes his position on the Republican side. However, A.A. Schwarzenegger's actions did not cause any tangible reaction with the Republican powers-to-be. While he was married to M. Shriver, he had time to build a solid bond with the Democratic Kennedy "clan" the representatives of which go on playing a serious part within leadership elite of the USA. So, J.P. Kennedy III is currently a member of the Congress House of Representatives, and C.B. Kennedy held the office of the US ambassador in Japan until 2017. A.A. Schwarzenegger's founding of the Institute for State and Global Policy at the University of Southern California is remarkable; its official mission is to advance "post-partisanship" within powers-to-be of the USA. Finally, it draws attention to itself that his belonging to the Republicans has not prevented A.A. Schwarzenegger from supporting the Democratic stance on such

questions as the legal status of abortions and rights of LGBT (VN, 2021).

Alongside business grandees' merging with administrative elite and partisan boundaries getting leveled out, the formation and development of the deep state in the USA is furthered by "preservation" of the top echelons of the political elite. So, according to the 2019 data, 45 of 100 US Senators belonged to the age group of 65 to more than 80 years old. Meanwhile, many Senators older than 80 held key positions in the upper chamber of the Congress: C.E. Grassley chaired the United States Senate Committee on Finance, R.C. Shelby – the Senate Appropriations Committee, and J.M. Inhofe was head of the Committee on Armed Services. As of the same date, 16 of 535 MC did their duties continuously for over 40 years. The age of 27 governors of states out of 50 was over 60, with the average age being 62 years old (Travkina, 2020).

Meanwhile, a significant proportion of representatives of the political body largely "inherit" their offices. In this case, some high-ranking politicians, such as N. Pelosi, E. Cheney and some others, can be a vivid example (Hellinger, 2019).

At the same time, reduction of chances for an "average American" to make a career in politics is observed. According to the US National Center for Education Statistics, the average college fee for 4 years of tuition tripled over the period of 1963 – 2015. Meanwhile, in the USA, real earnings of middle-class households shrank by 8% as early as within 2000 – 2012. The increment of the amount of debt on "student loans" in the country made 100% over the period of 2009 – 2017 (with the total amount climbing above USD 1,3 trillion). According to the data of Pew Research Center, within 1970 – 2014, the proportion of middle-class households went from 62% down to 43% in the USA. Since mid-1970s, the time for a medium-income citizen to save money for the mortgage downpayment has increased from 5 to 14 years. Since the beginning of the 21st century, the proportion of the US citizens aged 25 – 37, not married, and living with their parents has gone up to over 20%. 22 million of the said people have a higher education. A consequence of advance of these trends included lower vertical mobility, a more pronounced trend of HR lock-in of the interest groups, and a higher extent of their control of the political decision-making process. Another consequence was a larger gap between the bulk of the population and representatives of the deep state (Hellinger, 2019).

As for authoritarian political regimes, circumstances of genesis of the deep state have resulted in following democratic or merely formal political procedures more in the form of their symbolic imitation than actual adherence to them. They have also conditioned a broad practice of violence against any opposing forces. By contrast with polyarchies, extremist organizations and criminal gangs, too, are extensively used as a tool of suppression here.

Turkey's deep state was formed partially under the influence of dominance of the military in the political elite and the heritage of secret societies which were formed back in the period of existence of the Ottoman Empire, partially under the effect of the ideology of alarmism shared by the local nationalists from the point of creation of the republic. Cultivation of the political myth about the external threat, alongside the Kemalists' mistrust in the traditionalist-minded ordinary rural population, contributed to elaboration of the anti-democratic political culture. Within the latter, elites were positioned as an only defender and enabler of the principles of construction of a secular republic in Turkey, capable of ensuring its economic development, scientific and technical advance. At the same time, militarized nationalist organizations were extensively formed in the country. The most well-known and influential one among them is Bozkurtlar. By means of special underground forces, such as Jandarma İstihbarat ve Terörle Mücadele, the military closely interacted with ethnic Turkish gangs abroad, organized crime within the country, and right-wing extremists. This alliance was directed mainly against the left-wing opposition and political organizations of ethnic minorities, the Kurds first of all. The



high level of autonomy and secrecy of the deep state agencies, alongside their having an undeclared permission for extensive use of violence, ensured their stability for a long time. During the years of 1985 – 2000, 35 thousand people were killed as a result of actions of the so-called "death squads". However, after R.T. Erdoğan's accession to power and the failed coup attempt of 2016, the process of consolidation of the political dominance brought about a distinct reduction in the extent of independence of the deep state agencies (Gingeras, 2011).

Specific features of the deep state in Pakistan are associated with India's frozen conflict, the country's closeness to Afghanistan haunted by civil war, and its political heritage of the period of gaining independence. The presence of threat on the part of its Eastern neighbor, later introduction of Soviet troops in Afghanistan, too, and the practice of coordinating joint operations against the USSR with the USA, mainly along the line of Inter-Services Intelligence (ISI), determined several parallel trends in the development of the state administration system. Firstly, the military won dominance in the sphere of political decision-making. Secondly, ISI was endowed with authorities required for controlling the domestic opposition, gained extensive autonomy, underwent Islamization and fragmentation. Due to that, the formally uniform security and intelligence agency got several decision-making centers at a time. On top of that, a number of its structures actually made an alliance with religious extremists, groups of traffickers or drug dealers. Thirdly, in spite of segmentation of the military and security services as the "ruling class", they retained their ability to cooperate in cases of any threats to the current political system emerging (Ponkin, 2019).

In Iran, the specific circumstances of formation of the deep state were first of all associated with A. Khamenei's special position that in fact stood above all branches of power. Secondly, the presence of the "second armed forces" in the country represented by Islamic Revolutionary Guards Corps played its part. Thirdly, the said circumstances were brought about by the relative weakness of political institutions against the background of traditionally strong interpersonal relations, and, finally, by the harsh sanction regime. As a result of these factors interacting, Iran got numerous semi-autonomous decision-making centers which were only accountable to the supreme moderator in the person of A. Khamenei. Overlapping each other's functions, the military and security services are not seamless formations, and their constituents can be controlled by different factions of powers-to-be at the same time. Absence of the rigid subordination vertical and the top leaders' interest in maintaining balance among the elites open up the "window of opportunities" for representatives of the latter in terms of illegal use of the security resource for accomplishing their own tasks. In a whole number of Iran's near-border Ostans (provinces), the central authorities wishing to grant the local population an opportunity to provide at least marginally acceptable level of life for them turn a blind eye on their organizing large-scale trafficking. Meanwhile, the deep state agencies use the smugglers' networks extensively for fulfilling their own tasks or participate directly in carrying out suitable schemes to gain an additional source of income. What is worth to be noted individually is that each of the deep state structures controls certain segments of the domestic market directly or indirectly. Political and economic segments of the elite become integrated, with the former constituent clearly dominating (Modestov, 2018).

## 5 Conclusion

Thus, it can be stated that using the concept "Deep state", a vast array of quite heterogeneous regimes considerably differing in both the form and content is described. However, there is a shared attribute to make all of them related: they are distinguished by worsening dysfunction of formal political administration institutions. The said dysfunction is associated both with external factors and circumstances of the origin of certain political regimes and with specific nature of the adopted social and economic development model. With regard to this, even its representatives can initially perceive the deep state as a

means of compensating for inefficient work of the public power institutions. However, in the end, it inevitably starts prioritizing the task of ensuring its own reproduction above everything.

The deep state can get established both by conspiratorial and coercive ways and in less heavy-handed forms, by de-operationalizing vertical mobility institutions, intensifying the exchange of resources between the private finance and commercial sector and the state, and making the political parties actually converge. Meanwhile, these agencies get out of touch with their initial social base.

As for relations among the deep state segments and within the entire structure, these are largely determined by specific circumstances of the political regime and the economic development level of the state in question. In the case of polyarchies, some kind of balance of interests between the state officials who are members of influence groups and their partners from business community representatives is noted. In more authoritarian regimes, what is observed is dominance of the state power segment ones – security, defense, and law enforcement agencies, first of all.

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## PSYCHOLOGICAL TRAINING AS A TECHNOLOGY FOR LEVERAGING ANXIETY LEVEL IN MODERN ADOLESCENTS

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**Abstract:** The relevance of the research is associated with the necessity of creating new technological solutions to ensure adolescents' mastering successful ways of action under various anxiety increasing conditions. The objective is to substantiate the particularities of psychological training as a technology for leveraging anxiety level in modern adolescents. In the paper, analysis of diagnosing materials is presented; the program of psychological training "Being in harmony with oneself" is characterized; and the essence of the training technology for leveraging anxiety in adolescents is detailed. The authors substantiate that adolescents with polar anxiety levels must be united into the same training group; they have to master both general and differentiated ways of action, proceeding from their anxiety kind, type, level features.

**Keywords:** anxiety, stress, fear, adolescence, psychological training, technology, leveraging.

### 1 Introduction

Modern trends in education are indicative of the growing proportion of anxious students who are characterized with high worry, emotional instability, lack of confidence of themselves and their forces. According to some authors' data (Zimina et al., 2021), the situation of the pandemic has not affected trait anxiety of students in any notable way, while state anxiety has increased in the majority of them.

Being a general indicator of an individual's emotional disadvantage, disorder of psychological health, anxiety has a clearly marked age-related specific nature. It is adolescents who are most susceptible to manifestations of anxiety. In them, high anxiety has a negative impact on their cognitive, emotional, and behavioral spheres frequently, reduces the effectiveness and success of academic activity, and eats away at the quantity and quality of social relations. Meanwhile, low anxiety in adolescents holds a number of risks, too, that are associated with their underestimating the impending dangers or obstacles and lack of mobilization efforts for preventing or overcoming them.

Under these conditions, the need of modern psychological technologies to promote teenagers' mastering ways of effective action, taking into account causes of anxiety, its characteristic manifestation kinds, and types, is even more urgent. An example of such a technology is the psychological training one which is used for solving various aspects of anxiety-related problems. Adolescents are expected to participate in the training sessions and gain their own experience of achieving positive change in cases of state or personal anxiety based on the available general and differentiated action resources; however, the scientific and methodological framework for that is not yet detailed sufficiently. Hence, studying the potential of psychological training as a technology for leveraging anxiety in adolescents becomes relevant.

### 2 Literature Review

One of the integral ways of analyzing the understanding of anxiety is to apply biological and ontogenetic, object-oriented, anthropocentric, and sociocentric approaches to this problem in sequence.

As viewed by the biological and ontogenetic approach, anxiety is an inseparable mental component forming at the early stages of

ontogenesis. Anxiety is manifested at two levels – the psychological and the physiological ones (Horney, 2000). Its manifestations are characterized by sex distinctions caused by different levels of testosterone (McHenry et al., 2014).

Within the object-oriented approach, the basis of anxiety is made up by a threatening situation which can be real or imaginary yet disrupting an individual's habitual functioning and development. Anxiety is a response to a dangerous, critical situation; it is depersonalized, and it depends on specific circumstances of the situation at hand. Anxiety is manifested as a separate phenomenon having its own pattern of establishment and development. It depends on external (general, integrative, and specific) factors resulting in an individual's internal differentiation (Prikhozhan, 2009).

The anthropocentric approach relies on viewing anxiety as a personal property. C. E. Izard (2006) characterizes manifestation of anxiety in levels, singling out the high, medium, and low levels. Absence of anxiety is not a normal state. The most appropriate level of anxiety is the medium one. High anxiety leads to panic, excessive worry, and success of activity is reduced considerably. Low anxiety slows activity down. Anxiety incorporates individual personality traits which are associated with other mental properties (Erofeeva et al., 2020).

The sociocentric approach is based on consideration of social factors triggering anxiety if skills of social interaction, relations with people, and knowledge of particularities of the way real-life or virtual communication is organized are not formed enough (Segrin et al., 2007; Bonetti et al., 2010; Buyanova et al., 2018 and others).

Psychological and pedagogical literature discusses various grounds for differentiating anxiety:

1. evidence grade of anxiety: objective (caused by an actual danger), neurotic (caused by an undefined danger), and moral anxiety ("anxiety of conscience") (Freud A. & Freud, S., 2018);
2. stability of manifestation in activity: state anxiety (generated by some worrying situation), trait anxiety (generated by feelings of worry which arise stably, regardless of the situation) (Karandyshev et al., 2004);
3. deliberateness of manifestation in activity: open (conscious, clearly manifested in the form of uneasiness), latent (unappreciated, manifested in calmness, insensibility or denial, via indirect behavior forms) (Prikhozhan, 2009);
4. its mobilization potential: mobilizing anxiety (as a boost for activity) and relaxing anxiety (as an inhibitor to its effectiveness) (Lyutova & Monina, 2010).

Yu. M. Edikhanova and E. N. Ufimtseva (2016) note that adolescence is considered a critical age in terms of psychological interactions and character manifestations producing a great influence on the extent of anxiety. I. V. Borisova (2018) emphasizes the necessity of preventing decrease of academic motivation in anxious teenagers at the point of their starting middle school. M. E. S. Loevaas et al. (2018) study parents' ability to detect symptoms of anxiety and depression in their children aged 8-12 and to help them regulate their emotions. The work by Y. V. Vardanyan et al. (2021) discusses ways of building parents' competencies to promote reduction of anxiety in their maturing children in adolescence. A number of studies present successful experience of medical work with anxious teenagers: the use of consistent desensitization when treating school phobia in boys (Houlihan & Jones, 1989), the use of capacities of interpersonal psychotherapy for teaching adolescents skills of coping with anxiety (Young et al., 2012). V. I. Dolgova et al. (2019) present consideration of individual and typological features at PT classes as an efficient way of curbing school anxiety.

There is a bulk of studies dealing with fundamentals of training work (Vachkov & Deryaba, 2004; Kondratyeva et al., 2018; Bobchenko, 2021 and others). Many authors suggest solving various psychological problems through preparing personnel for effectively promoting social changes (Nandan & London, 2013), through the use of training technology for introducing future psychologists to professional self-development (Vardanyan et al., 2014) and creative advance (Vardanyan et al., 2016), with a positive effect on anxiety included. However, psychological training as a technology for leveraging anxiety level in modern adolescents remains understudied, which enhances researcher interest in this topic.

### 3 Research Methodological Framework

The objective of this research is to provide theoretical substantiation for and design the program of psychological training as a technology for leveraging anxiety level in modern adolescents.

Tasks of the research are as follows:

- to evaluate and characterize the kinds and levels of anxiety in adolescents;
- to identify and compare the levels of state and trait anxiety in adolescents;
- to detail the developing potential of the training program;
- to substantiate the essence of the training technology for leveraging anxiety in adolescents;
- to single out particularities of the scientific and methodological framework of the training technology for leveraging anxiety in modern adolescents.

In the process of research, for the most part, the authors used theoretical methods (analysis and systematization of the material elaborated in the scientific literature) and empirical techniques (School Anxiety Scale by Beeman N. Phillips (Diagnosing technique, 2011), with the help of which indicators of anxiety kinds in teenagers have been measured; State-Trait Anxiety Inventory by Ch. D. Spielberger (Karandyshev et al., 2004) as adapted by Yu. L. Khanin aimed at studying manifestations of anxiety as a personality trait and a state in adolescents).

The research was conducted in 2020-2021 on the basis of several educational organizations of the Republic of Mordovia, among them: the Nadezhda Republican Social Shelter For Children and Adolescents, advanced-program school No. 19 of Saransk city, comprehensive secondary schools No. 8 and No. 27 of Saransk city, and comprehensive secondary school No. 2 of Chamzinka village. The experiment involved 156 teenagers – students of grade 8.

## 4 Results and Discussion

### 4.1 Kinds and Levels of Anxiety in the Adolescents

Findings of the summative experiment obtained using the School Anxiety Scale technique (Diagnosing technique, 2011) are given in Table 1.

Table 1 Measuring anxiety in the adolescents according to kinds and level

Kinds of anxiety	Levels of anxiety					
	high		increased		low	
	abs.	%	abs.	%	abs.	%
Social stress experience	60	38,5	66	42,3	30	19,2
Frustration of the need to succeed	60	38,5	78	50,0	18	11,5
Fear of self-expression	72	46,1	60	38,5	24	15,4
Knowledge check situation fear	78	50,0	54	34,6	24	15,4
Fear of failing to	96	61,5	42	27,0	18	11,5

Kinds of anxiety	Levels of anxiety					
	high		increased		low	
	abs.	%	abs.	%	abs.	%
meet expectations						
Low physiological resilience under stress	84	53,8	48	30,8	24	15,4
Teacher interaction problems	108	69,2	24	15,4	24	15,4
General anxiety	72	46,1	60	38,5	24	15,4

Source: authors' own processing

According to the findings, the high extent of social stress experience was demonstrated by 38,5% of the adolescents. They had problems in relations with other people, conflicts with those around them, including peers; they could not opt for the most appropriate behavior strategy, and they frequently had few friends. The increased social stress experience extent was found in 42,3% of the teenagers. For them, communication was difficult with some people, and they had difficulty setting up contacts. 19,2% of the adolescents had the low extent of social stress experience. For these teenagers, it was not difficult to communicate with others, set up new connections, and they built relations with people around them skillfully.

The high extent of frustration in their need to succeed was shown by 38,5% of the adolescents; in their own activity, they expected failures frequently. The increased extent of this parameter was registered in 50% of the teenagers; it was difficult for them to expect success. 11,5% of the research participants had low frustration in their need to succeed; they were positively-minded, confident of themselves, and their need of success was manifested clearly.

The high extent of the self-expression fear was observed in 46,1% of the adolescents. Their emotional state had a significant influence of their self-esteem; they expected failures and experienced negative emotions. 38,5% of the students demonstrated the increased extent of this fear; for them, it was difficult to expect positive self-expression. The low extent of the fear of self-expression was found in 15,4% of the teenagers. They expressed themselves and their qualities to people around them with peace of mind and experienced positive emotions.

50% of the adolescents scored high on the knowledge check situation fear. These students were highly worried at classes during knowledge check. They were not confident of themselves and their own knowledge; they were afraid of giving a wrong answer, too. They expected failures and experienced negative emotions. The increased extent of fear of knowledge check situations was demonstrated by 34,6% of the surveyed ones. Expectation of a positive knowledge check was difficult for them. The low extent of the knowledge check situation fear was found in 15,4% of the teenagers. They were confident of their knowledge and proactive during the check of knowledge.

61,5% of the students expressed the high extent of the fear of failing to meet expectations; they were concerned about their actions and results, and they jumped to improper conclusions about other people's likely expectations. 27% of the teenagers demonstrated the increased extent of the said fear. For these students, it was difficult to evaluate ideas about themselves and other people's views. The low extent of the fear of failing to meet expectations was found in 11,5% of the adolescents.

Low resilience under stress was registered in 53,8% of the surveyed ones. They perceived all situations as threatening. These teenagers could not distinguish between the real and the imaginary. Increased resilience under stress was observed in 30,8% of the adolescents. They could cope with a crisis situation if they had had an experience of responding to it, while new, unusual situations sent them into a distress state. 15,4% of the

research participants scored high on resilience under stress. They were resistant to stress and emotionally stable.

69,2% of the adolescents noted the high extent of problems and fears in relations with teachers, 15,4% – the increased one, and 15,4% – the low one.

On balance, general school anxiety was found to be high in 46,1% of the students, increased – in 38,5%, and low – in 15,4%.

Thus, a significant quantity of the surveyed teenagers (from 50% to 84,6%) had suboptimal (high or low) levels of various kinds of anxiety.

#### 4.2 State and Trait Anxiety Levels in the Adolescents

The data obtained using the State-Trait Anxiety Inventory technique (Karandyshev et al., 2004) are given in Table 2.

Table 2 Measuring anxiety in the adolescents according to types and levels

Types of anxiety	Anxiety level indicators					
	high		medium		low	
	abs.	%	abs.	%	abs.	%
State anxiety	24	15,4	114	73,1	18	11,5
Trait anxiety	36	23,1	96	61,5	24	15,4

Source: authors' own processing

According to the findings, 15,4% of the adolescents scored high on the state anxiety level. They expressed worry, the feeling of overexcitement, continuous startle and groundless fear for various reasons, dissatisfaction with themselves, and they expected failure in all their undertakings. The medium level of state anxiety was found in 73,1% of the teenagers. These students had individual manifestations of anxiety. The low state anxiety level was registered in 11,5% of the adolescents. In many situations, they demonstrated the feeling of confidence and emotional stability.

The high level of trait anxiety was found in 23,1% of the surveyed ones. These school students demonstrated emotional instability, variability of mood, high concern about their state and results of activity, and disappointment of themselves and their failures. 61,5% of the teenagers had the medium trait anxiety level, with individual manifestations of anxiety noted. The low level of trait anxiety was demonstrated by 15,4% of the research participants. These students were emotionally stable; stress situations did not put them out of temper, and they could find a way out of such situations. They were characterized by optimism, self-confidence, and low worry.

Summing up the research conducted, it can be concluded that among the surveyed teenagers, 27% had suboptimal (high or low) level of state anxiety, and 38,5% – that of trait anxiety.

#### 4.3 Developing Potential of the Training Program

Based on the data obtained during the summative stage of the research, the authors have designed the program of training sessions "Being in harmony with oneself" aimed at leveraging anxiety level in adolescents. It was assumed that psychological training for developing a favorable psychological climate among peers, building a positive self-concept, assertive behavior, and communicative competence will allow leveraging anxiety level in teenagers.

The training program has been designed to be conducted for a mixed group uniting adolescents with polar levels of anxiety (high or low) and to include 10 sessions held 1 time a week, each 45 minutes long. It consists of the following three units.

1. The orienting unit consists of sessions 1 and 2 (creation of a favorable psychological climate in the group, an atmosphere of trust; introduction of the participants of the group). The topics covered are "It all begins with communication", "I am not alone". This unit ensures adaptation of the participants to

the training group, their mastering ways of reducing anxiety at the early stages of establishing social and psychological contact, and mastering ways of mutual support while overcoming agitation and fears or indifference and recklessness of the social and psychological origin.

2. The formative unit incorporates sessions 3–9 (formation of a positive self-image, development of self-control, assertive behavior skills, and communicative competence). It covers the following topics: "On the way to the new self", "What worries us?", "What did I use to be like and what have I become like now?", "We are responsible for our actions", "Thinking positively", "Together we are power!", "Love for oneself is wonderful". These sessions ensure an understanding of expectations (one's own and those of other members of the group) as for participation in the training and accepting them, finding out one's own personality resources and mastering ways of using them in situations of increasing anxiety. They also ensure reinforcing the skills of emotional and volitional self-regulation and assertive behavior practice.
3. The reflective and evaluative unit is session 10 (realization of one's changes, completion of the training). Its topic is "I leave it to remind you of me". This unit provides an understanding of existence of some personal markers to signal possible destabilization of one's state. Here, the experience of positive changes is reinforced under the modeled conditions of experiencing anxiety and overcoming it or of the absence of uneasiness and timely actuation of predicting likely risks. Realization of the possibility of transferring the experience gained into real-life conditions of manifestation of various kinds and types of anxiety is ensured at this session, too.

#### 4.4 Essence of the Training Technology for Leveraging Anxiety in Adolescents

When carrying out the psychological training, the authors suggest using the technology for leveraging anxiety in adolescents under which special attention is paid to differentiation of work proceeding from their anxiety kind, type, and level features, alongside mastering general ways of action. The theme content of exercises, games, situations, and debates is selected taking into account the extent of manifestation of the kinds of anxiety. Let rating of the kinds of anxiety be viewed (see Table 1) based on which the theme content for training sessions in the surveyed sample was selected. With regard to this, for the teenagers having the high level of anxiety, their problematical character is reduced when building the descending rating, and for the low anxiety level ones – the ascending rating. So, when the descending rating is compiled for the high anxiety adolescents, it is the topic of problems in relations with teachers (69,2%) that stands out at the first place. Resolution of these is the most attractive for the said participants of the training. Meanwhile, the last place is occupied by social stress experience (38,5%). For the teenagers having the low level of anxiety, the ascending rating lists the topics of frustrated need of succeeding and the fear of failure to meet expectations at the first position (11,5% each). They are ignored by these participants of the training most of all, and work on these topics ensures prevention of subsequent psychological problems arising in the said adolescents. The last place of this rating belongs to social stress experience, too (19,2%).

The type of anxiety (see Table 2) is also taken into account in the training process when performing differentiated assignments. Pairs, trios, or micro-groups in which the high state anxiety adolescents interact model typical situations causing stress or fear. Parallel with them, teenagers having the low state anxiety model situations which are not perceived in a threatening context initially but which can lead to late decisions and a negative turn of events further on in case of an indifferent attitude to them. After that, the adolescents perform joint search of causes behind such situations, work on ways of their prevention and overcoming, and evaluate the effectiveness of suggested ways in terms of their own, individual experience features.

Similarly, pairs, trios, or micro-groups in which the high trait anxiety adolescents interact model motivation and value-related, individual and typological, emotional and volitional, and some other personality features causing stress and fear or aggravating their effect. At the same time, the low trait anxiety adolescents discuss features associated with excessive self-confidence and tranquility – under which one fails to timely predict unfavorable scenarios and to act, so one lands with omissions and non-fulfilled personal opportunities. Further on, teenagers perform joint search of personal resources for self-regulation and overcoming any psychological problems emerging.

Structure and details of the training sessions ensure focused work with adolescents on their realizing their concealed opportunities of acting in situations of increasing anxiety at various stages (when it is necessary to prevent emergence of anxiety, to reduce the risk of losing control over its manifestation, to prevent possible negative course of events, to mobilize self-regulation potential at the final anxiety curbing phase, etc.).

#### 4.5 Features of Scientific and Methodological Framework of the Training Technology for Leveraging Anxiety in Modern Adolescents

Leveraging anxiety level in modern adolescents is facilitated by psychological training aimed at developing a favorable psychological climate among peers and building a positive self-concept, assertive behavior, and communicative competence in teenagers. However, in the majority of cases, such training sessions are offered for the following purposes: prevention (with universal anxiety prevention ways to be mastered), and correction and development (targeted at teenagers having the high or increased anxiety level, with anxiety curbing ways to be learned).

Meanwhile, adolescents having a low level of anxiety are largely overlooked, and non-involvement of their predictive potential deprives them of the opportunity to timely solve any psychological problems stemming from that. Moreover, the experience of simultaneous work on anxiety with teenagers featuring its opposite levels (high and low) is not used sufficiently, and therefore, the complementarity channel, as the material on the topics expanding the idea about various facets of this problem, is missed out.

Scientific and methodological framework of the technology ensuring high-quality performance of the psychological training for leveraging anxiety manifested in adolescents at the high or low levels is made up by two leading ideas. The first one is to include participants having polar anxiety formation levels on the same training group. As for the second one, general and differentiated ways of action to be mastered by teenagers have to be combined at the training sessions, with their anxiety kind, type, and level features taken into account.

#### 5 Conclusion

In psychology, anxiety is viewed as an integral mental component forming at the early stages of ontogenesis, a human mechanism of responding to situations of impeding danger. Adolescence is considered to be the most susceptible age in terms of anxiety manifestations. The state of such teenagers is characterized as tense, distracted, and watchful. It affects their activities, interpersonal relations, and behavior.

According to their concept, the authors have tested out ideas concerning substantiation of the cycle of ten training sessions "Being in harmony with oneself". Topics of the sessions are brought together in three units (the orienting one, the formative one, the reflective and evaluative one). They ensure scientific and methodological provision of the process of adolescents' realizing causes of their anxiety and ways for preventing or overcoming it, taking into account state and trait resources, both general and differentiated ones.

The technology for leveraging anxiety in adolescents which is carried out in the process of psychological training suggested relies on two leading ideas:

- the training group unites participants with polar levels of anxiety (high and low ones) under the complementarity principle, enriching the teenagers' ideas about various manifestations of the problem in question;
- theme content of sessions takes into account anxiety diagnosing results; it allows combining organization of mastering the general ways of action with differentiated work, proceeding from anxiety kind, type, and level features of the actual students in the training group.

The designed technology is promising; the ideas underlying it can be used in applied research and in professional activity of teachers and psychologists.

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**Primary Paper Section: A**

**Secondary Paper Section: AM, AN**

## FORMATION OF JUNIOR SCHOOLCHILDREN READINESS FOR THE KNOWLEDGE OF PROFESSIONS

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**Abstract:** The article is devoted to the problem of early professional orientation. The author presents an analysis of determining the level of readiness for the knowledge of professions by junior schoolchildren on the basis of an empirical study. The novelty of the research lies in the development of empirical research materials to identify the level of readiness for the knowledge of professions by junior schoolchildren, its conduct and qualitative analysis. The results of the study are intended to help teachers of primary general education to organize an entry academic performance rating of junior schoolchildren in order to diagnose their ideas about the professional world, to build a high-quality systematic work on early professional orientation.

**Keywords:** junior schoolchild, career choice, professional orientation, early professional orientation, professional self-determination, readiness, cognition, questionnaire.

### 1 Introduction

The relevance of the research is due to the mode of continuous search for innovative development in the system of modern education, determinant changes in various components of teachers' activities. Today, primary education is acquiring the function of a serious social institution, and already at this stage, it is necessary to form approaches related to the creation of an integral system for the implementation of a student's professional self-determination, through the identification and development of his abilities. The choice of the future profession and the ways of achieving success occupy leading positions in the structure of self-consciousness of the individual, and as a result, educational activity acquires a certain focus on the professional future. The emergence of potential opportunities of students, the development and realization of their interests and needs requires the creation of conditions for professional orientation at all stages of the educational process.

In psychological and pedagogical research, there are propaedeutic, emotional-figurative, search-probing stages of professional orientation. One of the most important periods in professional orientation is the propaedeutic stage, which falls on the junior school age. The world in which we live is characterized by a dynamic rhythm, active mobility, a large flow of information, and therefore the problem of choosing a future profession has lowered its age limit and is not relevant in the graduating class. A modern child is already an active user of gadgets at the primary school age, information from various sources that he encounters on a daily basis updates his knowledge and ideas about the world of professions and work, which leads to the formation of interests and preferences for certain types of activities.

In primary school, the track of professional orientation is laid by means of extracurricular activities, within the framework of which it is possible to identify readiness for learning professions, and to reveal the inclinations and interests of the child. This is the key task for a teacher in working on professional orientation with primary school students.

### 2 Literature Review

Within the framework of the research, the works of Russian and foreign scientists devoted to the problems of professional orientation were studied and analyzed. Scientific works of recent years carry out the idea of the influence of the information society on the modern generation of schoolchildren. A junior

schoolchild today is an active Internet user, he is able to quickly navigate the network, find the necessary information, use electronic resources, which leads to changes in the child's mental world, his intellectual abilities. However, at the same time, in the psychological and pedagogical literature, the aspect related to the methodology and content of preparing a student of the XXI century for future work is poorly developed. Russian scientists V. I. Blinov and I. S. Sergeev (2016), A. E. Grebneva and O. Y. Yelkina (2019), V. A. Gurtov and E. A. Khoteeva (2018), N. F. Rodichev and E. O. Cherkashin (2019), and others emphasize the idea of the relevance of early professional orientation: it is necessary to teach to choose a profession from primary school age.

The author's research position and personal contribution to the development of methods of the propaedeutic stage of professional orientation of junior schoolchildren is presented in a number of publications (Antonova, 2019, 2020). According to the author's position, the propaedeutic stage of professional orientation activity in the junior school does not imply the acquisition of a stable attachment by the child to a certain profession that he will be engaged in in the future. The main goal of this activity is to form the ability to choose, to introduce the world of professions, to motivate interest in work, to emphasize the importance of labor skills. This problem does not fall into the area of interest of the educational organization and the teacher, namely, the stage of propaedeutic training of a younger student is important for his professional future.

Professor S. N. Chistyakova (2014) made a huge contribution to the development of the professional orientation system in Russia. Various aspects of the choice of profession, self-determination of the individual are actively discussed on the pages of the scientific and methodological journal "Platform-navigator: career development", the basis of which she was the editor-in-chief. According to the idea of S. N. Chistyakova (2014), the personality of a teacher is a key figure in choosing a future profession, the subject of professional orientation is pedagogical support, skillful support of professional self-determination of the individual.

Abroad, the experience of working on professional orientation with junior schoolchildren is well represented by American and Japanese researchers. However, in Western literature, the term "professional orientation" is not used, the concepts of "career planning" and "career development" are used. Career planning includes systematic work: consulting and step-by-step design of the career and educational trajectory of the future professional activity, which includes advanced training and professional retraining throughout a person's life (Gurtov & Khoteeva, 2018). Thus, the system of career guidance in the United States was built with the help of the activities of the psychological service "Guidance" (founder F. Parsons (1908)), which was the beginning of the consultative and diagnostic direction of practical psychology in this country. Currently, its representatives are available in every educational organization and at every stage of school students undergo professional counseling and diagnostics. F. Parsons (1908) defines professional choice as a process in which an individual meets the requirements of various professions with their psychological and physical qualities. Purposeful career guidance work in the United States begins with the final grades of elementary school, at this stage of education; much attention is paid to introductory conversations about the world, society and professions in it. With students of this stage, it is mandatory to conduct diagnostics to identify professional preferences and inclinations for a particular profession. It is from this period that specialists develop individual professional recommendations for each child, which are discussed with parents (Kuznetsova, 2014).

In foreign studies, the authors J. Beishuizen, W. van Os, M. te Wierik (2015) note that the choice of school subjects is important for the realization of a career trajectory, therefore,



already in the final grade of junior school, it is necessary to understand which disciplines will be major in the middle stage of education. N. Arif, H. Hadiyanto, A. Mukminin, F. Failasofah, N. Fajaryani, A. Habibi (2017) actualize the importance of early professional orientation for the formation of readiness to choose a future profession.

In Japan, career guidance in modern schools is an integral part of the educational process, starting from the lower grades. At this initial stage, the professional orientation of students is being laid and the formation of readiness for choosing a profession in the future is underway. During their classes, children not only expand their horizons, but also train the ability to self-knowledge, learn to process information about professions, since an important principle of career guidance for schoolchildren is the development of the ability to analyze professions. In the system of career guidance work of Japanese schools, it is valuable to use practical tests to control the level of work experience of each student, to assess personal abilities and individual characteristics in the really created conditions of various professions. By the graduation stage, young people clearly understand who they want to become and why, what professional and personal qualities they have for this and in what conditions they will work (Tolstoguzov, 2015).

The experience of Germany in career guidance is presented in the article by H. Kress (2019). The author shows how professional orientation, closely correlating with social policy, has become a strategic tool for the economy and professional development of personnel, both in the private and public sectors.

The positive experience of career guidance work abroad, of course, needs to be adopted and adapted into the system of specialized training of Russian schools.

### 3 Research Methodological Framework

Junior schoolchildren are still chronologically far from choosing a profession, but competent systematic work on professional orientation will be the basis on which the interests and desires of graduates will be formed in the future. In this regard, accessible and understandable information about the world of work and professions, on the part of the teacher, and the willingness to learn it, on the part of the student, is the starting point of the route. The purpose is to determine the level of readiness for the knowledge of professions in junior schoolchildren.

The tasks are:

1. to investigate modern psychological and pedagogical approaches to early professional orientation and diagnostics;
2. to present a pedagogical resource of extracurricular activities in the track of professional orientation;
3. to develop a questionnaire for primary school students to identify the level of readiness to learn professions;
4. to determine the system of criteria and indicators of children's readiness to learn professions;
5. to diagnose the level of formation of readiness of junior schoolchildren to learn the world of work and professions;
6. to process and interpret the results of the study.

The following methods are used to solve specific research tasks:

- *integrative*, which contributes to the unification of methods of pedagogy and psychology for the theoretical study of problems of early professional orientation;
- *comparative*, for a comparative analysis of the concepts and ideas of Russian and foreign scientists on the studied problem;
- *empirical*: survey of primary school students;
- *methods of quantitative and statistical analysis*, generalization and systematization of survey data, mathematical data processing.

In order to determine the level of readiness for the knowledge of professions by junior schoolchildren, an empirical study was conducted, it took place on the basis of seven general education

organizations of the city of Saransk in the third grades of primary school: Municipal Educational Institution "Gymnasium No. 29", Municipal Educational Institution "Lyceum No. 26", Municipal Educational Institution "Lyceum No. 7", Municipal Educational Institution "Secondary General Education School No. 2", Municipal Educational Institution "Secondary General Education School No. 35", Municipal Educational Institution "Secondary General Education School No. 37", Municipal Educational Institution "Secondary General Education School No. 41".

The study was conducted in 3 stages: 1) preparation of a package of diagnostic material necessary for studying the level of formation of readiness for learning the world of professions by junior schoolchildren; 2) conducting a questionnaire; 3) processing the results and their analysis. This study involved 293 primary school students aged 9 years.

The survey was conducted in a group form in writing, on special forms. The questionnaire was developed taking into account age characteristics for primary school students, and included questions for assessing cognitive (the presence of ideas and knowledge about professions and practical activities of a person), motivational (the presence of interest in studying professions), emotional (the presence of a response at the level of pleasure and experiences from learning human professions) and behavioral (the presence of practical experience) components of readiness to learn professions. The questionnaire consisted of closed questions, with two possible answers, which were adequate in terms of wording for junior schoolchildren to understand. In total, the questionnaire contained 12 questions and had standardized characteristics when processing the received data. According to the sum of the points scored, the conclusion was made about the formation of the components and the general readiness for learning professions in junior schoolchildren.

### 4 Results and Discussion

The success and correctness of choosing a future profession depends on how prepared this decision is. A detailed, systemically organized professional orientation from the first to the final grade plays a key role in this issue. Professional orientation is understood as an informational and organizational set of measures aimed at the process of choosing a future profession, in accordance with the desires, inclinations, abilities of a person and taking into account the social needs of society. Preparation for choosing a profession is also important because it is an integral part of the comprehensive and harmonious development of the individual, and it should be considered in unity and interaction with the moral, labor, intellectual, aesthetic and physical improvement of a person.

Modern approaches to choosing a profession in the context of professional orientation activities for schoolchildren carry out the idea of preparing a person as a subject of future professional activity. This means that professional orientation does not imply an unambiguous choice of a school profession for life, but forms in him the ability to be ready to make a choice (selection) of his professional future, with the understanding that it is in this area that he can fully realize himself and get moral and material satisfaction (Romanov, 2020, p. 164). The readiness of a student to choose a profession is interpreted as a complex integral state of a person, characterized by a set of moral and psychological qualities of a person that enable him to realize his capabilities, abilities and his attitude to a certain professional activity (Tambovkina, 1999, p. 71).

The system of professional orientation was developed by prominent Russian scientists and has a certain structure, its main components are professional education, professional consultation, professional selection, professional training, professional adaptation, professional education (Chistyakova, 2014). It is with professional education, according to the authoritative opinion of Professor S. N. Chistyakova (2014, p. 104), that early professional orientation should begin, during which students receive specific knowledge about a particular

field of work. In the key of this idea, we conducted a study designed to determine: is a junior schoolchild ready to learn professions? The conducted research is a kind of input control for the further development of systemic measures for professional orientation in primary schools.

The empirical results of the survey of junior schoolchildren are presented in Table 1 and Figures 1, 2.

According to the results of Table 1 and Figure 1, the ratio of the levels of development of the components of readiness for learning professions by schoolchildren is shown; most children have an above-average assessment of the emotional (90.1 %), cognitive (72.4 %), behavioral (67.5 %) and motivational (90.1 %) content of this readiness. The interpretation of these data demonstrates that junior schoolchildren like to study people's professions, they can tell about them themselves, they want to learn about the spheres of professional activity and they have their own little experience in any practical field.

All components (Fig. 1) have an insignificant percentage of their lack of formation in the respondents, which can be explained by the limitations of such children in social contacts (communication with peers, visits to additional education organizations, hyperprotection in the family, etc.), the lack of opportunity to discuss the topic of professions with adults, low intellectual development and other reasons.

The data in Table 1 and Figure 1 demonstrate the predominance of the formation of the emotional and motivational components of readiness to learn professions at an above-average level (90.1% each), this is explained by the fact that junior schoolchildren have a lively emotional response to topics that are interesting to them, differ in novelty, usefulness, brightness. Extracurricular activities for professional orientation meet these requirements, provide an opportunity to learn professions and are positively evaluated by junior schoolchildren.

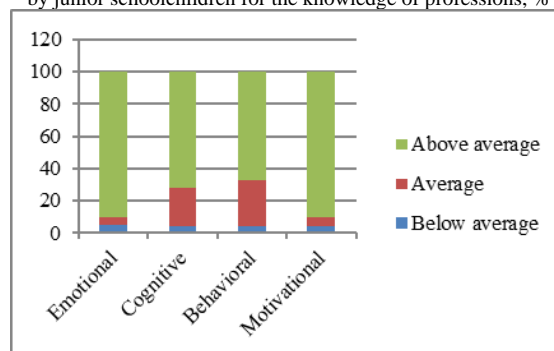
Table 1 Readiness level of junior students for the knowledge of professions

Components	Levels of formation		
	Below average	Average	Above average
Emotional	4,8 % (14)	5,1 % (15)	90,1 % (264)
Cognitive	4,1 % (12)	23,5 % (69)	72,4 % (212)
Behavioral	3,8 % (11)	28,7 % (84)	67,5 % (198)
Motivational	4,4 % (13)	5,5 % (16)	90,1 % (264)
General readiness	2,4 % (7)	20,5 % (60)	77,1 % (226)

Source: compiled by the author

It can also be noted that younger schoolchildren quite objectively demonstrate knowledge about professions of various contents (cognitive component) and the ability to do something in a particular practical activity (behavioral component) at their age level. The percentage of their formation is slightly lower than the emotional and motivational components. This indicates that, in accordance with their age characteristics, the personality of a primary school student is aimed at expanding his horizons and developing motivation to achieve success in educational activities.

Figure 1 The ratio levels of readiness components development by junior schoolchildren for the knowledge of professions, %

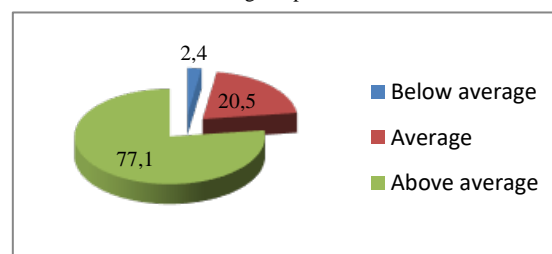


Source: compiled by the author

In the context of the interpretation of the data in Table 1 and Figure 2, there is also a positive assessment of the formation of readiness of junior students for the knowledge of professions at an above-average level (77.1 %). This indicates the positive potential of the child's personality to master ideas and knowledge about the world of professions. Such children respond emotionally to professional orientation topics, they are interested in them and cause a desire to try themselves in this sphere. Junior students successfully simulate practical situations, participate in role-play games, simulations.

The results show that 20.5 % of respondents have an average level of readiness to learn professions. This part of junior schoolchildren is distinguished by personal mental characteristics, their interest and need for classes about professions is stimulated by adults, and not by internal beliefs. They can also participate in professional orientation classes with pleasure, provided that they are conducted brightly and interestingly.

Figure 2 Levels of readiness formation by junior students for the knowledge of professions



Source: compiled by the author

The survey analysis revealed respondents with low indicators (2.4 %) of general readiness to learn professions. There are few of them, but they are there and they note in the questionnaire that they do not like many professions and do not understand them; there is no desire to do this at all. The children indicated that they do not know who they would like to become, who their parents work for, there is no additional employment in their free time. These answers demonstrate the narrow outlook of children, the poverty of emotional communication, the disorganization of their leisure activities, and lack of a motivator in the person of a significant adult.

## 5 Conclusion

To design a successful professional future, it is important for a child to have information about the world of professions already at the stage of primary school age. The situation of constant mental experimentation ("I want to be a cook", "I will be a teacher", "when I grow up I will be a programmer"), associated with various choices, is characteristic of junior schoolchildren and requires readiness to get acquainted with professions, the act

of their choice and reflexive understanding of possible future professional activity.

Within the framework of the conducted empirical research, the level of readiness for the knowledge of professions among junior schoolchildren was determined. At the same time, the assessment was carried out not only of the general level of this readiness, but also of its components: cognitive (the presence of ideas and knowledge about professions and practical activities of a person), motivational (the presence of interest in studying professions), emotional (the presence of a response at the level of pleasure and experiences from knowing a person's professions) and behavioral (the presence of practical experience).

The results of the study indicate a high level of readiness for the knowledge of professions by junior schoolchildren, the main conclusions of the study can be represented by the following data:

- junior schoolchildren have a positive attitude to the development of the world of work and human professions;
- the majority (77 %) of primary school students are ready to study topics related to the choice of a future profession and professional orientation issues;
- the formation of emotional and motivational components of readiness to learn professions prevails in the assessments of younger schoolchildren (over 90 %).

The experience of research work is intended to help teachers of primary general education to organize an entry academic performance rating of junior schoolchildren in order to diagnose the ideas of junior schoolchildren about the professional world in order to qualitatively build a systematic work on early professional orientation within the framework of regular and extracurricular activities.

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#### Primary Paper Section: A

#### Secondary Paper Section: AM, AN

## FORMS AND PRINCIPLES OF ORGANIZING EXTRACURRICULAR ACTIVITIES TO PREPARE FOR THE UNIFIED STATE EXAM IN SOCIAL STUDIES

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**Abstract:** Today, highly relevant is the problem of preparing students for the Unified State Exam in social studies, which is taken by the 11th grade students and is among the most popular exam subjects of choice. As experience shows, it is possible to prepare for the exam only by consistently working on the learning content and regularly performing different exam exercises. However, it is impossible to cover everything in the classroom, because many schools have time constraints, with only 34 hours per year for classroom social studies. For this reason, for reaching this goal of ultimate importance are extracurricular activities. This paper provides methodological recommendations how to organize such activities.

**Keywords:** extracurricular activities, unified state exam, logic workshop, thematic disputes, essays, project activities, problem- and value-based discussion, ethical conversation

### 1 Introduction

The relevance of this research is high as an increasing number of graduates choose to take the Unified State Exam (USE) in social studies, at the same time the common misconception among graduates is that social studies is one of the easiest subjects, because, today having life experience and being in the space of modern media, one can navigate well enough in social problems. Nevertheless, this exam requires comprehensive knowledge in the field of economics, law, philosophy, sociology, and political science. Each of the indicated sciences has its own conceptual and categorial framework and approaches to the evaluation and analysis of phenomena, so students are expected to learn the key terminology and basic concepts of these branches of knowledge.

Various forms and methods of work, sometimes non-standard, different from traditional technologies, can be applied in order to qualitatively prepare high school students for the final certification (Grishkevich & Kosheleva, 2018). The extracurricular activity which forms a compulsory part of the general education program, has powerful potential for reaching these objectives. It is "an educational activity aimed at achieving the planned results of the basic education programs (personal, meta-disciplinary and subject), carried out in the forms other than classroom learning. The purpose of extracurricular activities is to ensure that children achieve the planned results of the basic education program expanding the information, subject, cultural environment where educational activities take place, increasing the flexibility of their organization. The programs of extracurricular activities developed based on the requirements of the Federal State Standard for Education assume mandatory engagement of students in such activities. According to the recommendations of the Ministry of Education and Science, such programs should embrace the individual characteristics of children, their learning needs, as well as the needs of their families and the national and cultural uniqueness of the region.

The Federal State Standard for Basic General Education recommends organizing students' extracurricular activities in five areas: sports and health, spiritual and moral, general intellectual, social, and general cultural development (Grigoriev & Stepanov, 2014). All of them should be organized properly: foster engagement and independence of students, combine

individual and group work, strengthen creative abilities and reasoning skills, shape a worldview (Chekushkina & Rodina, 2015).

Extracurricular activities in social studies can be organized in the form of a club as a structural school unit, focused on the implementation of social studies education and the genesis of students' social experience.

### 2 Literature Review

Many researchers studied the role of extracurricular activities, their basic principles, methods and forms, contributing to a better understanding of their importance and capacity to meet adolescents' needs and interests, facilitate development of their abilities, self-development, social adaptation, acquisition of complex cultural and subject competencies, the formation of value orientations.

E. N. Khudoteplova (2012) believes that extracurricular activities promote comprehensive development of student's personality by implementing through effective organization of the integral educational process the objectives of moral, legal, civil, intellectual, economic, labor, aesthetic and physical education.

I. L. Kamenchuk (2018) considers extracurricular activities as a platform that opens up more opportunities for using dialogic forms of learning compared to the lessons, for example social studies organized as a discussion club that provides an opportunity to critically reflect on relevant social information, going beyond the knowledge obtained during the lessons.

Today many works have been published on the forms and methods of preparation for the USE in social studies, especially the tasks which require a detailed answer. So, S. A. Elmanova (2018) offers her own approach to solving tasks 25 and 26, because, in her opinion, they most vividly reflect the knowledge of social science categories and the ability to apply knowledge in practice concretizing theory with the help of examples.

N. A. Tanshina (2017) in her paper describes the USE tasks specifying which skills a student should have in order to cope with them and analyzes the typical errors. The author pays special attention to the problem of preparation for writing an essay, because this task requires the developed ability to formulate a problem, to present arguments in a logical and consistent way, the experience of finding proper examples and facts to support the standpoint.

### 3 Research Methodological Framework

The purpose of this research is to determine the most effective forms and principles of organizing extracurricular activities as part of preparations for the USE in social studies at secondary school.

The research objectives are as follows:

1. develop recommendations regarding organization of extracurricular activities to prepare for the USE;
2. identify specific forms of work to get students prepared for the USE in social studies, such as consultations, intellectual games, project activities, problem- and value-based discussions, logic workshop and their analysis.

The research employed the range of methods: theoretical (study and analysis of the scientific literature, systematization of effective extracurricular methods that help to strengthen the students' research competence; empirical (pedagogical observation); comparative which helps to comprehend the essence of various forms of students' training in social science. The research was carried out on the basis of schools No. 8 and No. 22 in Saransk as part of the pedagogical internship of

master's students studying at the Philosophy Department in the Mordovian State Pedagogical University named after M. E. Evseev guided by the team of authors from 2018 to 2021.

#### 4 Results and Discussion

According to the Federal Education and Science Supervision Agency (2020), 292 701 students took the USE in social studies in 2020, and their results show the positive dynamics. Thus, the average test score improved by 1.4 points compared to 2019, the share of high scorers who got 81-100 points increased by 2.1%. The number of students who failed to reach the minimum threshold score decreased by 0.5%.

Organizing various forms of extracurricular activities to prepare students for the USE in social studies, in our opinion, the following recommendations should be noted.

Training for children should be conducted at a high level of difficulty. This does not mean that the assignments should include questions that are not part of the school program or that complex abstract scientific terms should be used during study of the content. The principle of "learning at a high level of difficulty" was formulated by L. V. Zankov (1962), who believed that "the overcoming of obstacles sparks the motivation essential for successful performance, but only when such obstacles trigger interest and desire to overcome them". Thus, the teacher's questions should be problematic, should invoke the existing knowledge, but also stimulate the learning of more complex issues and topics.

For the exam to be passed successfully, it is very important to teach children to think. If a student develops the ability to reason, even a question about a little-known fact in the exam will not stump him/ her. The knowledge in possession through reflection will lead the student to a peculiar, unexpected, but logical answer to a new question. Therefore, it is important for a teacher to teach children to understand the causes and consequences of social phenomena, not just to memorize the facts. In connection therewith, it seems reasonable to introduce students to the elements of classical formal logic through an elective course or on the basis of the "Logical Thinking Lab" practical workshop, which will allow them to develop necessary skills for working with concepts and acquire not only theoretical knowledge about correct thinking, but also apply it in practice.

Another, not less important stage is systematic progress checks by topics, sections and modules (in case of targeted preparation for the USE). Such checks may include typical USE tasks, as well as individual theoretical consultations and questions, small colloquia, during which a teacher and students discuss topics of a certain module of social studies. This helps to systematize theoretical material and reveal the gaps. Since students directly participate in a dialogue on a certain topic, in case of revealing their incompetence, facilitating conditions are created for identifying further necessary work to cover the topics which cause problems. When students have their mind set on getting high exam score, this may be a powerful incentive for their further work (Yashkova & Kalimullin, 2015).

To cope with the tasks successfully, one should constantly train to perform exam tasks in the form as required by the USE. The main focus should be on the analysis of questions, topics and problems that cause the greatest difficulties. For identifying those, the teacher should analyze the papers written by students, expose the most difficult tasks and discuss them in class. Then find other tasks similar by subject and type and go through them with children to find the correct solution together.

Students should be advised not to disregard their intuition if they feel they lack knowledge when doing the tests. More often than not, an answer that comes intuitively, based on prior knowledge, may turn out to be the right one. Intuition sometimes prompts the correct answer immediately after reading the task, so a student should only change the answer if he/she has learned the material by heart and is absolutely confident that their original answer was incorrect (Bloom, 1956).

Based on the above recommendations, we suggest using the following organizational forms of extracurricular activities to prepare for the USE.

Organization of individual and group classes after lessons in the form of consultations based on questioning, colloquia. It is at this stage that the gaps in theory are identified and filled in, the training tasks are solved, the difficulties in completing the tasks are eliminated. Students should be divided into groups by their level of knowledge. Everyone can get into a group of the weakest students if they know mostly the problems of the first part, and into a group of the most "advanced" students who can already cope with the tasks of the second part. Students become familiar with the peculiarities of performing various tasks. First of all, these are test tasks of different types (choosing the right answer, choosing several right answers, finding a match, establishing the correct sequence). Teacher should mainly focus on what causes the major difficulties in the consulted group. Usually, these are the tasks of the exam's second part. For this purpose, everything that caused difficulties is analyzed, and then similar exercises are performed to solidify the knowledge and skills that are needed to cope with them (by content and form). To avoid mistakes in the answers, attention is also paid to the importance of reading the question carefully, understanding its wording and providing an accurate answer. It is also necessary to develop the skill of students to control how much time they spend to write down the answers.

Organization of thematic weeks on social studies in the form of a game. The necessary knowledge and skills develop during intellectual games, such as tournaments of connoisseurs "Constitution of the Russian Federation", games "Young Voter", "Young Lawyer", "Civil Society", business game "We are Entrepreneurs". The game as a form of interaction between teacher and student is one of the most effective ways to catalyze the cognitive activity of schoolchildren (Komarova et al., 2018). Game as a pedagogical technology of extracurricular work is multifunctional, brings learning closer to reality, and facilitates interaction, creativity and initiative (Buyanova, 2013). Participation of children in business games is an important part of their socialization, as it gives them the opportunity to get a glimpse into a vein of possibilities offered by certain activity or profession, helps them to get included in the system of social institutions (Butcher, 1993). We rely on the most important functions of the game - higher students' interest in the subject matter studied, unleashing of creative forces which were not activated in the classroom. Introduction of games as a way to support the learning process makes it possible to maintain a sustained interest in the content of the studied course, in the learning itself, to invigorate creativity, to develop and strengthen practical skills, to gain a better understanding of the relationship between theory and practice (Mikhalkina et al., 2018).

Here are examples of games that can be used for the thematic week "I have a right".

Game "Songs about Rights". Songs are played. Students are asked to guess what rights and obligations are implied.

"In every little child" (the right to all-round development);

"What is taught at school" (the right to education);

"I serve Russia" (the obligation to register for military service);

"May there always be sunshine" (the right to life and freedom);

"Antoshka" (the right to work and to rest);

"The Mammoth's Song" (the right to live and be brought up in a family).

The game "The Law Remains the Law in the Fairy Tale!"

Three teams are formed. The teacher reads out the "fairy tale" tasks. The team that solves the most tasks wins.

The tasks:

1. Which branches of law will those examining the Little Red Riding Hood case will refer to, provide explanation? (mother - care and custody, wolf - criminal responsibility, trespassing, deception);
2. Which branch of law unites such fairy tales as Three Little Piglets and Zayushka's Hut? (civil law - the right to housing);
3. What right would the Musicians of Bremen invoke if they lived in our country now? (constitutional - the freedom to move);
4. Which right was violated in the fairy tales "The Pope and His Employee Balda" and "Cinderella"? (labor law, Balda - employee's wages, Cinderella - irregular working hours);
5. What right may Pinocchio have if he lives in our country? (the right to education - constitutional);
6. What right was violated by Signor Tomato, who kicked out Cipolino and his family from their home if they lived in our country? (the civil right - the right to personal dwelling);
7. What right did the wolf in The Wolf and the Seven Little Goats violate? (the right to life - he broke into the house and ate the goats);
8. Under which law the goose-swans will be prosecuted? (criminal law - kidnapping).

Despite the apparent ease, these game tasks require knowledge of different branches of law and clarity of wording (Mikhailenko, 2011).

Project activities intended to consolidate the studied material and to build and develop the skills of goal-setting, planning, selection of adequate activities, material content, etc. (Kuznetsova et al, 2020). Such activities help to develop the key competencies of students. First of all, their unique abilities and interests should be taken into account. When the decision on the project is made by a student, its content is always emotionally colored, has personal value, and therefore the student approaches it proactively and creatively. This will predetermine the objectives and directions of the project implemented by the student (Ioffe, 2013).

The teacher may offer various topics for research projects to guide students in exploring the complex questions of the USE. Here are some examples.

1. "Me and the Society" (based on the topics "Society as a developing system", "Multivariate social development", "Threats of the 21st century (global problems)", "Social stratification and social mobility").
2. "How do we cognize the world?" (based on the topics "Scientific cognition" and "Truth").
3. "Me and the World of Culture" (based on the topics "Culture, Its Types and Forms").
4. "Who Are We?" (based on the topics "The Natural and the Social in a Human" and "Socialization of Personality and Social Norms").
5. "I am a Citizen" (based on the topic "Fundamentals of the Constitutional Law").
6. "Crime and Punishment" (based on the topic "Fundamentals of the Criminal Law").
7. "The President of the Russian Federation" (based on the topic "Fundamentals of the Constitutional Law").
8. "Contract is of Higher Value than Money" (based on the topic "Fundamentals of the Civil Law").
9. "I am a Minor" (based on the topics "Fundamentals of the Civil, Labor and Family Law", "Fundamentals of the Constitutional, Administrative and Criminal Law").

Problem- and value-based discussion is a group form of work through which students acquire social knowledge, an understanding of social reality and an attitude toward the basic values of society. It is the understanding and expression of individual attitude toward the subject that will be necessary for the student to write a final essay during the exam. It will require awareness of personal worldview position, clear expression of own original thoughts, orientation in the situation of diversity of views, the ability to respect other points of view, correlate them

with own point of view (Chekushkina et al., 2016). In the extracurricular activities, in our opinion, this method of teaching should receive special attention.

Preparation for writing an essay is an important part of work which is often not covered sufficiently in the classroom. This is a creative mini research on a specific topic from the perspective of one of the modules of social studies (philosophy, sociology, economics, politics, and law). A student should formulate and justify own point of view on the problem, cite relevant terms and concepts, theoretical viewpoints and conclusions, as well as facts from social or personal experience. One of the most difficult tasks for students is the need to provide convincing arguments in support of their point of view. For strengthening this skill, the problem- and value-based discussions and debates are held, which help students to gain a whole complex of diverse knowledge. Such methods help to develop independent thinking, skills of cooperation and communication (Habermas, 1995).

All presented topics are formulated as aphorisms. The statements should be selected, which cause an ambiguous reaction of a person, a debatable approach to the interpretation of a certain social phenomenon, process or fact. When choosing a topic for the essay, a student should proceed from the most familiar subject, material, their knowledge of the science terminology, should be theoretically prepared in the field of their statement argumentation, should know the logic of concepts, definitions and facts.

A teacher should explain to students how important it is not to forget about the emotions that arise when comprehending the author's aphorism, about their expression in a bright and interesting way. Sometimes even short, simple but capacious sentences have a much greater effect in conveying meaning than long and complex reflections (Super, 1957).

It is highly important that a student learns to understand and articulate the meaning of a quotation correctly, otherwise all the content created by the student will not be assessed positively. Only careful attention to the author's thought predetermines the fate of the essay. When expressing own point of view on the problem, the student should either start a dialogue or a dispute with the author. Regular practical drills and targeted development of these skills help students to overcome the fear of setting the goals and expressing own understanding of the statement (Super, 1985).

A form of problem- and value-based communication such as ethical conversation, for example, may be useful. Through studying various topics from the social studies course, the value-based attitude towards some of them may be formed, focusing on their moral aspects (Frankl, 1969). The teacher may organize students' work with educational information about healthy lifestyles, ecology and terrorism, moral and immoral acts in our life, heroism and crime. In communication with peers, students correlate their own values with generally accepted ones, building their own value scale (Zhuina, 2014).

In ethical conversation, the main subjects of communication are teacher and students. An important aspect of its organization is problematization of the topic of communication. "If a social situation is not constructed as problematic, it may become not so much an object of comprehension as an object of cognition and will be perceived by the student as a learning objective. Then there will be no engagement of comprehension as a universal way of human exploration of this world, in which, along with theoretical knowledge, an essential role is played by direct experience, various forms of practice and forms of aesthetic comprehension" (Grigoriev & Stepanov, 2014). When preparing for this kind of discussion, teacher decides on a social topic that would be relevant, interesting and personally meaningful for students. The following possible topics may be suggested:

1. Interests and needs of young people in the sphere of leisure and culture in Saransk.
2. Productive engagement and employment of young people in Saransk.

3. Social stratification in the city of Saransk.
4. Role of subcultures in the cultural and moral life of Saransk city.
5. Ecology of Saransk and viewpoint of the youth.

It is possible to view a fragment of social reality on the basis of a chosen text and its comprehensive reading. The discussion should be problematized from the very beginning by checking comprehension of the text, which may differ, or it may turn out that the text was not comprehended. In the course of discussion, students compare their opinions about what they have read by agreeing or disagreeing with others. The teacher opens a series of questions, encouraging clarification and deeper understanding of standpoints, expression of personal attitude toward the comprehended text. The problematization should be stimulated until a meaningful conflict arises between standpoints involving a large number of participants with opposed views. Then it becomes possible to support the discussion, the purpose of which for a teacher is to organize students' reflection and independent thinking over the problem (Polkovnikova, 2007).

Logic workshop as a way of developing skills of work with concepts and gaining experience in the right way of thinking. Social studies is a discipline with a developed conceptual framework, which graduates must demonstrate at the exam: here it is the mastery of the conceptual framework that matters, not the ability to find good synonyms. Here it should be noted that we are not talking about those cases when different names are used in social studies to denote this or that object, phenomenon, or process of social reality, for example: "traditional/ patriarchal family," "ideal/ spiritual needs," etc. The workshop will help students to learn how to express the theoretical content of the course with the help of scientific terminology instead of replacing it with ideas or specific examples taken from everyday life.

## 5 Conclusion

Extracurricular activities may be organized in the following forms: consultations with students of 11th grades, which help to develop the skills necessary for successful passing of the Unified State Exam; activities in the form of intellectual games with students of 9th-11th grades as part of the thematic week; project activities developing independence of students; problem- and value-based discussion as a key to good essay writing skills; logic workshop providing experience of the right way of thinking and work with categorical framework.

Thus, when preparing for the USE in social studies through extracurricular activities highly effective is to combine different forms of work. The most important part is to organize the preparatory process as an independent creative search where student plays an active part in partnership with a teacher. Properly organized extracurricular activities bolster not only theoretical but also psychological readiness of students for the exam, relieving them of stress and allowing them to get high exam scores.

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## PERFORMANCE ANALYSIS BASED ON THE USE OF MULTIMEDIA TECHNOLOGIES IN PROFESSIONAL TRAINING OF MUSIC STUDENTS AT THE PEDAGOGICAL UNIVERSITY

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Abstract: The paper summarizes the scientific theoretical foundations and approaches to defining the place and importance of the performance analysis with the use of multimedia technology in the process of work on the musical image as part of musical performance training of students at pedagogical university. The forms and methods of work on a musical image based on the performance analysis with the use of multimedia technology have been differentiated. The authors examine the peculiarities of work on the musical image in the process of music performance training, along with pedagogical methods contributing to the performance analysis with the use of multimedia technologies in the process of work on the musical image.

Keywords: music education, music performance art, performance analysis, music image, multimedia technologies.

### 1 Introduction

Music performing art, as aptly noted by L. N. Stolovich (1985), becomes "a mirror of culture, its self-consciousness because it is the self-consciousness of those who create it" (p. 50-51). Solo and collective music performance plays a significant role in the artistic space of the world of culture, resulting in changes in value orientations, personal worldviews, strengthening certain competencies of music students.

Solo and collective music performance aiming to master the works of both folklore and professional tradition, seeks to contribute to the creation of a new artistic universe. A musical piece performed by a musician, as the value belonging to the musical culture of society, attains life in the mind of listener, who lives it through and evaluates. Therefore, communication between the performer and the listener is a necessary premise for the existence of musical art, and one of the main forms of this communication is the listener's perception of the musical image.

Extrapolation of the mentioned problem into the field of pedagogical education shows the necessity of considering this process of teaching the music students where development of their ability to accurately convey an emotional vivid musical image in the context of integral artistic perception and reflection of a message encoded by composer in their musical score is the key priority. At the same time, the uniqueness and persuasiveness of the performer's interpretation is associated with the creative conveyance of the musical image on the basis of that experience the performer gains related to understanding and living it through based on the performance analysis. For creating a bright performance concept of a musical piece the author's text should be studied in detail to identify the elements of musical language contributing to revealing and conveying the author's intent through bringing the musical image to life. Communicative chain, Composer - Performer - Listener, is inherent in the means of musical expression and the task of the performer, who is a future music teacher, in the process of scientific research into the performance analysis of a musical piece, is to convey the composer's intent to the listener through the musical image.

Performance analysis is not only a thinking process involved with the peculiarities of music perception, analyzing the structure of musical piece, its material matter and means of musical expression, but also interpretation of the emotive

content, search for ways to produce an artistic impact on the listener through the external manifestations of the musician. Given that communication with music and comprehension of any work "is based on its analysis, then all of its directions should be present in the learning activities of students, systematically included in the learning process until they reach their full exhaustion" (Chinyakova, 2014, p. 71-75).

The guiding beacons of modern vocational education set the new requirements to organizing the performance training of a music teacher on the basis of innovative, information, multimedia technology. Multimedia technology opens up new opportunities in performing analysis during the work on the musical image. With the help of interactive integrated capabilities of multimedia technology there comes an opportunity to dive into a thorough analysis of historical aspects related to creation of a musical piece, musicological analysis, and analysis of performance techniques, which will contribute to more effective work on the musical image in the process of creating your own creative concept of the performance interpretation.

### 2 Literature Review

Addressing the problem of organizing the work on the musical image in the process of music performance training on the basis of the performance analysis is not a new aspect in the psychological and pedagogical literature. Theoretical analysis of the literature showed that there exist a large number of publications devoted to the performance analysis of a musical piece and reflecting its structure and stages (Lieberman, 1988; Zhivov, 2017); the pianist's work on a piece of music (Stolovich 1985; Kogan, 2004; Neigauz, 2015; Neigauz, 2017; Borisov et al., 2020; Kobozeva et al., 2020; Savshinsky, 2020); problems of musical analysis in terms of theory and methodology of music education (Zadneprovskaya, 2020; Kolenko, 2013; Chinyakova, 2014); comprehension of musical image as a complex phenomenon (Borisova, 1999), preparation of students for perceiving and interpreting the artistic image (Karnaukhova, 2009), Chinyakova, 2014; Parshina & Karpushina, 2021; Vardanyan et al., 2020) including on the basis of the semantic analysis (Karnaukhova, 2019).

I. Gajim, L. Granetskaya (2018) note that the artistic image creates the impression of beauty through its perfect unity and ultimate meaningfulness of its constituent parts. There is nothing superfluous, random, and mechanically procedural. The authors distinguish three types of images in the artistic creative activity of performer: musical, artistic, performance. For the vivid and emotional performance of a musical piece it is essential that the composer's artistic intent is revealed, ensuring immersion in the musical image for its proper understanding, which is associated with the process of comprehension and perception, and requires a detailed performance analysis.

According to I. F. Orkina (2012), the performance analysis includes exploration of the performance means of expression which shape interpretation of a musical piece. It is based on the principle "See - Hear - Play". The art of interpretation consists in conveying the character of the music, its emotional meaning, and at the same time bring your own vision, understanding and living through the musical play as accurately and convincingly as possible. This makes the interpretation unique and persuasive.

Modern performing art is a reflection of the experience of generations, which is embodied in the modern environment for creative endeavors. In recent years, the issues associated with the use of multimedia technology, the latest developments in the field of digital tools for creativity, has become highly relevant. V. T. Deryuga, S. N. Gorshenina, Y. Evseeva, V. I. Laptun (2020) note that the development of information technology has contributed to the creation of virtual space for an unlimited number of users; the time of information, digital paradigm of education has come. The emergence of artificial intelligence (AI)



facilitated achievement of many learning objectives (Deryuga et al., 2020). Multimedia technology has made it possible to input, process, store, display and transmit over big distances huge amounts of different kinds of information (audio, video, text, graphics) (Parshina, 2008). In publications of recent years, researchers highlight the importance and specific characteristics of media competence (Babushkina & Kalugina, 2020), and focus on the use of multimedia technology in the music education (Parshina, 2008; Parshina, 2015; Parshina & Karpushina, 2020; Parshina & Karpushina, 2021); Kobozeva et al., 2020).

At the same time, the problem of performance analysis using multimedia technology in the process of work on a musical image has not yet received sufficient coverage in scientific literature.

### 3 Research Methodological Framework

The purpose of this research was to reveal the essence and specific aspects of organizing the work on the musical image in the process of music performance training based on the performance analysis with the use of multimedia technology. The research objectives were: 1) to consolidate the scientific foundations and approaches to defining the place and value of the performance analysis with the use of multimedia technology in the process of work on a musical image; 2) to differentiate the forms and methods of work on the musical image based on the performance analysis with the use of multimedia technology.

Comparative-correlative, logical, complex, dialectical, hypothetical-deductive approaches, as well as generalization, systematization, classification of the research results on the basis of theoretical analysis of scientific literature were the methodological guidelines. The research relied on theoretical methods: analysis of scientific literature, systematization and comparison of the works on the problem under scrutiny from the perspective of musicology and pedagogics.

### 4 Results and Discussion

#### 4.1 Scientific foundations and approaches to defining the place and value of the performance analysis with the use of multimedia technologies in the process of work on a musical image

Performance analysis with the use of multimedia technology significantly accelerates the process of obtaining, comprehending and processing the necessary information and acquired performance experience. With the use of multimedia technology it becomes possible to get a generalized idea of music, character and figurative sphere of the musical piece (the main image, the circle of images, the change of moods) in the process of collecting and organizing the necessary information (a large volume of text, images, musical material, sound and video files, etc.) about the composer, the musical language of the era in which he lived; stylistic features, history of the musical piece creation, correspondence of the means of musical expressiveness to the patterns dominant in the particular historical epoch, most expressive performance of the musical piece, get to know various interpretations and performers of the musical piece. All collected information can be used for further work on the musical image.

The initial musical image, the first impression, gets quite firmly imprinted in the mind. The first vivid impressions help to more accurately grasp the author's idea and embody it when working on the musical image. The effect of the first impression will determine the individual interpretation of the piece of music.

Multimedia technology boosts the researching activity, allowing systematizing information about a musical piece and integrating it into a single content. The researching activity will be manifested in the ability to "go beyond" the boundaries; in paying attention to the elements of musical language, in the study of musical score (author's score and editorial notes: music tempo, mood, sounding, dynamics); in identification of the

means of musical expression (key, tone pattern, prevailing harmonics, harmonic pulsation, rhythmic pattern, textural expression, melodic pattern, role of voices in multi-voiced presentation, leading voice, phrasing, culmination and methods to reach it), specific aspects and components of a musical piece; in creating short content references reflecting the emotional coloring of the musical image; in building the scheme of a musical piece specifying the number of bars, tonal plan, harmonics (for pieces of homophonic-harmonic kind) and themes, counterthemes (for polyphonic pieces); in the ability to find the ways of artistic influence on a listener with the help of mimicry, gestures, eyes, posture, fluid movement, appearance, spatial organization, in generalization of data of the performance analysis, contributing to a deeper and more conscious work on the musical image (for example, making a scheme of the musical piece with indication of the number of bars, tone pattern in order to feel the structure and phrasing).

Interactive interface, hypertext structures, interactive properties of multimedia technology contribute to management of the received information about a musical piece. The ability to respond quickly to user actions and interact with multimedia data allows additional playing of audio and video files at the right time, focusing on the necessary details to properly work on the piece, make emotive content analysis, refresh and consolidate impressions, deepen into the figurative sphere of music, into the content of a musical piece, feel elements of musical language and phrasing at any stage in the process of work on a musical image.

Multimedia technology allows you to control the technical and artistic comprehension of the musical material when working on a musical image. Creating video recordings of own performances and comparing them at different stages of work on the musical image help to improve performance.

#### 4.2 Forms and methods of work on a musical image based on the performance analysis with the use of multimedia technology

Work on the musical image based on the performance analysis with the use of multimedia technology implies the use of the following techniques:

- technique of problem-based learning (simulation of problem situations, proactive independent research activity of students, which manifests in the search for and analysis of information about the history of creation of a musical piece and information about its author);
- creation of a portfolio (in the process of performance analysis the information about the composer, about genres, about style is collected);
- project technique (organization of independent research activities of students aimed at solving the problems of the project);
- use of the role and business games (modeling interpretation of a musical piece);
- quest technique (in the process of performance analysis under the guidance of a teacher, students widen their knowledge and improve their performance skills);
- information and communication technology (performance analysis is based on the use of multimedia technology for collecting, processing and storing necessary information about a composer and a musical piece).

The methods of work on the musical image on the basis of performance analysis with the use of multimedia technology include interactive methods, exploratory methods, project-based learning, etc.

One of the leading methods of efficient and intensive training of students in the performance analysis with the use of multimedia technology when working on a musical image is the project-based learning. This method helps to direct students to the search for musicological knowledge about the stylistic features of a musical piece, which play an important role for choosing the performance mimicry, gestures, expressive movements, it also

sparks the research interest in the performance analysis, helps to acquire new knowledge about the composer and the musical language means and culture of the composer's historical epoch. Projects may focus on the genre features of a piece of music, its historical transformation.

For the work on the musical image based on the performance analysis with the use of multimedia technology, interactive teaching methods may be useful. Students interact with the teacher, virtual space, information content, other students in the format of group projects (through ensemble performance and individual/group forms of training), creative sessions, and brainstorming.

Exploratory teaching methods are most appropriate for performance analysis because it begins with exploratory, cognitive activities (collecting and processing information).

## 5 Conclusion

The primary and ultimate goal of work on a musical image consists in comprehension of the author's idea and its reproduction by students at a higher performing level: expressively, meaningfully, emotionally, technically free in accordance with the composer's style and the historical epoch in which he lived. The performance analysis involves comprehension of the musical piece, its emotional perception, examination of its structural composition, the means of musical expression. The performance analysis results in own creative concept of the emotive content, certain methods of artistic impact on the listener (facial expressions, gestures, eyes, posture, expressive movements, appearance, spatial organization). Multimedia technology allows a deeper dive into the performance analysis by collecting, systematizing, summarizing digital information about a musical piece as a single content and saving it for further use and work. Structuring and visualization of multimedia information, as well as interactive capabilities of multimedia technologies strengthen the motivation of performing search and boost cognitive and searching efforts of students.

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## EXPLANATION AS A LEARNING COGNITION METHOD AND THE STAGES OF ITS DEVELOPMENT IN SENIOR STUDENTS

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**Abstract:** Abstract. This paper discusses the problem of stimulating the cognitive activity of senior students at general education schools with the help of the method of explanation. It may be described as a method of comprehending the essence of studied objects through mental operations of analytical-synthetic type. The description and explanation is provided for the concepts without which the indicated method cannot be applied – types, object and procedure of explanation. The pedagogical experiment reflected a step-by-step process of learning of the method of explanation including its structural, functional, genetic and causal types. It resulted in the description and analysis of learning achievements of senior students.

**Keywords:** general education school, senior students, method of explanation, cognition in learning.

### 1 Introduction

In the emerging post-industrial culture, the pedagogical community is increasingly recognizing the importance of each person mastering scientific knowledge in order to apply it effectively in various spheres of life. In connection therewith, the younger generation should prepare themselves for various productive activities already from the school days. According to a fair assertion of domestic and foreign researchers, cognitive activity is recognized as one of the priorities (Asmolov & Volodarskaya, 2017; Crawford & Saul, 2005; Davydov, 2004; Grey, 2000; Robinson, 2004). It fuels the eagerness of schoolchildren to explore the surrounding reality, which is impossible without the intellectual actions of complex nature. As recognized by scientists, there are no doubts that explanation belongs to such kind of actions (Nikiforov & Tarusina, 1987; Cassirer, 2006; Yudin, 1980). It stands to reason that in the sphere of modern general education explanation is recognized as a kind of tool in the hands of schoolchildren when it is used as a method of scientific cognition in the organized cognitive activity. This fully applies to all subjects, including biology. As is known, it studies the objects of animate nature of different levels of organization - cells, tissues, organs, organ systems, organisms, populations and communities. Each of these objects has its certain structure, is characterized by certain interactions between elements and peculiarities of functioning as a result of natural organization. Without penetrating into their essence, in other words, without explanation consisting in identification and interpretation of the most significant features of and connections between the said objects, the full life of man and society is not possible. The explanation is the key to understanding the relationship between all living objects on the planet, the regularities in the impact of environment on them, the need to maintain the ecological balance for the future of mankind. Moreover, it is through explanation that the fundamental processes of the human organism become clear, without which a reasonable living, observance of the rules for preservation of health, prevention of diseases and bad habits and the social well-being would become impossible (Yakunchev et al., 2020; Pokhlebaev, 2010). As it was revealed, a large part of senior students turned out to be insufficiently prepared to use explanation for mastering the learning content in the field of biology. This is manifested in their poor understanding of the meaning of explanation as a scientific method of cognition, find it difficult to correctly name the types of explanation generally accepted in the school, doubt the designation of elements of the

general procedure of explanation for its application in learning situations when studying the subject content (Yakunchev et al., 2018). Therefore, the chosen research topic appears as relevant and requires deeper exploration.

### 2 Literature Review

Many researchers focus on examining explanation as a method of cognition of objects of the surrounding reality by general school students from different perspectives. Several of them are important for our study:

1. philosophical - representation of explanation as a method of scientific cognition outlining the prospects of its use in various spheres, including education;
2. pedagogical - representation of explanation as a method of cognition in learning outlining its possibilities for training, education and mental development of school students;
3. methodical - representation of means for using the method of explanation in subject training of school students for providing them the knowledge and develop their abilities to use it in educational situations and everyday life.

As concerns the first one, the philosophical perspective, we found the highest value in the works of specialists in the field of philosophy, in particular gnoseology, which offer different definitions of explanation as a method of scientific cognition, types of its implementation from the position of explanandum and explanans (Apel, 1986; Hempel, 1965; Ivic, 2008; Nikitin, 1970; Nikiforov & Tarusina, 1987; Nikolaeva, 2019; Rusavin, 2017). They allowed us to express the essence of explanation for its use in the general education. Moreover, based on the mentioned works we provided an overview of the characteristics of structural, functional, genetic and causal explanation as most common types of explanation.

From the second perspective, pedagogical, we concentrated on the studies viewing explanation as a method of cognition in learning (Blegvad, 1977; Perminova, 2006; Ruben, 1991; Seliverstova, 2006; Sohor, 1988). They correctly define it as a way of comprehending the essence of the studied objects and assert the importance of its application in the educational process. Being in agreement with this approach and having performed an analysis of the works of the named authors we have been able to find out the didactic potential of explanation for its use in a pedagogical experiment. It is characterized by penetration into the essence of the studied object, structuring of the knowledge about it, independent use of explanation skills in learning situations and everyday life.

From the third, methodological, perspective, the works dealing with the procedural aspect of using explanation as a method of cognition in learning (Andreeva & Azizova, 2019; Nilson et al., 2013; Pokhlebaev, 2010; Robinson, 2004; Shaporinsky, 1981; Shcherbakov, 2007) were paramount for us. They rightfully point to the introduction of various means into the learning process, among which are visual aids, technical and informational materials, and paper handouts. The procedure based on the psychological approach appears as a generally accepted procedure for teaching schoolchildren. Without denying them, drawing on the analysis of the literature in the indicated field, we identified the elements of the procedure for providing knowledge to senior school students about explanation on a didactic basis. Moreover, based on the works of the named authors, we were able to identify and test in the experiment the learning tasks as the priority means helpful in teaching the explanation.

### 3 Research Methodological Framework

The research purpose consists in substantiating explanation as the method of cognition in learning and elaborating a procedure for developing explanation skills in the senior students of

general education school. For its accomplishment two objectives were identified:

1. clarify the essence of explanation as a method of cognition in learning through the prism of its didactic purpose;
2. identify and test in a pedagogical experiment the stages of explanation skills development in senior school students during the study of biology.

The research employed the methods of two levels. Methods of theoretical level as the way of comprehending, reconsidering and presenting the scientific content: literature analysis, generalization and systematization of data on the essence of explanation with indication of its types, its presentation as an educational method for comprehending objects of the surrounding world, as well as a step-by-step procedure for strengthening the knowledge of senior school students in structural, functional, genetic and causal explanation. Methods of empirical level as the way of obtaining scientific content on the basis of sensual perception of didactic experience and its comprehension – pedagogical observation, questionnaire survey of and interviews with senior school students to find out their ability and readiness to use the method of explanation in learning situations and everyday life. The pedagogical experiment was conducted on the basis of secondary schools Nos. 2, 8, 16, 24 in the city of Saransk of the Republic of Mordovia, the Russian Federation. The control group included 79 tenth-graders from the first two schools, and experimental group was made of 81 tenth-graders from two other schools. The experiment lasted for the academic year 2020-2021. At the end of the experiment students from both groups answered the following questions of the questionnaire to check the results:

1. What is the meaning of explanation as a method of cognition?
2. What kinds of explanations are important for better understanding of the learning content?
3. What is the procedure of explaining the essence of the studied objects?
4. What is the role of explanation in achieving personal learning outcomes?

#### 4 Results and Discussion

The first objective was addressed predominantly through the use of theoretical research methods. It was established that in the theory and practice of general education different methods are recognized as the means of cognition in learning as the way to facilitate orderly and interrelated activities of teacher and students directed at achieving the goals of education - training, character building and mental development. Recently, in domestic and foreign schools, more and more attention is paid to the methods that encourage senior school students to independently and proactively master the studied content for its expression in their individual way, its better memorization and use in different learning situations and everyday life (Berwick, 2015; China's 2020 Education Reform Strategy, 2020; Minchenkov, 2020; Yakunchev et al., 2020; Yakunchev et al., 2018). With reference to the above sources we may assert that such methods include those performing the functions of scientific cognition and incorporated by the teacher in the purposefully organized process of cognitive activity of students of the said category. Among the indicated group of methods a special place undoubtedly takes explanation, which we find highly useful for the sphere of general education as a way of penetrating into the essence of a studied object, revealing the characteristic features of its structure and regularities of its functioning, relationships with other objects of the surrounding reality through the use of mental operations of analytical-synthetic type. As we found out, the most common types of explanation are structural, functional, genetic and causal explanation. The need of using explanation is reinforced by its cognitive potential, which should be presented in a didactic way. Explanation allows senior school students, first, to comprehend the object under study based on its essential features; second, to understand the object under study in light of already existing knowledge; third, to present

knowledge about the object under study in logical and structural way; fourth, to predict the future state of the object under study and its certain aspects; fifth, to create own explanations of the object under study. Therefore, it is fairly reasonable to teach explanation as a way of cognition in learning, because it may serve as one of the important factors in successful acquisition by senior school students of theoretical knowledge and skills for creating new products of educational activity, which is consistent with the imperatives of postindustrial culture.

The second objective was achieved by resorting to a combination of empirical and theoretical research methods. This allowed us to define and test the procedure for developing explanation skills in senior school students during the study of biology, and to present the analytical data on the results obtained in the experimental group as compared to the control group. First we would like to present a step-by-step description of our pedagogical experiment.

*First stage. Organizing learning activities of senior school students with the use of the explanatory concepts to clarify their role in cognition of objects under study.*

Such concepts as "explanation", "types of explanation", "object of explanation", "procedure of explanation" are important for understanding cognition in learning in terms of explanation. As the experiment has shown, senior school students may explain the first concept based on their experience. Therefore, at the introductory lessons the meaning of this concept is only refreshed and expressed by the statement "explanation is a detailed description or clarification of the essence of any object for its better understanding". As it turned out, the majority of senior school students are not able to define the essence of the object of explanation. In these same lessons the object is presented by the teacher as any body or phenomenon of the surrounding world to be cognized and used in the practical activities of people. Information about the object should be made more specific by using such terms as item, phenomenon and process. For their better understanding during the study of biology examples are given and commented on: objects - cell, organism, community, etc., phenomena - metabolism, reproduction, development, etc., processes - transfer of hereditary information, blood circulation, digestion, etc. Next, the attention of senior school students is fixed on the types of explanation. As applied to general education, it is enough to state that according to the nature of the explanans or the type of relationships between objects the genetic, causal, structural and functional types of explanation are distinguished, and according to the nature of the explanandum or the explained object - factual, nomological and theoriological types of explanation are distinguished. In the study of biology the types of explanations of the first group are most often used, so further the focus shifts to them. Senior school students should be acquainted with the procedure of educational explanation. In general, it is presented as the below sequence of actions:

1. identify the object of explanation;
2. determine the type of explanation for the chosen object;
3. construct a verbal or other interpretation of the essence of the chosen object by its most essential features;
4. formulate a conclusion about the object of explanation.

The teacher should always demonstrate how to use this procedure in relation to biological objects.

*Learning outcomes of senior school students:* ability to express concepts of explanatory meaning and their role for the study of any objects, including biological objects; readiness to create a creative product - own versions of frames in the form of logical and semantic schemes on the principle of "top-down reasoning" for structural reflection of knowledge coming from explanation as a method of cognizing the objects of the surrounding world.

*Second stage. Organizing the learning activities of senior school students with the use of teacher's materials and content of the textbook to identify the types of explanation and characteristic features of its structure; organization.*

When studying the content relating to biology, the work should be organized in two directions.

The first direction concerns the review of new material when teacher focuses on examples of different types of explanations. Thus, the best way to express the essence of structural explanation and its features is by using the material about biological systems – a cell, an organ, an organism, a population and a community. The structure of each of them should be shown from the angle of internal organization of elements, as well as from the angle of regular connections between them existing as an orderly organized integral unity. The most efficient way to help students understand the functional explanation is while studying the physiological content. Its consideration provides understanding of the role of a certain element of the object or the object as a whole. A conspicuous example is explanation of the mechanisms of growth and development of organisms, blood formation and circulation, assimilation and dissimilation, biological progress and regress. The most rational way to convey the essence of genetic explanation is while studying evolutionary content. Cognizable objects, in particular species of living creatures, including human sapiens, should be interpreted from the historical perspective, covering their emergence, development, and formation. The meaning of causal explanation may be most optimally demonstrated when studying the ecological content. It provides a possibility to establish and characterize the origination of one phenomenon from the other on the pattern "cause - effect - result". It is important to highlight here that this type of explanation reveals the causality of the ecological objects under study, for which environmental factors and conditions act as causes.

The second direction concerns work with the textbook when students upon teacher's instruction are compelled to analyze texts from the perspective of their structure for explanation purposes. In doing so they should be basing on the knowledge of the essence of explanation as a method of cognition and types of explanation applicable to the objects of animate nature. The senior school students found out that texts can be descriptive, explanatory, and combined, when the text contains both a description and an explanation of objects. The texts of current biology textbooks are predominantly based on causal and structural explanations, but without strict adherence to the procedural actions characteristic of them. Such learning activities allowed senior school students to accumulate experience of deeper cognition of the studied objects and to reveal their essential features.

*Learning outcomes of senior school students:* ability to identify types of explanations by their essential features, including peculiarities of their structural organization; readiness to produce a creative product - own versions of frames in the form of semantic networks indicating connections between objects of cognition. Their names may be as follows: "Structure of knowledge about natural selection on the basis of genetic explanation", "Structure of knowledge about ontogenesis on the basis of functional explanation", "Structure of knowledge about anthropogenic changes of forest community on the basis of causal explanation", "Structure of knowledge about organization of animal cell on the basis of structural explanation". Such cognitive constructs were used by senior school students with respect to other objects under study as well.

*Third stage. Organizing the learning activities of senior school students with the use of algorithmic tasks for cognizing the studied objects from the perspective of explanation.*

The refreshed and obtained knowledge of the essence of explanatory concepts, as well as processing of the subject content in order to identify the types of explanation are the basis for coping with the learning tasks. The experiment showed that they should be seen as an important condition for a deeper cognition of the studied biological objects from the perspective of explanation. Initially, high school students should be taught how to cope with tasks based on algorithms that together may be seen as invariant constructs.

In the case of a structural explanation the algorithm for performing the tasks is as follows:

1. identify and name the biological object to be explained;
2. find out of which elements this biological object consists;
3. identify and briefly describe connections between elements forming part of the biological object, and between the object and the environment;
4. formulate a conclusion about structural organization of the biological object.

An example of a task involving structural explanation of an animal cell might be as follows. In the textbook, the text and the illustration to its present a biological object. Carefully read the text and name the object of study. Based on the text and the illustration, identify components of the object of study. Identify how these components are related to each other in the object. How is the object of study related to the environment? Formulate a conclusion about structural organization of the object. Similar tasks were performed for other biological objects. It is important for senior school students to understand that structural explanation in general, and as applied to the study of biology in particular, is concerned with finding an answer to the question: "How is the object under cognition organized".

In the case of functional explanation, the algorithm for performing the tasks, is as follows:

1. identify and name the biological object to be explained;
2. find out how the biological object "functions";
3. describe in brief the mechanism of "functioning" of the biological object;
4. formulate a conclusion about the "functioning" of the biological object.

An example of a task dealing with inhalation might be as follows.

*Read carefully a text presenting an important phenomenon in the human body. Identify and name the object of explanation. Find out the principle of its functioning. Describe the mechanism of functioning of the object of explanation, consisting of several processes and ensuring vital functions of the human body. Formulate a conclusion about "functioning" of the object. Similar tasks were performed for other physiological phenomena.*

It is important for senior school students to understand that functional explanation in general, and as applied to the study of biology in particular, is concerned with finding an answer to the question: "How does the cognized object function?"

In the case of a genetic explanation, the algorithm for performing the tasks is as follows:

1. identify and name the biological object to be explained;
2. find out how the biological object originated and developed;
3. describe in brief the stages of its development;
4. formulate a conclusion about origination of the biological object.

An example of a task concerning origin of the human's ability to walk upright might be as follows.

*Carefully read a text presenting an important phenomenon in the evolution of homo sapiens and look at the illustrations to it. Identify and name the object of explanation. Find out the historical stages in the development of this object. Formulate a conclusion about origination of a new object. Similar tasks were performed for other evolutionary phenomena.*

It is important for senior school students to understand that genetic explanation in general, and as applied to the study of biology in particular, is concerned with finding an answer to the question: "How the object under cognition did originate, developed and evolved?"

In the case of a causal explanation, the algorithm for performing the tasks is as follows:

1. identify and name the biological object of explanation;
2. find out why and how new biological objects appear;
3. describe how one biological object is emerging from the other one;
4. formulate a conclusion about the causality of a biological object.

An example of a task concerning the impact of trampling on a suburban forest community might be as follows.

*Read materials reflecting changes in a biological object under the impact of one of the anthropogenic factors. Watch also a short video clip. Identify and name the object of explanation. Find out what phenomenon was the "trigger" for the change in the condition of the suburban forest. How else could it be called? What new phenomena appeared in the forest community? Express schematically how one phenomenon originated from the other phenomenon. Formulate a conclusion about dependence of one phenomenon on another in the forest community. Similar tasks were performed for other ecological objects.*

It is important for senior school students to understand that causal explanation in general, and as applied to the study of biology in particular, is concerned with finding an answer to the question: "Why and how do new objects appear?"

*Learning outcomes of senior school students:* ability to name and describe algorithms for performing tasks as the key to coping with them; readiness to perform tasks based on examples and algorithmic sequences of actions for structural, functional, genetic, and causal explanations with regard to biological objects.

*Fourth stage. Organizing the learning activities of senior school students with the use of creative tasks for self-directed cognition of objects under study from the perspective of explanation.*

The knowledge gained in the field of explanation and actions performed using this knowledge in relation to texts from the textbook, performance of tasks based on the algorithms help senior school students to cognize biological objects at a deeper level. As the experiment showed, this is facilitated by tasks of creative nature that require independence and initiative. Here are a few examples.

In terms of structural explanation the materials of anatomical and morphological content may be helpful. It is about anatomy of organs and organ systems of humans and other living creatures.

*First example: Watch a video showing structure of the human heart. Identify its parts, establish connections between them, and indicate their role for maintaining integrity of this organ. Present your own frame of a biological structure named "Structure of the Human Heart". How significant is the knowledge of the heart structure for humans?*

*Second example: The knowledge about structure of the DNA (deoxyribonucleic acid) molecule is important for every intelligent person. Based on material from the school textbook and other sources in your workbooks, express your own schematic drawing representing structure of the DNA molecule. Indicate and explain connections between its elements. Why is it important for humans to know about structure of the DNA molecule?*

For a functional explanation, the materials about the vital activity of the human body may be used. The experiment revealed that senior school students show high interest in practical tasks.

*First example: The neurologist doctor "checks" the knee reflex in most patients with a special hammer. Write down its elements in the correct order. Explain the mechanism of the knee reflex as a physiological phenomenon and make a schematic drawing with*

*explanations. For which purpose the knee reflex is checked in medical practice?*

*Second example: During the plane takeoff and landing, passengers get an unpleasant feeling of their ears popping. Explain the physiological meaning of this phenomenon and make your own explanatory notes. Why are passengers offered lollipops at these moments?*

In terms of genetic explanation, the materials of historical-biological and evolutionary content may be helpful.

*First example: Science has several scenarios of the origin of life on our planet. Give your own explanation of this phenomenon from the standpoint of the hypothesis of biochemical evolution; make notes in your workbook. Why does a person need knowledge about the origin of life on Earth?*

*Second example: Many scientists were and still are interested in the question of how the first living cell appeared. There are still many uncertainties regarding this subject, but the general information about the origins of life is already clear. By referring to the basic facts, provide your own version of the story how the living cell emerged from a protocell through intermediate formations to cells of present-day organisms as a convincing foundation for explaining this process.*

In terms of the causal explanation, the materials on the ecology of the biosphere may be used.

*The biosphere in science is presented as a global ecological system having certain organizational structure and performing certain functions. It is commonly known that it has changed markedly in recent decades under the impact of human activities. Based on your understanding of explanation as a method of cognition and any sources that reflect global biosphere processes, compose a frame which structure reflects the knowledge organized based on the construct "why and how the biosphere has changed". Express briefly the essence of your construct. What is the role of the causal explanation of negative biospheric change for modern society?*

*Learning outcomes of senior school students:* ability to recognize creative tasks, understand their structure and content; readiness to perform creative tasks showing independence and cognitive initiative in relation to explanation. We would like to present the results obtained in the pedagogical experiment. Senior school students of the general education school who took part in the diagnostic procedures, compared to the control group, demonstrated better results as concerns the aspects of interest. The majority of respondents from the experimental group consisting of 81 students (61 respondents, 76%) stated confidently when filling out the questionnaire and in private conversation that the implemented procedure of training involving the use of explanatory knowledge, helped them to master the general education techniques of structural, functional, genetic, and causal explanations. While in the control group of 79 students only 5 respondents (6%) gave a close to correct answer. The mastery of the general learning techniques allowed the participants in the experimental group to present the learning content in a compact form, and, most importantly, in a structured way and in a logical sequence. At the same time, 72% or 58 respondents in the experimental group against 9 respondents (11%) in the control group mentioned the use of mastered techniques in the study of other school subjects as well. It is noteworthy that 68% or 55 senior school students after the training experiment expressed an opinion that explanation is a kind of tool for cognition of various objects of the surrounding reality which has a meta-disciplinary purpose. Unfortunately, participants in the control group could not formulate their answer correctly. Almost 70% or 56 respondents in the experimental group noted a deeper penetration into the essence of the content studied with the help of explanation in general and its particular types such as structural, functional, genetic, and causal explanation. They stated that it helps to successfully cope with the reproductive and especially creative tasks which ask to provide own versions of the products of learning activity.

Respondents in the control group have difficulties in expressing adequate opinions regarding this aspect. The findings of personal meaning are rather interesting. Most of the respondents (75% or 60 students) in the experimental group noted that they now build their speech more rationally and academically, and that they learnt to make schematic representations of objects and phenomena under study. Respondents in the control group found it difficult to provide an answer regarding this aspect.

## 5 Conclusion

Explanation as a method of cognition in learning should be recognized as one of the ways to encourage senior school students to explore the essence of studied objects of the surrounding reality. Here it is important for both teacher and students to pay attention to the didactic principles of its use in the educational process. They need to be tied to the definitions of concepts characterizing explanation - "types of explanation", "object of explanation", "actions of explanation", forming the part of explanation as a method of cognition in learning, as well as procedures for teaching high school students how to use this method. As the pedagogical experiment has shown, these are the key principles:

1. work with the concepts characterizing explanation to determine their role in cognition;
2. work with teacher's materials and textbook to identify types of explanation;
3. work with algorithmic tasks to cognize objects in ordinary situations;
4. work with creative tasks for self-directed cognition of objects in extraordinary situations.

The tested procedure has proven to be appropriate for accomplishing educational objectives of meta-subject, subject and personal character. It results in learning achievements of senior students: ability to express knowledge about explanation as a method of cognition in learning, its possibilities for the study of the subject material; readiness to independently carry out procedures of structural, functional, genetic and causal explanation. Therefore, the procedure of using explanation as a method of cognition in learning is rather efficient for improving the quality of subject training of high school students in general education school.

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## Primary Paper Section: A

## Secondary Paper Section: AM, AN

## DIAGNOSTIC TASKS AS THE MEANS OF ASSESSING META-SUBJECT ACHIEVEMENTS OF STUDENTS

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**Abstract:** This paper is dealing with the problem of assessing the meta-subject learning outcomes of schoolchildren. They were achieved by means of meta-subjects "Method" and "Knowledge" at the formative stage of the pedagogical experiment during the study of biology by high school students. The expected learning outcome of the first meta-subject was the students' readiness to apply empirical and theoretical methods for exploring the objects of animate nature, and of the second meta-subject - their readiness to apply models and forms of building the biological knowledge using the conceptual constructs. Special tasks were used as the objective means of outcomes assessment, which were tested within pedagogical experiment. The results testify a rather high level of meta-subject achievements of high school students.

**Keywords:** high school students, meta-subject learning, assessment of results, diagnostic tasks.

### 1 Introduction

Many countries recognize the achievement of high quality as the priority result of modern general education. The researchers connect it with the remarkable and gaining momentum global trends of education development in general (Wolfson, 2013; Machekhina, 2019; Pigozzi, 2004). In this regard, all educators, especially subject teachers, have faced pressing challenges the best way to address which is through collaboration and joint efforts with students. Due to the circumstances, at first in general education schools in developed countries, and later in schools in transition and developing countries, the educational process has become to be directed by the standards orienting the younger generation to receive a high-quality education (Chatin, 2016; Education in China: a Snapshot, 2016; Future of Education Initiative, 2020; Tarasova & Kulakov, 2015; Svetlov, 2020; Yakunchev et al., 2018). It is associated not only with purely subject achievements, but also with meta-subject achievements, because meta-subjects serve as a basis for pedagogics of mental and action approach, which has recently been gaining increasing relevance. It should be understood as a combination of intellectual, practical and communicative actions included in the context of specially organized efforts of schoolchildren (Gromyko, 2000). The key point is that meta-subjects must be designed in accordance with the underlying patterns of thinking represented by different forms of thinking (concepts, opinions, conclusions), types of thinking (objective-active, figurative-imaginative, abstract), and thinking operations (analysis, generalization, comparison, systematization, classification). Therefore, in the pedagogics of mental and action approach various meta-subjects are being developed, the most popular of which are "Object", "Knowledge", "Method", "Sign", "Value", "Problem", "Culture" (Gromyko, 2001; Papaleontiou-Louca, 2003; Shrou et al., 2006). Unfortunately, with regard to school biology their educational potential has remained untapped until recently, due to which high school students experience difficulties in applying common techniques, methods, schemes, thinking patterns for mastering the learning content and rationally applying it for solving tasks. The results of our own publications, as well as data from other researchers (Yakunchev et al., 2020; Yakunchev & Semenova, 2021; Carnoy & Khavenson, 2016) provide evidence for this. Consequently, there exists an objective need to explore the topic we have chosen for this research.

### 2 Literature Review

For the objective presentation of information in this paper, it was important to rely on the literary sources. We found highly relevant the studies by educators/researchers from different countries, which we divided in three groups.

The studies of the first group focusing on the essence of meta-subject and the importance of its use in the training of students were analyzed from two aspects. Most interesting as concerns the first aspect were the publications by (Gromyko, 2011; Khutorskoy, 2012a, 2012b, 2012c, 2012d) and as concerns the second aspect most relevant were the works of (Khutorskoy, 2012a, 2012b, 2012c, 2012d; Cross & Paris, 1988; Kaberman & Dori, 2009). Taken in totality, they helped to express our own idea of the meaning of meta-subject as one of the pillars of pedagogics of mental and action approach with a special emphasis on its cognitive component. Thus, meta-subject training opens up great opportunities for students to master intellectual and communicative actions of universal purpose. Therefore, the indicated direction has been developed by us on the basis of search for and use in the training of high school students of the effective ways of action, in particular, on the basis of analysis, generalization, comparison, systematization, classification, induction, deduction, monologue, dialogue. They can be applied both to a specific school subject and all other subjects to ensure a desired learning outcome.

The second group of studies dealing with the achieving of meta-subject results by students was also analyzed from two aspects. In terms of the theoretical aspect, most important were the studies that helped to define the categories of meta-subject results - readiness to perform the actions of universal purpose, expression and characteristics of components of the technique to foster it in schoolchildren, designing of an integral procedure for meta-subject training during the study of the subject content (Khutorskoy, 2012a, 2012b, 2012c, 2012d). In terms of the applied aspect, most appealing were the works pointing to the effective achievement of meta-subject results through intellectual and communicative actions (Jordan, 2011; Branigan & Donaldson, 2019). However, these studies, unfortunately, did not provide the optimal combination of the actions referred to above for effective meta-subject training of high school students based on the subject content.

The studies classified in the third group describing the diagnostic tools were analyzed from three aspects. The first aspect concerned finding out the essence of the phenomenon of diagnostics as a combination of control and evaluation actions aimed at finding out the level of students' training and improving the educational process (Ingekamp, 1991; Bitinas & Kataeva, 1993; Sycheva, 2008). The second aspect concerned finding out the specific features of relevant diagnostic tasks, which allowed us to determine their invariant basis and develop original tasks from the perspective of international practice (Ambartsumova & Dyukova, 2017; Flavell, 1979). The third aspect concerned finding out the features of quantitative measurement of the achieved results in meta-subject training of high school students (Carnoy & Khavenson, 2016; Gam & Buzina, 2012).

### 3 Research Methodological Framework

The purpose of this research is to present original diagnostic tasks for targeted assessment of the training results of high school students achieved with the help of meta-subjects "Method" and "Knowledge". This purpose broke down into several objectives:

1. develop and test the procedure for fostering the readiness of high school students to use certain methods for studying the objects of cognition and the ways of objective reflection of knowledge through its conceptual constructs based on the use of the biology subject content;



2. develop and test diagnostic tasks for assessing the meta-subject achievements from the aspects of the essence of method as a way to cognize the diversity of animate nature objects and express the idea about them using conceptual constructs in the nonstandard situations.

For performing the study and reflecting its results in the form of a paper certain categories of methods were used. The methods of theoretical purpose included the analysis of literary sources, modeling of the step-by-step process of meta-subject training of students, systematization and consolidation of the obtained results of theoretical and practical nature. The empirical methods included formative and diagnostic pedagogical experiments, pedagogical observation, mathematical calculations for diagnosing the meta-subject achievements of high school students based on the biology subject content in the context of such meta-subjects as "Method" and "Knowledge". The pedagogical experiment was organized and conducted in the 2019-2020 academic year on the basis of general education schools Nos. 17, 39 in Saransk and Nos. 4, 7 in Ruzaevka in the Republic of Mordovia, the Russian Federation. The research involved 102 tenth-graders, who in the end of the pedagogical experiment completed diagnostic tasks which helped to assess their meta-subject results.

#### 4 Results and Discussion

In the global practice of general education, including the practice of Russian schools, meta-subjects may be included in the curriculum as a separate line. But, at the same time, in order to study the expected outcomes of meta-subjects it is possible to use the potential of traditional subjects in determining the place of introduction, interpretation of the essence of knowledge and general ways of knowledge - universal actions (China's 2020 Education Reform Strategy, 2020; Asmolov, 2014). The second direction is being developed and tested by us, among others, when teaching a systematic course "Biology" for students of the 10th grade. The experiment with high school students was carried out using the materials of two meta-subjects "Method" and "Knowledge". This choice was not accidental, they help not only to convey the knowledge of general ways of thinking activity when using the above-mentioned basic forms of thinking, but also to strengthen the skills of communication in the form of monologue and dialogue, and the skills of rational presentation of the subject content for its memorization, actualization and use in various situations. This choice was also supported by the fact that today knowledge from the field of natural sciences, and biology is forming their integral part, in the global practice of general education is obtained through the intellectual and practical ways of action based on the use of the most relevant information (Saribas & Bayram, 2016; Tarasova & Kulakov, 2015).

Let us provide the general overview of our pedagogical experiment, which included two stages, formative and diagnostic. In view of the purpose of this publication, and in particular, presenting the tasks as the means of assessing meta-subject results of students achieved in subject training, we will provide a brief description of the formative stage of the experiment, while the diagnostic stage will be described in more detail.

The formative stage of the experiment was carried out in two directions, the first of which concerned teaching high school students how to use the tools of the "Method" meta-subject, and the second concerned the tools of the "Knowledge" meta-subject for studying the objects of animate nature.

*The meta-subject "Method"* was aimed to foster the readiness of high school students to use different methods for studying the objects of cognition. Therefore, at the beginning of the school year, students' attention was focused on the essence of the scientific method as a combination of different methods and operations used to build any scientific knowledge, including biological knowledge. Further it was underscored that the methods may differ depending on the type of cognition. In joint work with the teacher, high school students identified and wrote

down in their workbooks the attributes of empirical and theoretical methods, as well as their role in obtaining the objective knowledge. Since students had difficulty with understanding the meaning of the term "object", some work was done with them to fix that. In exploratory conversation it was revealed that this term indicates a part of the surrounding world nominally chosen for cognition, including the world of animate nature, which has relative independence, integrity, presence of components and their functional interrelation. It was noted that the object of cognition is described with the help of other terms, namely "subject", "phenomenon" and "process". Groups of objects from school biology were named and explained: living systems of different levels of organization; processes and phenomena in functioning of living systems; systematic taxa; theoretical foundations of biology as a science; methods of cognition in biology. Examples of objects, phenomena and processes were given in relation to each of the designated groups. The variety of methods and objects was also presented implicitly as we moved from one topic to another. In the course of the experiment in the context of the discussed meta-subject high school students tried general methods useful for cognition of the animate nature. These were as follows:

1. identification or recognition of a certain method of cognition of an object among others;
2. finding correlation between the used method and the chosen object of cognition;
3. determination of a combination of the methods of cognition for optimal study of a specific object;
4. description of a structure of the method of cognition for its correct application in terms of procedure. In the process of training, the essence of each of the methods and their structure were explained to high school students, conditions were created for their use in educational situations in accordance with the general procedure of cognition.

*The result of the experiment:* readiness of high school students to use knowledge about scientific methods, empirical and theoretical, important for the study of objects of animate nature, as well as learning methods for the study of objects of cognition within the scope of school biology.

*The meta-subject "Knowledge"* was aimed to foster the readiness of high school students to use the methods of objective reflection of knowledge through its conceptual constructs. At introductory lessons, they achieved a better understanding of the essence of scientific knowledge as a result of objective cognition of the living, existing in the form of systems of ideal images. It was emphasized that out of the multitude of ways to express knowledge the concepts have a particular significance. This is not accidental, because the concepts as one of the forms of human thinking reflect general and essential features of any object of cognition. Therefore, by learning the concepts and then using them the thinking activity is prompted, giving an impetus to the search for truth to penetrate into their essence. Taking into account the age of students and the subject content, different groups of concepts - empirical, theoretical, special and universal - were explained to students. For example, when working with empirical concepts the best way is to refer to the method of analysis and comparison in combination with inductive basis of the content presentation. When working with theoretical concepts, generalization and systematization methods will be the most appropriate, but with presentation of the corresponding content on a deductive basis. At the formative stage of the experiment throughout the school year we successfully tested the technique of purposeful organization of work of high school students with different concepts from school biology. When developing it, we relied on the tenets of J. Bruner's theory (2015) of the concept formation in the part of the strategy of conservative concentration. The technique may be presented as a sequence of the below actions:

1. specifying the object in relation to which the term is used as a word or phrase indicating a name of the concept to be defined;

2. identifying and naming all discovered attributes of the selected object;
3. picking and specifying the most essential attributes of the selected object;
4. expressing a preliminary idea reflecting generalized essence of the selected object based on its essential attributes;
5. formulating a definition of the concept in its finalized form;
6. constructing a structure of the concept and revealing its possible connections with other concepts;
7. determining the scientific and practical sense of the formulated concept.

The experiment showed that high school students cope with the first five actions without much difficulty, and it is important to teach them to cope with the sixth and seventh actions using the categories of meta-subject sense. In this connection, we carried out the targeted work to refine students' knowledge of analysis, generalization, systematization, comparison, deduction and induction. Students were guided to the conclusion that without this knowledge, it is not possible to build biological knowledge. Further together with them the models were identified for building conceptual constructs, in particular the graphical, frame, and semantic models. The first of them helped to reflect essence of the concept through its volume and content with the use of such forms as structural logical chart, cognitive map, cluster picture, denotative graph; the second one, a frame model, helped to represent knowledge by organizing it around the selected concept with the use of such forms as a flow chart, a logical semantic matrix, a reference node diagram; the third one, a semantic model, opened access to productive work with concepts through semantic interpretation of the meaning of words and word combinations within the studied concept with the use of such forms as semantic, structural, causal, functional networks; unary and binary expressions. It should be noted that in the process of training, the essence of each of the models and forms was explained, their structures were described, and conditions for their use in educational situations were created.

*The result of the experiment:* readiness of high school students to use the obtained knowledge of meta-subjects - about the concept, structure of the concept, technique of mastering concepts, models and forms of creating the concepts for objective reflection of the studied objects, expression of information about them on a scientific basis using conceptual constructs.

*The diagnostic stage of the experiment* took place at the end of the school year and was intended to check the outcomes of students' training in the context of meta-subjects "Method" and "Knowledge". It was important for us to find out the readiness of high school students to independently apply the acquired knowledge and methods of action in nonstandard learning situations. For this purpose, it was necessary to pick a diagnostic tool in order to get objective data from students who took part in the formative experiment. As proven by practice, specially developed tasks which involve intellectual, practical and communicative actions as key elements of pedagogics of mental and action approach may be used as such a tool. Therefore, we have developed an invariant structure of such tasks, taking into account the requirements of PISA, which are in many respects convergent with the meta-disciplinary foundations of training at school (PISA – 2018, 2019). The elements of the named structure are as follows:

1. stimulus as a factor of immersion in the essence of a task and its motivated completion;
2. formulation of a task as an assignment with certain requirements to the activities to be taken;
3. expression of a generalized conclusion summarizing the activities performed to cope with the task.

It should be noted that tasks were multi-component in order to check the knowledge, ways of action and communication skills. A task was considered completed if a student scored at least one point for any part of it. No points were given for incorrect (erroneous) answers. The partially completed tasks also received no points. A student received a "satisfactory" mark (3) for one

point, a "good" mark (4) for two points, and an "excellent" mark (5) for three points. It was a five-mark grading system. The results of the tasks were entered in the table with the names of students, total scores received for the tasks and the arithmetic mean.

*Tasks for the meta-subject "Method"* in general were supposed to check and assess the knowledge of the essence of method as a way to cognize a variety of objects, determine its place and purpose in relation to objects (objects, phenomena and processes) of surrounding reality, including the objects of cognition in the field of biology.

*Task 1.* It is known that everybody should have a clear idea of the real world, its objects, their inner arrangement, functioning, development and significance for the purposeful organization of own life and life of society as a whole. Recall information about the fundamentals for selecting the objects of cognition. *This element of the task acts as a stimulus.*

Look carefully at the pictures below which depict "certain parts" of the surrounding reality and provide your brief comments to them. Name all these parts by one common term, and then divide them into groups ascribing each group its own heading. Think and answer the question: "What did you see in these pictures, objects in the form of processes or objects in the form of phenomena? Using the list of cognitive methods, choose most appropriate methods to study the objects of the animate nature and social world. *This element of the task is an encouragement for thinking activity in the intellectual (analysis, synthesis, systematization) and communicative (monologue) aspects.*

Formulate a written conclusion concerning reasoning for the choice of appropriate methods to study the objects of the surrounding world. *This element of the task is concerned with summarizing the results of performed actions.*

*Results:* the majority of students received three points. Major difficulties were caused by classification of objects in the form of things and objects in the form of phenomena.

*Task 2.* It is known that every scientist-biologist in the study of animate nature distinguishes between objects and subjects. This also applies to such branch of biology as cytology, or otherwise the science of cells. *This element of the task acts as a stimulus.*

Carefully look through the suggested list of terms and select those which can be a subject of the research focusing on the plant cell: acrosome, collenchyma, central vacuole, nucleus, petiole, chloroplast, root, cell wall, resin duct, division spindle, water photolysis, interconversion of leucoplasts and chloroplasts. Think and by using the analytical framework of reasoning express with the help of a logic diagram the potential subjects of a research on the plant cell structure. Suggest your own diagram. The diagram should reflect at least three judgments. Provide brief written comments to explain the essence of your diagram. *This element of the task is an encouragement for thinking activity in the intellectual (analysis, synthesis, deduction, systematization) and communicative (monologue) aspects.*

Formulate a written conclusion concerning importance of identifying the research subjects. *This element of the task is concerned with summarizing the results of performed actions.*

*Results:* the majority of students received three points. The most difficult part was to divide terms into structural components and processes.

*Task 3* Every person builds their scientific reasoning and expresses own thoughts based on certain fundamental principles. In applying these principles highly useful are certain procedures, for example, induction and deduction. *This element of the task acts as a stimulus.*

Based on the procedure of inductive inference, offer your own version of a text table with different columns. There should be at least three columns. Fill in the columns of the table. For doing this, use the following topics: observation of the population of

the May lily, experiment to prove G. Mendel's first law, analysis of literature data on the significance of mutations in nature, explanation of the results of the effect of organic fertilizers on potato yields, calculation of the results of the experiment on growing bacterial colonies, graphic depiction on the dynamics in the population of a rare plant species. *This element of the task is an encouragement for thinking activity in the intellectual (analysis, generalization, classification) and communicative (monologue) aspects.*

Formulate a conclusion concerning reasoning for the choice of names to the table columns; write it down in your workbooks. *This element of the task is concerned with summarizing the results of performed actions.*

*Results:* the majority of students received two points. Most difficulties were associated with the search for the classification basis.

*Tasks for the meta-subject "Knowledge"* in general involved checking and assessing understandings of what knowledge is, why concepts are used as its descriptors, which models and forms they can be expressed through, and what their role for people is. Below we would like to provide some sample tasks which we used as the assessment means during the experiment.

*Task 1.* Knowledge as a result of cognition of the reality is of great importance in various fields of human activity. For better understanding of the essence of various objects, the best way to present knowledge is in the form of concepts. *This element of the task acts as a stimulus.*

For several lessons you have studied one of the central phenomena of the biological science and school subject - the types of reproduction of multicellular organisms. A deductive framework is helpful in expressing the scope and content of any concepts, and a structural logical chart (an ideal model) helps to generalize and systematize them. Make such a chart for the concept "types of reproduction". Choose of the types of plant reproduction and provide its description. *This element of the task is an encouragement for thinking activity in the intellectual (analysis, modelling, deduction, induction) and communicative (monologue) aspects.*

Formulate a conclusion reflecting your own view of the concept "types of reproduction" based on the created structural-logical chart; write it down in your workbooks. *This element of the task is concerned with summarizing the results of performed actions.*

*Results:* the majority of students received two points. The difficulties were associated with filling certain blocks of the structural logical chart with the content.

*Task 2.* As is known, knowledge acquired by a person may be expressed in various forms. It is selected in a way as to ensure that it is convenient to perceive the essence of the object reflected by means of concepts. One of such forms may be a reference node diagram. *This element of the task acts as a stimulus.*

Refresh your knowledge of the reference node diagram and based on it, present a generalized picture of the learning content organized around the concept "ecosystem" ensuring that it is structurally complete. Reflect the obtained result as your own creative product in your workbook. Discuss with your desk mate the composition of the mixed forest and lake ecosystems. Each of you should determine which component is more important for the ecosystem and write down in your workbook your conclusion. Give examples of woody plant species in an urban park ecosystem. *This element of the task is an encouragement for thinking activity in the intellectual (analysis, systematization, generalization) and communicative (dialogue) aspects.*

Formulate a conclusion concerning the importance of expressing concepts with the help of a reference node diagram as a reflection of the frame. *This element of the task is concerned with summarizing the results of performed actions.*

*Results:* the majority of students received two points. The most difficult part was associated with listing the plant species and the ecosystem components.

*Task 3* Many scientists rightly assert that students work effectively by interpreting the meaning of words and word combinations within the studied concepts. *This element of the task acts as a stimulus.*

Revise the fundamental principles of work with the concepts and create a semantic cause-and-effect network on the topic "Changes in the Biocenosis of the Local Pond Caused by Human Economic Activities". Specify the three major, in your opinion, negative human impacts on the indicated ecosystem. Indicate three possible sources of pond pollution with iron compounds. *This element of the task is an encouragement for thinking activity in the intellectual (analysis, systematization, description) and communicative (monologue) aspects.*

Formulate a conclusion regarding the importance of expressing concepts using a semantic network for meaningful interpretation of the essence of the objects under study. *This element of the task is concerned with summarizing the results of performed actions.*

*Results:* the majority of students received two points. The difficulties were associated with indicating the possible sources of pond pollution with the iron compounds.

## 5 Conclusion

Training of high school students on the basis of meta-subjects "Method" and "Knowledge" is seen as a promising direction of general education training. This has been proven by the evidence collected in the conducted pedagogical experiment with regard to the meta-subject achievements of high school students, which have been assessed with the help of specially developed diagnostic tasks. Certain circumstances are important for successful implementation of meta-disciplinary training at the formative stage. The dedicated training procedures should be used to foster:

1. the readiness to use the obtained knowledge from the meta-subject domain - about concept, structure of concept, technique for learning concepts, models and forms of concept-building for objective reflection of studied objects, presentation of information about them on scientific basis through the use of conceptual constructs;
2. the readiness to use knowledge about scientific methods, both empirical and theoretical, essential for studying objects of animate nature, as well as methods for studying objects of cognition from the school biology.

It is important to have diagnostic tools at hand in the form of special tasks appropriate for the corresponding meta-subjects, the tasks which in the educational practices, globally and in Russia, have not been sufficiently developed as yet. As for the meta-subject "Method", the tasks should be aimed at checking and assessing knowledge about the essence of a method as a way of cognition of diverse objects, determining its place and purpose in relation to other objects (things, phenomena and processes) of surrounding reality, including the objects of cognition in biology, and as for the meta-subject "Knowledge", the aim of diagnostic tasks should be to check and assess the students' idea about knowledge as such, concepts as its descriptors, models and forms of concept-building, meaning of knowledge for a person. The diagnostic tasks proposed by the authors helped to prove the positive impact of experimental training of high school students in biology on their meta-subject learning outcomes. Out of the maximum possible 18 points, most students got 14 points for the performed tasks, which indicates the efficiency of the proposed methodological and technological support of the educational process.

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**Primary Paper Section: A****Secondary Paper Section: AM, AN**

## SOCIAL EDUCATION OF CHILDREN AND ADOLESCENTS IN THE INSTITUTIONS OF ADDITIONAL EDUCATION

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Abstract: The relevance of the study is due to the importance of the implementation of social education of children and adolescents, during which they are involved in active work for the benefit of people and society, the development of models and norms of social behavior, the formation of positive value orientations. Additional education plays a special role in the implementation of social education of children and adolescents, which creates optimal conditions for the organization of socially active and socially significant work of students. In this regard, this article is aimed at identifying the theoretical and methodological foundations of social education of children and adolescents within additional education. The methodological guidelines were complex, dialectical, comparative, logical, hypothetical-deductive approaches.

Keywords: social education, children, adolescents, socially active work, additional education.

### 1 Introduction

In modern society, socially active and responsible citizens who are able to participate in positive and socially significant affairs are in demand. A special place in the process of formation and making up of a socially active personality is played by the social education of children and adolescents, during which they are involved in active work for the benefit of people and society, the development of models and norms of social behavior, the formation of positive value orientations. Purposeful social education stimulates positive socialization of the younger generation, which is necessary for the successful integration of an individual into society, for early professional orientation (Antonova et al., 2019).

A special role in the organization of social education should be played by additional education of children – "a type of education that is aimed at comprehensively satisfying the educational needs of a person in intellectual, spiritual, moral, physical and (or) professional improvement and is not accompanied by an increase in the level of education" (Federal Law "On Education in the Russian Federation", 2020). In the Concept of the development of additional education for children (2020), it is noted that "additional education becomes the leading channel of socialization, ensuring the adaptation of the individual to changes".

Additional education, as V. P. Golovanov (2017) notes, should be aimed at organizing the social life and real life activities of children and adolescents, social education, social protection of childhood. The educational potential of additional education has a socio-humanitarian orientation, since the teacher helps the child to make the right moral, social, professional choice, therefore, in additional education not the solution of the problem for the child is important, but pedagogical support of his choice. Therefore, the organization of social education of children and adolescents in institutions of additional education is the most urgent problem of modern pedagogical science.

### 2 Literature Review

The problem of social education of children and adolescents is becoming universally relevant today. According to A. V. Mudrik (2009, p. 51), "social education" is understood as a type of education aimed at ensuring the socialization of a person by

including him in the system of socio-cultural relations through the assimilation and reproduction of culture, and at the same time there is a development, self-development, "self-change" of a person in this process.

In the course of social education, socialization is actively carried out, which, according to F. G. Giddings (1897), is "... the development of the social nature or character of the individual, the preparation of human material for social life" (p. 16). In the scientific literature, there are two approaches that interpret the role of the person himself in the process of socialization in different ways. The first approach is "subject – object", in which a person takes a passive position in the process of socialization, and socialization itself is considered as a process of adaptation to society (Durkheim, 1982). The second approach is called "subject – subject". Ch. Cooley (1922) believed that the individual "I" is acquired in communications, in interpersonal communication within the family, peer group, neighborhood group. The formation of a person's "I" is the process of summing up the "mirror selves". According to J. Mead (1934), a person who interacts with other people, as if he takes their place, evaluates himself from their point of view, and then acts in accordance with the presented assessments of the "generalized other". According to N. Smelzer (1988), socialization is aimed at human interaction based on various social roles and the preservation of society based on the assimilation of its members' beliefs and patterns of behavior.

The focus on social education in institutions of additional education is considered in the works of Berezina V. A. (1998), Golovanov V. P. (2017), B. V. Kupriyanov (2009), etc. Social education of students of institutions of additional education has its own characteristics, in particular, it provides assistance to the student in adapting to society through various forms of communication, cognition, subject-practical activities, ways of life; providing all students with additional opportunities for early professional self-determination, providing students with the opportunity to carry out social tests (Kupriyanov, 2009). At the same time, it should be borne in mind that, as the survey results show, the most popular areas of additional education for schoolchildren are sports, artistic, aesthetic and technical areas, and this fact determines the features of social education of students (Zolotareva et al., 2016).

In institutions of additional education, active social education of students, their social development is organized. Entering the socio-educational environment, the system of social ties contributes to the assimilation of the necessary norms, values, rules of behavior by students (Karpushina et al., 2020a).

A special role in the social education of students in the institutions of supplementary education can be played by their involvement in volunteer activities. Thanks to the participation of children and adolescents in social actions, they form important socially significant qualities - kindness, mercy, diligence, patriotism, social and civic activism, asceticism (Baranova, 2020a, 2020b). At the same time, it is important for us that I. S. Kon's opinion (2003) that society should teach gifted children to take care of other people and mutual assistance, since they have all the opportunities to make other people's lives better.

The above shows the importance and necessity of social education of children and adolescents in the course of additional education, which is a specially organized in institutions of additional education, the process of formation of a socially active, responsible person who possesses civic stand, value system, socially significant qualities, skills, socially responsible and socially positive behavior, capable of socially active work, participation in socially important projects for the benefit of people and society.

Additional education is an effective factor in the socialization of students, the organization of socially active, culturally productive and personality-developing activities of children in institutions of supplementary education (Karpushina et al., 2020b).

Additional education of children in the terms of social education of children and adolescents plays an important role in the formation of patriotism, in the "cultivation and use of positive values and attitudes" by all participants in the educational process (Glanz & Nikièma, 2011), which is important for the formation of a citizen of Russia, a socially responsible person, a representative of the ethnos and the world (Karpushina, 2012). In the modern socio-cultural situation, institutions of additional education should become a place where cultural consciousness is strengthened and positive cultural identity is developed (Seeberg & Minick, 2012), social and household orientation is formed (Barcaeva & Ryabova, 2020).

### 3 Research Methodological Framework

The purpose of the study is to identify the theoretical and methodological foundations of social education of children and adolescents in institutions of additional education. Tasks: 1) to determine the pedagogical foundations of social education of children and adolescents in institutions of additional education; 2) to characterize the components of scientific and methodological support of social education of children and adolescents in the course additional education.

Methodological guidelines were complex, dialectical, comparative, logical, hypothetical-deductive approaches, theoretical analysis of scientific literature, generalization, systematization, classification of research results.

### 4 Results and Discussion

The pedagogical foundations of social education of children and adolescents in the course of additional education include the purpose, objectives, principles, content.

The purpose of social education of children and adolescents in institutions of additional education is the formation of a socially active, responsible person with a civic stand, value orientations, socially significant qualities, skills of socially responsible and socially positive behavior, capable of socially active work, participation in socially significant affairs for the benefit of people and society.

As tasks of social education of children and adolescents in the course of additional education, the following can be distinguished: to educate children and adolescents an active civic stand, socially significant qualities (patriotism, value orientations, charity, responsibility), to promote the assimilation by students of universal, ethnic and basic values, socio-cultural norms, socio-cultural knowledge, to form skills of socially responsible and socially positive behavior, interaction and cooperation, participation in socially significant affairs for the benefit of people and society, respect for ethnic groups and their cultures.

The principles of social education of children and adolescents in institutions of additional education are the involvement of children in various forms of socially significant activities and personally significant relationships; focus on the formation of positive value relationships; activation of socialization and social self-realization of the child; inclusion in social activities of teachers, students, parents, public organizations. It is very important to take into account the emotional mood of students who are involved in active communication and interaction, which determines the success of educational influences (Mindes, 2015).

The content of social education should take into account the social processes of school life, therefore, special importance should be given to the "hidden curriculum" in which the goals of social education are realized (Giroux & Penna, 1979). As an

example of the implementation of the content of social education in institutions of additional education is the introduction of them to participate in volunteer activities. For example, it is worth noting the successful experience of implementing this direction in Municipal Budgetary Institution of Supplementary Education Children's Art School No. 2 named after V. P. Trifonov" in the city of Vologda, where the comprehensive education program "The Republic of a Young Volunteer" is being tested, which includes three stages: "Realizing myself, I help another person!" (the first stage, 7-9 years old); "Give good without demanding a reward" (the second stage, 10-12 years old); "It's not easy to be kind" (the third stage, 13-15 years old) (Karpushina & Baranova, 2021). This program is a holistic image of the social formation of a child's personality as a subject of his own life and social practice within the framework of the Concept of the development of additional education for children (2020) and the implementation of the federal national project "The Success of Every Child". The meaning and purpose of the program lies in the self-organization of the personal system of students, implemented in the disclosure of the social potential of children's participation in various types and forms of activities with a social orientation.

During the implementation of various directions (social, patriotic, environmental, cultural and educational, event, sports, media-informational) of the comprehensive education program "Republic of a Young Volunteer", the following social actions are carried out: research (conducting surveys, participating in social and educational routes); advertising (poster contest "Clean Coast"); charity (implementation of concert programs "Children to children"; action to collect animal food in cooperation with the center for assistance and protection of animals "Veles", action "Paw of Friendship", collection of hygiene products, handmade gifts for the orphanage "Baby House"); event actions (conducting a "Lesson of Kindness", cooperation with the social center for veterans "Care"); patriotic (participation in All-Russian actions "Victory Train", "All for Victory", "Blockade Bread"), environmental (participation in eco-quest, cleaning the school, city, planting friendship trees).

During the implementation of the program, the following social and pedagogical events are held: a volunteer rally, initiation into volunteers, classes at a volunteer school (talks and discussions, lectures, practical classes); trainings, a rally, a volunteer gathering, excursions to volunteer centers, round tables and conferences; thematic film and video screenings; events within the framework of the All-Russian contest "Volunteers of Russia", the Federal program for the development of children's volunteerism "You decide!"; participation in the rating "League of Volunteer Detachments", in the ambassadors' competition "League of 15 volunteer detachments", in federal volunteer shifts in the All-Russian children's centers "Artek", "Orlyonok" and "Ocean"; socio-pedagogical events - charity concert, subbotnik, social events, socio-cultural excursions; visits to boarding schools; meetings with veterans; concert for children from orphanages; creation and maintenance of the website of the republic; development of the Charter of the republic; Vows of a young volunteer, visits to virtual exhibitions and presentations; *socio-pedagogical games* - fair of the good, travel game, parade, role-playing and business games, cognitive and educational game; quiz-search (a quiz with elements of searching for answers to entertaining questions on the content of books, facts of the biography of heroes, significant social events), a story quiz (based on an entertaining plot in which questions are interwoven, while the plot can be any: a journey into history, overcoming obstacles, a heroic saga, adventures in search of treasure, etc.), quests (environmental, event). The most important thing that a teacher should understand is that an event is an event of a child, not for a child.

The education program "Republic of a Young Volunteer", implemented in the course of cooperation with municipal authorities, public voluntary organizations, encourages children, adolescents, parents, teachers, all participants in volunteer activities to be active subjects of socially significant activities (Baranova, 2020a, 2020b).

Scientific and methodological support of social education of children and adolescents in the course of additional education includes methods, forms, pedagogical conditions.

Social education of children and adolescents in the course of additional education involves the use of various methods: *the formation of consciousness* (the creation of educational situations, the method of success, problem-value conversations), *the organization of activities and the formation of experience of social behavior* (socially significant research project, the method of problem situations, social test), *stimulating of activities* (the method of assignments, encouragement, competition), *control, self-control and self-assessment* (observation, portfolio protection) (Baranova, 2020a, 2020b).

Social education of children and adolescents in the course of additional education involves the use of the following forms, such as a conference, a social action, a socio-pedagogical game, a socio-pedagogical event, a socio-pedagogical activity, a flash mob, a concert, a creative encounter, a traditional gala concert, a festival, excursions, weekend club classes, an Olympiad, a competition, a recital, a collective creative work, etc.

Social education of children and adolescents in the course of additional education involves the use of the following pedagogical conditions:

- creation of a social and educational environment in organizations of additional education;
- organization of volunteer activities in order to involve students in socially significant and socially active work;
- inclusion of students, teachers, administration, parents in active socially significant work;
- the use of digital educational tools and content to stimulate the social education of children and adolescents in the course of additional education.

## 5 Conclusion

Thus, it is worth noting that the social education of children and adolescents in the course of additional education should be carried out comprehensively, taking into account the social policy of the state, the demands of society, socio-cultural reality, modern educational needs.

The organization of social education of children and adolescents in the course of additional education should be aimed at the formation of a socially active, responsible person with a civic stand, value orientations, socially significant qualities, skills of socially responsible and socially positive behavior, capable of socially active work, participation in socially significant affairs for the benefit of people and society.

The realization of the goal of social education of children and adolescents in the course of additional education will be provided by content that takes into account the social processes of school life, encourages children, adolescents, parents, teachers to be active subjects of socially significant and socially active work.

Social education of children and adolescents in the course of additional education involves the use of various methods (formation of consciousness, organization of activities and formation of experience of social behavior, stimulation of activity, control, self-control and self-esteem), forms such as a conference, social action (research, advertising, event actions, patriotic environmental), a flash mob, a concert, a creative encounter, a traditional gala concert, a festival, excursions, weekend club classes, an Olympiad, a competition, a recital, collective creative work, as well as appropriate pedagogical conditions involving the creation of a socio-educational environment in supplementary education organizations; organization of volunteer activities in order to involve students in socially significant and socially positive activities; inclusion of students, teachers, administration, parents in active socially significant work; the use of digital educational tools and content

to stimulate the social education of children and adolescents during additional education.

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**Primary Paper Section: A**

**Secondary Paper Section: AM, AN**



## RESEARCH ON THE STUDENTS' PERCEPTION OF THE TRAINING QUALITY IN THE FIELD OF "CULTURE AND ART" WITHIN DISTANCE LEARNING FORMAT

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**Abstract:** During a turbulent period of coronavirus pandemics, the system of education has undergone major changes. Most educational organizations faced the external challenges, which affected the density of learners, and the quality of educational services. Within the frames of this research, we interviewed the consumers of educational services represented by students of Minin Nizhny Novgorod State Pedagogical University and Glinka Nizhny Novgorod State Conservatoire to find out their opinion about the quality of training in "Culture and art" within distance learning format. The analysis of the obtained data exposed the most acute problems mainly related to the specifics of studied disciplines, their creative orientation, and helped to identify the possible solutions.

**Keywords:** learners, postgraduate students, quality of education, training program, creative fields of training.

### 1 Introduction

The modern realities arising out of the events in spring 2020 in the Russian Federation predetermined a need for all institutions of general, secondary and higher education, as well as all additional education facilities, to switch to the distance learning format (Sizova et al., 2020). This led to major complications not only organizational, but also educational, didactic and personal.

The system of higher education in the Russian Federation is governed by the regulatory documents (Sizova & Starostina, 2019). Federal law On Education in the Russian Federation dd 29.12.2012 N 273-FZ (the latest revision) (2012) the Federal State Standard of Higher Education in the fields of training 53.03.06 Music and Applied Art and 44.03.01 Pedagogical Education (2016), the Regulation on Organizing and Implementing Educational Activities under the Higher Education Programs - Bachelor's, Specialist's and Master's programs as approved by the Order of the Ministry of Education and Science of the Russian Federation dd April 5th, 2017 N 301 (2017) assure the high quality of education in the field of "Culture and art" (Medvedeva et al., 2019; Sizova & Starostina, 2019). However, a crucial role in maintaining the quality at a proper level belongs to ensuring compliance with applicable norms and regulations, ensuring the comprehensive training process locally at the level of each educational facility.

It is important to note that during the pandemic a decrease was observed in the number of applicants within the admission campaign in 2020. In particular, in the system of higher education in Nizhny Novgorod region, the analysis of admissions statistics at Minin Nizhny Novgorod State Pedagogical University (2021) showed that there was a significant drop in the number of applicants in the field of "Culture and art", while students' dissatisfaction with the learning process increased. More and more often the opinion is expressed that the quality of educational services does not correspond to the imperatives of our times.

In this connection, it seems appropriate to study the consumers' perception of the quality of educational services on the example of "Culture and art" field of training. Finding out the opinions of students on the quality of obtained education makes it possible to identify the strengths and weaknesses inherent in the training for

creative specialties. Analysis of the data obtained during the interviews will be helpful in determining the strategy for developing effective training programs in the field of "Culture and art", and in choosing the most adequate tools to overcome the existing contradictions.

### 2 Literature Review

A large number of scientific works in sociology, economics, pedagogy, and professional education are devoted to the problem of exploring the quality of educational services. A. I. Subetto and N. L. Selezneva (1997) directed their efforts to assessing the quality of training programs. The authors examine the process of managing the quality of education, which they see as the purposeful influence rendered by a control subject on the processes of ensuring, maintaining and sustaining the high quality of objects in their life cycle and in the chain of life cycles and collection of the feedback (control, evaluation, analysis) in accordance with the set goals and established norms. They developed a concept of the teaching process aimed at managing the quality of education. The authors have identified the following complementary components: didactically organized knowledge, educational and scientific literature, laboratory, computer and other material and technical resources, funds, finances, land, personnel. A. A. Avetisov (1996) describes a systemological approach to the quality management in education. The author comes to the conclusion that all changes in education are manageable, controllable and have a certain dynamic. The educational systems are presented as adaptive systems of education quality management with feedback and all the systemological attributes peculiar to functional systems.

In the field of sociology, there are also scientific works that explore the problems of quality of educational services. S. V. Koplík (2015) in his dissertation research raises a question of the essence and specific features of educational services provided by non-state universities in the modern Russia from the angle of sociological analysis. The author concludes that educational services provided by non-state higher education institutions satisfy the educational needs of certain groups of people to develop their intellect. N. V. Strebkova (2009) considers the phenomenon of education quality assessment through the lens of sociological aspect. The author argues that the educational system should be studied through the prism of society. The researcher points out that education is a socially predicated phenomenon and in this connection, the study into the quality of education should be based on the study of public opinion. From the author's point of view, the education system should cater to the needs of modern society.

I. K. Koshcheeva (2003) investigates qualitative characteristics of non-state higher education through the prism of sociological approach. Among the works on the stated problem, we may single out studies in the field of economics. A. A. Abramkina (2011) investigates the process of evaluating the competitiveness of educational services provided by universities. The author argues that defining the approach to assessing and identifying a set of parameters reflecting the competitive advantage of an institution over its competitors is a highly relevant research goal keeping up with the times. The existing developments on the problems related to assessing the competitiveness of educational services are not exhaustive, and ramp up the demand for active scientific search. M. I. Gomboeva and N. I. Spandershvili (2018) in their work study the process and distinct features of implementing additional professional training programs in the field "Culture and Art" in Transbaikal Territory and the Republic of Buryatia. The authors conclude that the main objectives of such programs are to upgrade competencies of employees in this sphere, regulate the labor market, implement professional standards, adapt graduates to the changing requirements of production, generate new knowledge and build new competencies that meet the demands of a system of the future.

The aforementioned driving forces become the powerhouse of innovation, optimization of scale and cost reduction.

Researcher in the field of cultural studies I. I. Irkhen (2012) discussed the problems of the system of education in the Russian Federation in the field of "Culture and art" through global and regional dimensions. The author expresses the opinion that education in culture and art is an institutionalized process of transmitting, assimilating and preserving the spiritual values of the society aimed at inculturation of a person, acquisition of a package of competences, development of the inner world, creative potential, intellectual and emotional wealth, fueling progressive development of the society. The researcher asserts that education in the field of "Culture and art" is an integral part of the cultural policy of the state.

### 3 Research Methodological Framework

The purpose of this research was to find out the generalized opinion of students about the quality of teaching in "Culture and art" within distance learning format.

In order to achieve the goal of this research, the following objectives were set:

- to systematize and analyze scientific literature, as well as regulatory documentation governing implementation of educational programs in the field of "Culture and art" in the conditions of distance learning;
- to make an interview guide for researching the perception by students of the quality of education in "Culture and art" field of training in the distance learning format;
- to interview students, summarize and present the obtained results.

This research employed theoretical and empirical methods, such as analysis and systematization of scientific literature on the research problem, analysis of regulatory documentation governing educational process, and the method of interview. The interview survey covered 63 1st-year Bachelor's program students from Minin Nizhny Novgorod State Pedagogical University and 37 respondents from Glinka Nizhny Novgorod State Conservatoire studying their 1st year under the Bachelor's and Specialist's programs. In total, there were 100 respondents. The survey of the students' opinions was conducted during the second semester of the academic year 2020/2021, from February to June.

### 4 Results and Discussion

Retention of students is one of the most important challenges facing the universities. During admission campaign, when enrolling students for creative specialties and fields of training, additional creative tests are conducted (auditions, essays), which allow the subject committee to get an idea about the creative abilities of future students (Sizova & Ulyanova, 2020). Such approach to enrollment significantly reduces the number of "accidental" applicants in these fields of training (Sizova & Okuneva, 2020). Throughout the training, it is highly important to retain the enrolled students, as it is one of the indicators of efficiency and competitiveness of the educational program. We believe that for this purpose it is important to monitor the opinion of students, to get their feedback.

The shift to distance learning in 2019/2020 and 2020/2021 academic years has recalibrated the work of teachers with students, including in creative specialties and fields of training. According to our observations, the scope of direct interactions between a teacher and a student decreased dramatically, the motivational focus in creative activities has shifted, and the quality of teaching in the new conditions has become controversial. This gave rise to the need to conduct interviews with students, who are direct participants of the educational process and consumers of educational services. Students were interviewed with the help of the author's interview guide (Table 1), which contains general questions and clarifying questions. The clarifying questions were asked only when

needed, if the respondents had difficulties in answering the general questions.

Table 1 Interview Guide

General Questions	Clarifying Questions
Why did you choose this field of training?	Was it your parents' advice? Would you like to find self-fulfillment in creative activities? Is this the only thing you know how to do well? Were you allured with the level of potential earnings?
Did you study in the institutions of additional education on the programs of artistic and creative orientation?	Was it a pre-professional institution of artistic and creative orientation? Was it an institution that offers exclusively programs of additional education and developmental nature with artistic and creative orientation?
Are any of your acquaintances engaged in the field of "Culture and art"?	Do you keep in touch with them? Do they represent the role models of success for you?
How do you feel about the distance learning format for educational programs in "Culture and art" field of training?	Do you need a personal interaction with the teacher? Do you feel you need to perform concerts on stage? Do you find the mobility of a distance format comfortable?
If you were offered different training formats, would you choose the distance learning format for creative specialties?	If you answered Yes, explain why. If you answered No, explain why.
How do you feel about theoretical disciplines being taught with the use of distance technology?	For what disciplines, in your opinion, a shift can be made to a distance format? Will it save time? In your opinion, will it affect the quality of training in these disciplines?
How do you feel about the idea to teach creative and practical disciplines only with the use of distance technologies?	For what disciplines a shift can be made to a distance format? Will it save time? Will it affect the quality of training in these disciplines?
Would you advise your acquaintances to pursue studies in creative specialties and fields of training?	If you answered Yes, explain why. If you answered No, explain why.
Do you have plans to continue studies in the chosen specialty at the next level of education?	If you answered Yes, explain why. If you answered No, explain why.
Are you going to find a job in the field of your specialty?	If you answered Yes, explain why. If you answered No, explain why.

Source: the authors

The interview survey revealed the following:

To the question about the reasons for choosing their field of training, 80% of respondents "wanted to find self-fulfillment in creative activities", 15% of students gave preference to this field of training because they have no other competencies, 5% of respondents said that they were allured by the level of potential wages.

100% of respondents also responded that they received training in institutions of additional education in the field of artistic and creative orientation, of which 80% were trained under the programs of pre-professional education, and the remaining 20% were trained under the programs of additional general education.

90% of the respondents indicated that there are people among their acquaintances who are engaged in the field of "Culture and art", the remaining 10% do not have people of these professions in their circle. Out of 90% of respondents who have among their acquaintances the people working in the field of "Culture and art", 88% noted that they have regular communication with these people and pointed out that they see these people as the role models.

To the questions relating to the quality of the distance format of learning, 98% noted that "personal interaction with a teacher is important" and only 2% of respondents did not point to a need for personal interaction.

62% of trainees would prefer the classroom format of training, explaining it by the benefits of direct interaction with a teacher. At the same time 38% of respondents would study remotely, explaining it by convenience and economy of time as well as material costs.

93% of respondents noted that for theoretical disciplines a shift can be made to a distance learning format, which will ensure maximum optimization and saving of time, 7% of respondents would prefer the classroom learning, including in relation to the theoretical disciplines. At the same time, 99% of respondents indicated that creative disciplines should be delivered only in the classroom format. 98% note that the quality of training in creative disciplines is significantly deteriorated when the distance format is used, and only 2% have an opinion that the quality of education in this format remains the same.

The last three questions are intended to reveal the students' readiness to recommend creative specialties and their willingness to continue studies in this field. The results were as follows: 90% of respondents are ready to recommend their friends to pursue studies in these specialties, explaining it by high interest in the professions in culture and art, 10% would not recommend training in creative specialties and fields of training, commenting that they would not want to further find self-expression in the field of "Culture and art".

To the question "Do you have plans to continue studies in the chosen specialty at the next level of education?": 78% of students answered affirmatively, explaining it by the need for further creative development, 22% of respondents do not plan to continue studies in these fields of training, explaining that they do not see any career prospects in this field, and that's why they are looking into the possibility of acquiring other professions, more promising in this regard, for example, in the field of economics and management.

To the question: "Are you going to find a job in the field of your specialty?" 94% of respondents intend to seek employment in the field of their specialty, namely in the field of "Culture and art", explaining it by the opportunity to find self-fulfillment in this field and to discover new creative qualities, and 6% of respondents don't want to work in this field, alluding to the low demand for professions in culture and art, difficulties in finding a job, as well as low wages.

## 5 Conclusion

Drawing on the revealed opinions, we can conclude that the students' choice of creative specialties is conscious, and students who participated in the study have a certain level of training and amount of knowledge, as evidenced by the additional education or pre-professional education received by them.

This may be regarded as a career-related self-determination. When entering the university to study in the indicated specialty, an applicant sees own self, first of all, as a creative personality.

During training, special attention is paid to the study of special creative disciplines. This conclusion has been validated with the survey results, most of respondents attach special importance to the study of special creative disciplines, pointing to the impossibility of teaching such disciplines exclusively with the use of distance technologies, due to the difficulties, which in future may have a detrimental effect on the quality of training in creative disciplines.

In our opinion, when planning the educational process in "Culture and Art" field of training, it is necessary to combine both distance and classroom learning. In this connection, the most optimal format of learning, which allows accommodating the opinions of teachers and students, can be a blended learning, with theoretical disciplines delivered through distance learning and creative disciplines taught exclusively in the traditional classroom format.

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## ORGANIZING INDEPENDENT WORK OF FUTURE FOREIGN LANGUAGE TEACHERS BASED ON THE WEBQUEST TECHNOLOGY

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**Abstract:** This paper deals with the problem of organizing the independent work of future foreign language teachers in the context of education digitalization. The paper substantiates the idea that modern society needs a specialist who may quickly respond to the challenges of modernity and is capable of self-development and self-organization. The authors focus on the competencies promoting systemic and critical thinking, communicative skills, teamwork skills, abilities to use modern information technologies to handle professional tasks. The paper describes the didactic potential and structure of the WebQuest educational technology. Particular attention is given to the method of organizing the WebQuest activities facilitating self-directed learning of a foreign language by students.

**Keywords:** WebQuest, independent work, self-discipline and self-development, communication, teamwork, information search and analysis, critical thinking.

### 1 Introduction

Today, digitalization of higher education is becoming one of the leading trends in the development of modern society. However, the learning process in higher education is oriented not so much toward the goal of informational saturation but toward developing productive thinking, growing intellectual potential of a learner and strengthening their skills of logical analysis and comprehensive processing of the consumed information, as well as their ability to produce creative designs. The process of digitalization in education is aimed at achieving two interrelated goals. First, the educational process is getting modernized to prepare a future specialist for living in the digital economy. Second, a digital learning environment is created which promotes self-directed learning through the use of digital learning tools, online courses, digital learning resources (Blinov, et al., 2019). The ultimate goal becomes teaching how to learn independently in an ever expanding digital space, which further facilitates more efficient search for, modification and presentation of information, and sets in motion the mechanisms of self-fulfillment, self-education, self-development, self-analysis, self-improvement (Sidorkina, 2013).

According to the Federal State Standard of Higher Education (2018), the Professional Standard for Teachers, a future teacher should acquire new knowledge independently and consciously by thoughtful study and comprehension of the material, examining carefully the facts and examples contained therein, and basing proper theoretical generalizations upon them, and the knowledge is acquired together with the ability to work with information. Today, a modern student should be not a passive consumer of knowledge, but an active creator able to formulate, analyze and solve a problem. The reform of higher education in Russia implies transition from the paradigm of learning to the paradigm of education, which in turn orients students toward the active methods of gaining knowledge and developing their creative abilities, transition to the individualized learning tailored to the needs and capabilities of students.

The modern process of teaching should be intended to develop students' ability to multidimensional modeling of cognitive learning and research learning activities, to creative self-development (Bondar, 2013). A digital learning environment may become a unique platform for interactive dialogue between the user and numerous digital tools, multimedia resources and virtual learning materials useful in acquisition of universal,

general professional and professional competences through self-directed independent work (Babushkina & Kalugina, 2020; Blatt, 2000).

The research presented in this paper is relevant due to the need of revising ways of organizing the independent work of future teachers in the context of digitalization of education in relation to the global trend of lifelong learning. This research makes a certain contribution to the process of vocational training of future teachers, since modern digital tools and technologies offer immense opportunities and advantages to intensify and optimize the educational process, and incorporate those forms and methods of learning which promote personal development of a learner.

### 2 Literature Review

Self-directed learning has become a target of analysis for many foreign educators and researchers (Brookfield & James, 2014; Knowles et al., 2015; Lakkala et al., 2011; etc.). Lifelong learning is seen as a special tool for shaping the personality, as a means of raising competence, competitiveness and level of personal development; as a strategy for involving every citizen in the social, cultural and political life of the country; as a form of social control (Kogan, 2000). M. Knowles (1975) describes self-directed learning as "a process in which individuals take the initiative, with or without the help of others, in diagnosing their learning needs, formulating learning goals, identifying human and material resources for learning, choosing and implementing appropriate learning strategies and evaluating learning outcomes" (p. 18).

In this context, the concept "digital didactics" takes on special relevance. According to some researchers, digital didactics includes such forms of learning in which digital tools and technologies are used as a means of learning and intercultural communication (Kerres, 2012). A digital learning environment is a trend that modifies the learning process, the way it is managed and designed, which becomes a strong motivational stimulus for both a teacher and a student (Deryuga et al., 2020; Soltovets et al., 2019). According to V. I. Safonov (2013), pedagogical education is bringing forward new requirements for a teacher. The teacher should be able to navigate the world of information, make an effective use of modern technologies in their work, as well as continuously grow as a professional. As their potential employee, the employers want to see a graduate who is able and ready to successfully master new technologies within a short time, to independently fill the gaps in knowledge and skills, to learn how to apply them in practice in a plenty of unforeseeable situations, to ensure the effectiveness of professional activities (Kizrina & Yankina, 2016). The educational system today is searching for a role model of a modern teacher - a mentor, a tutor, a consultant, a project leader, a researcher (Lazutova & Piskunova, 2020). Digital interaction between a teacher and students is becoming more diverse every year and covers all existing forms of communication (Karsenti, 2020; Verzhinina et al., 2020). The modern teacher must be media competent, which means having the ability to find necessary and useful information in the virtual space (Blatt, 2000). The need to bring changes into the teacher training is driven by the interests of public and state development (Antonova et al., 2019).

### 3 Research Methodological Framework

The purpose of this research is to analyze the potential of WebQuest teaching technology for organizing independent work of students as future teachers of foreign languages. The stated purpose predetermined the need to address the following objectives:

1. characterize the competencies aimed at developing the skills of independent work in future teachers;

- present the methodology of organizing a web-quest on the topic "Environmental Problems" by future teachers of foreign languages in the process of their independent work.

This research employed the following research methods: the exploration of scientific and methodological literature on the topic of research, the method of analysis and synthesis of the phenomena under study, the method of generalization of the obtained results.

#### 4 Results and Discussion

This paper identifies the categories of universal and general professional competencies, which, in our opinion, require the solid skills of independent work: systematic and critical thinking, teamwork and leadership, communication, information and communication technologies for job-related activities. These categories of competencies are referred to the soft-skills essential in the professional activities of a modern teacher.

The Federal State Standard of Higher Education specifies the following competencies corresponding to the above categories: UC-1 – ability to search for, critically analyze and synthesize information, apply a systematic approach to solve the outstanding tasks, UC-3 – ability to engage in social interactions and fulfill the assigned role in a team; UC-4 – ability to carry out oral and written business communications in the official language of the Russian Federation and foreign language(s)), GPC-9 – ability to understand the underlying principles of and to use the modern information technologies for handling the job tasks (Federal State Standard of Higher Education, 2018).

One of the ways to strengthen the indicated competencies is through introduction and use in the learning process of the WebQuest digital technology. In pedagogy, WebQuest technology includes various tasks with game elements, which imply the broad use of information resources, including resource on the Internet. This technology is often used in universities for organizing independent work of students in order to obtain or consolidate knowledge on the studied topic/ module. In the process of a WebQuest students work independently with the content, while a teacher provides consulting support, organizes cognitive learning, problem-oriented and research activities of students, creates facilitating conditions for engaging their mental processes and creativity, supports their proactivity. Organizing independent work based on a WebQuest involves integration of three components: pedagogy, technology, and learning content (Willermark, 2018; Lund et al., 2014; Navarro et al., 2016).

B. Dodge proposes the following structure of a WebQuest:

- introduction: introducing the WebQuest topic, making a tentative work plan, dividing participants into microgroups, assigning roles, providing an overview of the quest;
- tasks: formulating the research problem, describing an algorithm of the quest participants' actions, explaining how the quest result should be presented;
- resources: listing the required information resources;
- action plan: describing all stages of the quest for solving the quest tasks;
- evaluation: making a scale and criteria for evaluating the WebQuest;
- conclusion: summarizing the main results of the WebQuest (Dodge, 1995).

WebQuest on the topic "Umweltsprobleme" may be developed using a digital tool <http://zunal.com> – Zunal WebQuest Maker (2021). This webQuest is designed for 5th-year students pursuing studies in the field of training 44.03.05 Pedagogical Education, specialty Foreign Language (English, German).

##### 1) Introduction.

Through the proposed WebQuest, students will act as researchers searching for, analyzing, and summarizing information related to environmental problems. The WebQuest consists of four big modules, each presenting certain content organized in the form

of different tasks in German language. While working on the quest, one may use the Internet resources. After completing all tasks, students demonstrate the major results of their work.

##### 2) Objectives:

- develop critical thinking of students;
- develop teamwork skills to achieve practical results;
- develop foreign language communication skills of students through their independent work;
- develop the skills of searching, analyzing and generalizing information on the topic "Environmental Problems".

3) Resources are presented in the form of videos from YouTube website, texts from the online editions of the German newspapers Zeit, Deutsche Welle (2021) and Russian Internet portals.

##### 4) Action plan.

Stage 1. Discuss environmental problems.

Task 1. Describe the pictures. What do they have in common? (See Figure 1).

Figure 1 Pictures on the topic "Environmental Problems"



Source: the authors

Task 2. Which environmental problems are typical for your region? What can you personally do to solve environmental problems? Take photos and refer them to one of the following categories:

- problem description: photo and comment;
- categories: water, animals and plants, soil, air, waste.

You may use the resources of the Environmental Problems website. Tourismportal (2021).

Task 3. Provide a written feedback in a foreign language regarding the work you carried out at the first stage of the project. Reflect on the upsides and downsides. What did you learn while working on the tasks?

##### Stage 2. Our Environmental Project.

This stage is concerned with the problem of "Waste Sorting".

Task 1. Divide into groups. Survey students on social media about the problem of waste sorting in their hometowns. Assign roles in the group so that each participant is responsible for a certain task: creating the group on social media, processing the survey results, and presenting the obtained results to other micro groups. The questions for the questionnaire survey should cover the following important points:

- personal experience of waste sorting;
- waste sorting in a city/ region;
- possible waste sorting solutions in a city/ region.

Task 2. Divide into groups. Have a conversation with experts (teachers of biology, chemistry, ecology). Ask them about the impact on the environment of the waste that is not recycled, how

long it takes for a plastic bottle to decompose, and how plastic gets into the waters of the oceans. Make a presentation of the results.

Task 3. Read a foreign language text about waste sorting in Germany Mülltrennung in Aschach (2015), translate it. Answer the questions in writing, attach your answers.

1. How is waste sorting organized in Germany?
2. How complicated is the waste sorting process?
3. What is the situation with waste sorting and recycling in your city/region?
4. Based on the analysis of information, propose your own solutions to the problem.

Task 4. Provide a written feedback in a foreign language regarding the work you carried out at the second stage of the project. Reflect on the upsides and downsides of the offered tasks. What did you learn while working on the tasks?

Stage 3. Our motto.

Task 1. Watch the video Mülltrennung DE (2017). In pairs, make a short dialogue regarding the content of the video in a foreign language. Present the dialogues to each other.

Task 2. Divide into groups, come up with an ecological appeal in a foreign language, which will make people think about the state of the environment. You are free to choose a form of the appeal. It could be a poem, a chant, a rap, etc. The appeal should reflect the problem and its possible solutions.

Stage 4. Our campaign.

Task 1. Watch the video Umweltschutz im Alltag: Wie geht das richtig? (2015). During watching it, note the recommendations that are given in the video about environmental protection.

Task 2. Make your own recommendations that will help to protect the environment.

Task 3. Read the texts "Wastes", "Large amounts of waste" in the online edition of the German newspaper "Zeit" Deutschland produziert zu viel Müll (2015).

Task 4. Try to calculate how much waste you personally produce in a year, how much waste your family produces in a year, and how much waste the residents of your city produce in a year. Present the results in a diagram.

Task 5. As a team, prepare a creative report on your WebQuest. You are free to choose a form of the report: presentation, collage, poster, video clip. In your report try to use information from the resources provided.

5) Evaluation.

An important part of any WebQuest is a comprehensive scale of evaluation criteria by which students evaluate themselves and members of other groups. A teacher should use the same scale when evaluating the quest. Since the WebQuest is a complex task, it is recommended to adhere to criteria such as:

1. oral and written communication;
2. ability to work in a team to achieve a practical result;
3. demonstration of the major results of own work using various digital technologies;
4. persuasiveness of reasoning, etc.

A scale and evaluation parameters should be developed for each criterion.

6) Conclusion.

WebQuest helps to achieve the following results: develop the communicative skills of monological and dialogical speech in a foreign language; develop the ability to define the problem, subject and object of research; to select information sources at own discretion; to analyze the selected information sources, to

pick and structure the information relevant for research; strengthen teamwork skills, develop the qualities and skills of a leader.

## 5 Conclusion

The development of digital competencies of future foreign language teachers hinges on the practical application of digital tools and technologies by students in the learning process. This means that a student should be able to design a foreign language lesson based on digital technologies; to organize own activities using various organizational forms for developing the foreign language communicative competence; be able to use modern digital resources and technologies in their work to address job-related tasks.

The above tasks can be accommodated by using the WebQuest educational technology, which is an essential teaching tool for developing key competences that a modern foreign language teacher must possess. WebQuest is one of the most effective and promising digital technologies for organizing students' independent work in a foreign language class, as this technology boosts the research activity of both a teacher and students. With the help of the WebQuest technology, a teacher gets a powerful way to uplift students' motivation to learn, encourage them to comprehend the material through a creative approach, to consolidate their knowledge and check it effectively. It is worth noting that today as part of learning activities students do a lot of research work, within the frames of which they search for information, analyze and systematize it. Beyond that, WebQuest technology encourages students to think critically, to address problem tasks, to engage in a discussion in a foreign language, to formulate own point of view and to defend own opinion. Incorporation of the WebQuest digital technology in the educational process will not only give a boost to the students' learning, but also lay a solid foundation for their further self-directed learning and self-development directed at mastering general professional competencies (GPC) and universal competencies (UC).

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**Primary Paper Section: A**

**Secondary Paper Section: AI, AM**



## SOCIAL DEMAND AND REQUIREMENTS FOR A MODERN TEACHER

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**Abstract:** The article raises the issue of the social demand for teaching, identifies the subjects included in it. The analysis of the terms "state orders" and "social demand" is carried out, the requirements imposed by external and internal social customers in relation to education are considered. The article compares the requests of the two mains, from the point of view of the authors, social customers - parents and students. The main requirement that forms the core of the social demand is highlighted. Taking into account the essence of the social demand, the mechanism of its formation and implementation in education is substantiated, the requirements of social customers for education are analyzed and generalized, main directions of the teacher's work are highlighted in accordance with the requirements.

**Keywords:** social demand, state orders, quality of education, "knowledge" component, educational component, teacher, parents, students, requirements for a teacher.

### 1 Introduction

Modern educational policy is focused on the quality of education, which is its compliance with the needs, interests, goals of the individual, society, and the state.

The increasing role of education entails the transformation of the next new version of its functioning. The professional pedagogical community is inevitably involved in this process, whose task is to assess the social situation and determine development prospects. However, teachers will not be able to take into account the full range of needs of society, objective tasks of education and form a social demand on their own, since this process requires the consolidation of certain resources, the interaction of all subjects of society who are interested in the education system and are interested in the positive results of the educational institution.

A systematic approach to the analysis of the qualitative parameters of the results of educational activity enables us to state the presence of objective and subjective sides of the social demand. This is due to the fact that each subject of the social demand for education forms a certain component in it (cultural-historical, socio-situational, personal-individual), taking into account his needs, ideas and preferences. At the same time, the state acts as a coordinator of the values of various communities affecting the educational sphere. As the main subject of the social demand, the state solves the main problems of education and presents the social demand in the form of regulatory documents.

In this regard, the issue of the role and place of the social demand in the implementation of educational activities becomes relevant, and what structures act as subjects of the social demand and ensure the heterogeneity of its content.

### 2 Literature Review

The main content components of the conceptual field "social demand" are considered in the studies of I. G. Akperov (1998), L. G. Borisova (1999), M. Weber (1990), M. A. Gurevich, N. F. Pavlova (1998), N. N. Nikitina (2002), M. H. Khaibulaev, G. M. Gadzhikurbanova (2017). Thus, M. H. Khaibulaev, G. M. Hajikurbanova (2017) analyzes not only the fundamental concept itself, but also the patterns and mechanisms that

determine the dynamic properties of the system of relationships in the educational space at each stage of the historical period. The researchers pay special attention to the cultural-historical, socio-situational and personal-individual structural components of the social demand of the objects of society (Khaibulaev & Gadzhikurbanova, 2017).

A separate niche in the social planning processes is occupied by the educational component, and, in particular, the personality of the teacher, accumulating a charge of broadcasting co-creation. With all the variety of factors that determine the portrait of a sought-after and trending teacher by customers, the basic cognitive guidelines and various skills and abilities that accrue to his person, "skills" that meet the challenges of the time remain unchanged (Shukshina et al., 2018; Zhukova et al., 2019; Safonova et al., 2020; Kudashkina et al., 2018). The modern representative of the pedagogical community is considered as a constantly developing personality moving along the trajectory of pedagogical growth.

We note a number of requirements for a teacher, which are dictated by the social demand of various social subjects: possession of value-semantic competence, professional-value orientations and the presence of professional self-awareness (Shukshina & Akamov, 2015; Savinova et al., 2020), possession of socio-cultural competence (Tatyana & Vlasov, 2015; Kudashkina et al., 2018), possession of practice-oriented competencies (Vardanyan et al., 2018), information culture and information technology competence (Babushkina & Safonov, 2015; Kuznetsova, 2018; Tsareva et al., 2018; Vershinina et al., 2020; Kuznetsova et al., 2020; Beloglazova et al., 2020) with managerial competencies (Kurkina et al., 2020), etc.

Currently, special attention in social policy is paid to the integration of persons with disabilities into the educational process, accordingly, requirements are imposed on the qualification of a teacher in this aspect (Slepukhina et al., 2020).

### 3 Research Methodological Framework

The purpose of the study: to study the requirements imposed on the teacher, which constitute a social demand for education. Research objectives: to analyze the requirements of social customers for education; to identify the main directions of the teacher's work in accordance with the requirements.

During the research, theoretical methods were used – analysis of scientific literature, systematization of material on the research problem, empirical methods - questionnaires using Google forms.

The questionnaires (separately for parents and students) were aimed at collecting information about the requirements and expectations of respondents from the educational process and contained 10 questions each. The questionnaire questions were aimed at identifying the purpose of school education (from the point of view of parents and children), the content of extracurricular activities, expected expectations (from learning) / requirements (for learning).

Processing of the data obtained during the questionnaire was carried out by calculating the percentages between different answer options and grouping them in general directions.

The experiment was conducted in the 2020-2021 academic year. 470 parents and 625 students of municipal educational organizations of the city of Saransk (Republic of Mordovia, Russia): Municipal Educational Institution "Lyceum No. 26", Municipal Educational Institution "Gymnasium No. 23", Municipal Educational Institution Municipal Educational Institution "Lyceum No. 43" took part in it.

#### 4 Results and Discussion

Defining the role and place of the social demand in the implementation of educational activities, we should try to determine the meaning of the terms "state orders" and "social demand", since we constantly encounter these two positions when referring to education as a whole. It is possible to consider state orders as orders of the state for the provision of certain, in particular, educational services, addressed to educational organizations of various levels - from general education to higher educational institutions. In this case, the social demand is presented as a request from parents and employers. Mainly parents determine the trajectory of the development of general education, employers - higher educational organizations. Another point of view is also possible, following which it is impractical to separate state and social orders. In this case, the state orders act as part of the social demand. Let us dwell on this position in order not to limit the scope of the phenomenon under consideration.

Under the social demand for education, we will understand the expression of the interests of those parties whose needs are met in the course of the activities of an educational organization.

Let's determine who actually forms the social demand. All customers can be divided into two large groups – external and internal in relation to the education system.

We will refer the following to external social customers.

The first is the state as a social customer. This customer determines the global goals and directions of strategic development of the education system as a whole. The state embodies all its claims to the educational system in federal documents. The state needs highly educated, morally stable, initiative young people who are able to respond competently to the challenges of our time, predicting their possible consequences, mobile, dynamic, constructive, responsible.

The second is employers. The main requirement put forward by this social customer for education is the ability and desire for constant self-improvement, which should arise among representatives of the pedagogical community. Society needs people who can learn independently.

The third is public organizations. This customer is more interested in the personal qualities of a citizen of society, such as energy, independence, commitment, and not specific educational results.

Thus, the content of the social demand on the part of subjects external to the education system largely coincides. This applies equally to general education and vocational schools at all levels.

We will refer the following to internal social customers.

The first is the educational system. This social customer forms its vision of the result based on the regulatory documentation "imposed from above" by the state, spreading higher requirements by levels of education and diluting them with a mandatory "knowledge" component. As a result, another set of regulatory documents is obtained.

The second is the parents. Parents of students want their children to have solid knowledge, to be independent, responsible, conscientious and inquisitive.

The third is teachers. Unfortunately, there are not enough teachers-psychologists, teachers-educators, teachers-assistants in a modern school. But we have a whole army of specialized subject teachers who focus only on their discipline. For this reason, the "knowledge" component comes to the fore.

The fourth is students. Not such a large percentage of students, which we would like to see, come to school for knowledge. Children come for communication, help, out of curiosity, for company, they come because "it's necessary, we need to learn." They are more interested in the psychological component of the

educational process. However, over time, having a psychological background, students come to realize the need to have a certain amount of knowledge behind them.

It can be said that the content of the social demand from the internal subjects in relation to the education system also coincides.

From whatever side, external or internal to the education system, a social demand is formed, all vectors are directed at the teacher – his personality, his competence, his professionalism. A huge part of the requirements for education falls on the one who organizes the educational process from the inside. The requirements are not for the one who provides a material and technical base, manages the process of education at various levels, forms the content of each individual subject, but for the one who teaches. That is, all claims that may arise are carefully delegated to the teacher.

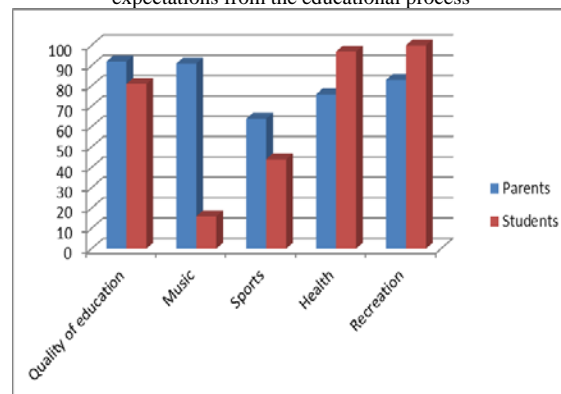
At the same time, a modern teacher should be not only a specialized subject teacher, but at least an educator (no one has canceled the educational component of the educational process) and a tutor (this direction has become especially relevant due to the introduction of distance learning).

Let's consider the educational requirements imposed by the main, in our opinion, social customers - parents and students.

A questionnaire using the Google Forms tool was conducted among 470 parents and 625 students of educational institutions of the city of Saransk of the Republic of Mordovia (Municipal Educational Institution "Lyceum No. 26", Municipal Educational Institution "Gymnasium No. 23", Municipal Educational Institution "Lyceum No. 43"). The purpose of the survey is to determine the requirements and expectations of respondents in relation to the educational process. Among the questions of the questionnaire for parents were the following: "Why is your child studying at school?", "What, besides studying, would you like your child to do?", "What worries you when you accompany your child to school?" Among the questions of the questionnaire for students, it is possible to distinguish those that were paralleled with the questions of the questionnaire for parents: "Why do you study at school?", "What, besides studying, do you want to do? What is the purpose?" "What do you expect from the school?"

The analysis of the questionnaires revealed several main areas accumulating the presented information (see Figure 1).

Figure 1 Main directions of respondents' requirements and expectations from the educational process



Source: compiled by the authors

Firstly, it is the quality of education. The following comments of parents were attributed to this point: "to be able to study at a prestigious university", "to have enough knowledge for a high-paying job", "to get high scores on the Unified State Exams", "to be defined in a life"; and comments of students: "to know a lot", "to win Olympiads", "to be not more stupid than others", "to get a higher education".

Secondly, music lessons. All variants related to musical culture were attributed to this item – from the ability to play musical instruments (guitar, saxophone and drums are especially popular among modern youth) to the ability to conduct a competent analysis of modern (less often classical) music.

Thirdly, sports. Parents, indicating sports in the questionnaire (it was clear from the context that they most likely meant physical education classes), advocated for the health of their children. The students also wanted to achieve certain results in this direction (especially in football, volleyball, swimming and wrestling) or, alternatively, "to have an attractive appearance."

Fourthly, the preservation and promotion of health. Some explanations are necessary on this point. Parents want to see their children healthy, and this is natural. But the care of school-age children about their somatic health is rather the exception than the rule. At the same time, the phrases "a respectful attitude", "I want to be treated well" and even "a comfortable psychological environment" took place in the questionnaires. Therefore, it was decided to attribute the physical and psychological state of the students to one issue.

Fifthly, the organization of recreation. As in the previous point, we will make some explanations. Parents, along with their children's studies, are also concerned about the organization of their rest: regime, nutrition, safety. Students are also interested in spending time with friends.

Analyzing the data obtained in the questionnaire, it can be stated that no matter how far the views of parents and students on education are, they practically coincide in the main thing – both of them need its high quality, which is the main and immutable requirement.

One of the components of their successful satisfaction is how much the teacher is able to maintain his competitiveness, the most important conditions of which are initiative, the ability to think creatively, to find non-standard solutions. It is necessary to have teachers who possess psychological and pedagogical knowledge, who are aware of the peculiarities of the development of schoolchildren at a certain age. The teacher should help the children to become independent and self-confident people.

Based on the data obtained, the following main directions of the teacher's work were identified: 1. To monitor regularly the quality of the educational process (82% of parents / 74% of students). 2. To activate and diversify extracurricular activities of children (76% of parents / 68% of students). 3. To monitor tirelessly the health of students (this direction is especially relevant in today's turbulent times) (85% of parents / 62% of students). 4. To pay constant attention to the psychological atmosphere in educational groups (74% of parents / 81% of students). 5. To organize a collective rest for children (66% of parents / 63% of students).

## 5 Conclusion

Thus, in the process of analyzing the scientific literature, systematizing the material on the issue of the requirements imposed on the teacher within the framework of the social demand, and processing the data obtained experimentally, the following conclusions can be drawn.

The transformation of the new version of the functioning of education presupposes the existence of a basis - a social demand, the mechanism of formation of which involves taking into account the needs of external and internal subjects in relation to the education system. In this regard, the social demand for education has an objective and subjective side.

Despite the heterogeneity of the content of the requirements for the activities of an educational organization and expectations of learning outcomes, people interested in the stable development of education and a decent future are aware of the range of initial tasks of education, as evidenced by the results of the survey:

quality education, music and sports, preservation and strengthening of physical and psychological health, recreation. The main directions of the teacher's work, according to respondents, should be: the organization of students' activities for the assimilation of knowledge, the formation of skills within the framework of regular and extracurricular activities; the creation of pedagogical conditions for intellectual, moral and physical improvement, health promotion, organization of free time.

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**Primary Paper Section: A**

**Secondary Paper Section: AM, AO**

## ACQUISITION OF SOCIAL EXPERIENCE BY JUNIOR SCHOOLCHILDREN IN A PROVINCIAL SOCIAL ENVIRONMENT

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Abstract: This paper explores the problem of social experience acquisition by the junior schoolchildren in a provincial social environment. The authors review various approaches to defining the key research concepts, describe the main characteristics of social experience of the junior schoolchildren in the context of a provincial society, analyze the results of a diagnostic study to assess the level of social experience acquired by the junior schoolchildren. Testing of the identified pedagogical conditions (implementation of the extracurricular activity programs; use of various organizational forms of socially oriented activities; activation of interactions between the subjects of educational relationships) has proven their effectiveness.

Keywords: junior schoolchild, socialization, social experience, knowledge about social reality, social skills, acquisition of social experience.

### 1 Introduction

Against the backdrop of transformations in the modern society, it becomes increasingly urgent to develop subjective qualities of personality, which help to handle various problems: from everyday life issues to the worldview attitudes in the life situations requiring a vast store of social knowledge, skills, abilities and creative potential. In connection therewith, research into the process of acquisition of social experience, which plays an important role in the social development of personality of junior schoolchildren, takes on particular significance. Children of this age group are capable of gaining elementary social experience, which will later become the foundation for their social development, behavior in situations of positive and negative external influence; strategic pattern for building personal relationships and relationships with the society as a whole.

However, presently the problem of the influence of the provincial society on the result of socialization of the junior schoolchildren remains insufficiently studied. Specific characteristics of a provincial society include a combination of economic, socio-cultural, psychological-pedagogical conditions shaping the values and norms of this community, specific features of intercultural and interpersonal interaction, social partnership between the subjects of educational relationships, etc.

General education institutions charged with a task to neutralize the negative influences of society, have a rich potential to create conditions (a process of establishing interpersonal and business contacts between children and teachers becomes more intense; favorable conditions for cooperation, organization of joint activities and communication, creative activities of teachers and children of different ages; priority of friendly and trusting relationships between teachers and students, etc.) for successful acquisition by junior schoolchildren of social experience in a provincial social environment.

This implies the need for a comprehensive study of the optimal ways to maximize a positive social influence on junior schoolchildren and the tapping of the socializing potential of the modern educational space in a provincial society, which makes our study highly relevant.

### 2 Literature Review

At the present stage in the pedagogical science development, the problem of socialization is examined not only from the angle of procedural characteristics (Aguayo et al., 2021; Dodge et al., 1994; Joan & Davidov, 2010; Wichmann et al., 2021) but also from the angle of its result expressed in a certain amount of social experience which predetermines how successfully a personality interacts with the surrounding social reality. Special features of development of junior schoolchildren are discussed in the works of M. V. Antonova, I. B. Buyanova, S. N. Gorshenina, I. A. Neyasova, T. I. Shukshina (2019); N. V. Kuznetsova, S. V. Maslova, O. I. Chiranova, L. A. Yankina (2020). Special features of socialization at different age stages and socialization of children with special educational needs were explored by E. V. Bartsaeva, N. V. Ryabova (2020), L. P. Karpushina, I. S. Kobozeva, N. I. Chinyakova, Yu. V. Velichko (Kobozeva et al., 2020), K. E. Cherry, E. D. Gerstein (2021), E. V. Zvoyleko, S. A. Kalashnikova, T. K. Klimenko (2016), G. G. Khubulava (2017), D. K. Tanatova, I. V. Korolev, M. V. Nevskaya, L. R. Tairova (2018).

Younger school age is an important age stage in the social development of personality, as it is a period when social norms are actively internalized. As stated in a series of studies (Bartsaeva, 2020; Golovneva & Daminova, 2016; Daminova & Suleimanova, 2017; Mitina, 2011; Khasanova, 2019), the specific features of social experience acquisition by junior schoolchildren are manifested in the following: development of the techniques and skills of productive learning, "the ability to learn"; emergence of self-control, self-fulfillment and self-regulation skills; establishment of new social relationships, strong friendships, intensive development of value orientations, etc. The modern research elucidates the methodological foundations of social experience acquisition by junior schoolchildren, various aspects of targeted work with junior schoolchildren (Bezuglova, 2014; Bykova, 2020; Kolesnikova, 2017), facilitating formation of the content characteristics of social experience, teaching technologies, methods, techniques and means of providing social experience to junior schoolchildren.

The acquisition of social experience by junior schoolchildren occurs under the influence of certain external socio-cultural conditions. In their works, the researchers (Aryabkina et al., 2019; Yevtushenko, 2010; Shukshina et al., 2017) reveal the mechanisms of provincial society influence on the acquisition of social experience by children of different ages. In a provincial social environment, a child has potentially wide opportunities to choose the circle of communication, the system of values, the opportunities for self-fulfillment.

The analysis of psychological and pedagogical literature has led us to defining "social experience" as a result of cognitive and practical activity, expressed in the accumulated knowledge about social phenomena, social skills and behaviors, the unity of a positive attitude towards reality and the ability to express this attitude in everyday life, proactively participate in the transformation of social reality.

### 3 Research Methodological Framework

The purpose of this research was to identify and test the pedagogical conditions facilitating effective acquisition of positive social experience by the junior schoolchildren in a provincial society.

This purpose was accomplished through the following objectives: to analyze the main approaches to the problem of social experience acquisition by junior schoolchildren in a provincial society; to determine the initial level of social experience of junior schoolchildren living in provincial society; to assess the effectiveness of the created pedagogical conditions

for facilitating the acquisition of social experience by junior schoolchildren in a provincial society.

The experiment lasted from 2018 until 2021. The experimental base was Lyceum N 26 and Secondary General Education School with In-Depth Study of Selected Subjects N 30 in Saransk. The experiment involved 196 junior schoolchildren (3rd year primary school students).

The research employed the following methods: analysis, generalizations based on review of psychological and pedagogical literature, pedagogical experiment, questionnaire survey, testing, qualitative and quantitative processing of the research findings.

The following diagnostic tools were used to reveal the current level of social experience of junior schoolchildren at the ascertaining stage of our experiment and to measure the effectiveness of the tested pedagogical conditions facilitating successful acquisition of social experience by children of primary school age in a provincial social environment: the authors' method "An Unfinished Sentence", "Making a Dictionary" (T. P. Gavrilova); the projective method "The Unfinished Stories" (T. P. Gavrilova), the method for exploring the emotional-value component "What is Good and What is Bad" (Gavrilova, 2005); "My Black and White Portrait", "A Fan" (O. S. Bogdanova). This diagnostic toolkit helped us to reveal the age-specific features of social experience acquisition by the junior students, taking into account the conditions of a provincial society.

#### 4 Results and Discussion

Structurally the social experience of junior schoolchildren may be represented as a combination of the following components:

1. The cognitive component is expressed by the knowledge of social reality (rules of building relationships with society and own self; knowledge of the culture of conduct in public places; ideas about the variety of objects and phenomena in nature and society, their properties, qualities and states; basic social concepts, their meaning; elementary knowledge of culture, history of native land and country);
2. The activity component implies the manifestation of social skills and abilities (compliance with the rules of conduct in society; ability to assess own behavior and behavior of others; ability to resolve conflicts with others independently and fairly; ability to plan own actions);
3. The emotional-value component is manifested in the ability to manage own feelings and emotions; ability to learn to perceive own feelings consciously and express them in a way understandable for others; ability to express own views, thoughts, emotions in a form understandable by others; ability to see positives and negatives in the relationship; ability to care about loved ones, be sensitive to the feelings of others, etc.;
4. The reflexive component is expressed in the ability to carry out reflexive activity, to solve elementary problematic social problems and situations; to plan and forecast own activities; to adapt to the changing environment, to approach the solution of social situations creatively; ability to apply knowledge and skills in a new life situation.

For identifying the initial level of social experience among the children of primary school age living in a provincial society, the ascertaining stage of the experiment was conducted over a time space from March till June 2020. This stage of the experiment involved 97 junior schoolchildren in the control group and 99 junior schoolchildren in the experimental group from the general education institutions Lyceum N 26 and Secondary General Education School with In-Depth Study of Selected Subjects N 30 in Saransk. The level of social experience of junior schoolchildren living in a provincial society was investigated through the lens of the indicated components with the help of the following diagnostic tools (the cognitive component - author's method "An Unfinished Sentence", "Making a Dictionary" (Gavrilova, 2005); the activity component - the projective

method "Unfinished Stories" (T. P. Gavrilova), (Shchetinina, 2000), "Ethical Tasks" (T. P. Gavrilova) (Gavrilova, 2005); the emotional-value component - "What is Good and What is Bad" (L. M. Friedman), the technique "Choose a Picture" (O. E. Shapovalova) (Gavrilova, 2005) and the reflexive component - "My Black and White Portrait", "A Fan" (O. S. Bogdanova) (Gavrilova, 2005).

According to the results obtained at the ascertaining stage of the experiment the junior schoolchildren were divided into three groups with high (19.6% (CG) and 20.2% (EG)), medium (45.3% (CG) and 46.5 (EG)) and low (35.1% (CG) and 33.3% (EG)) levels of social experience.

Children of junior school age with a high level of social experience have extensive information about the social side of life, show a desire to deepen their social knowledge, are ready for social action, are able to analyze their own behavior and actions of others, to build positive emotional relationships, show a high level of creative and intellectual activity; are able to analyze their actions, critically assess the actions contradicting the generally accepted norms and rules.

Junior schoolchildren with a medium level of social experience have gaps in the structure of social knowledge, when dealing with the problematic social situations they expect help from adults or peers, when choosing a line of behavior, they decide in their own favor, trying not to harm others, show situational cognitive interest in the surrounding social reality, have no aspirations for making creative transformations.

The third group of primary school students, with a low level of social experience, have an insufficient amount of social knowledge, do things without clear motivation, their social assessments are characterized by the erroneous judgments, show negative emotions when difficulties arise, have a tendency to reproductive practical activities.

Analysis of the research results helped to reveal the following special features of social experience acquisition by the junior schoolchildren with account of their age in a provincial social environment. The level of awareness of the basic social notions, concepts, knowledge increases with age; the content side of the cognitive component of social experience changes due to the growing number of attributes and categories included in the active vocabulary and as a result of clarification of already known information, while new formations are not yet integrated into a single system, remaining isolated components of the social sphere of personality. At this age stage, the circle of relationships expands, their qualitative characteristics change, a simple emotional response to the action typical for first graders, by the third grade becomes a conscious evaluation and a stable emotional attitude, but the emotional-value component does not yet reach the high level of development.

Based on the results obtained in a study, purposeful work for facilitating acquisition of social experience by junior schoolchildren was organized with account of the conditions of a provincial society.

The main focus of this work was to implement the program of extracurricular activities "Me and the Surrounding World" in the experimental group in Secondary General Education School with In-Depth Study of Selected Subjects N 30 in Saransk, which helped to test the first pedagogical condition.

The main objectives of the program of extracurricular activities were: to provide understanding of the phenomena from the social sphere of life and a holistic generalized "picture of the world"; to draw attention to the significance of universal human values and create conditions for developing a positive emotional attitude toward people; to develop the skills of communication in a group of peers; to develop the skills of analyzing own actions and to find non-standard solutions to social situations.

The structure of the program includes the following thematic blocks: "My Home, My Family and Friends", "My School, My

Friends", "My City, My Homeland", "Good Magicians of our City", "The World of Good Deeds and Acts of Kindness". Topics of the lessons allow gradually introduced the content of the main structural components of social experience according to the concentric principle.

The second pedagogical condition was fulfilled through the use of different forms of socially-oriented activities, providing the opportunity to form the structural components of social experience of junior schoolchildren taking into account the specifics of a provincial society environment.

The use of socially-oriented activities for facilitating acquisition of social experience by junior schoolchildren was aimed at reproducing different situations from life; igniting personal interest in children and providing them understanding of social significance of the results of their activities; encouraging initiative of the junior schoolchildren in planning social activities, discussing various options to participate in them, with due responsibility, self-control and evaluation.

The fulfillment of the third pedagogical condition was intended to activate the interactions between subjects of educational relations in the process organized for facilitating acquisition of social experience by junior schoolchildren in a provincial social environment.

The teacher's position in relation to a junior schoolchild in the context of fulfillment of this pedagogical condition implies: expressing value attitude to the student's personality, showing interest to suggestions, wishes, opinion of each student, evaluating the actions of junior schoolchildren relating to the specific situation, accentuating attention on the positive personal qualities of students and their development.

The subjective position of a junior schoolchild in interactions with the teacher implies: independence - the ability to act independently, to make decisions, to show own initiative and to set goals and identify ways to reach them; proactive approach, the willingness of a junior schoolchild to expand the scope of their social activities and communication, to act beyond the requirements, the situation, the role expectations and preferences.

Effectiveness of the fulfilled pedagogical conditions was estimated by examining the level of social experience by junior schoolchildren at the control stage of our experiment. The control stage of the experiment (February-June 2021) included junior schoolchildren from the control and experimental groups. The diagnostic tools were used to find out effectiveness of the tested pedagogical conditions. 34.3% of junior schoolchildren from the experimental group have a high level of social experience which manifested in the deep knowledge of the social reality, socio-moral norms and rules of behavior; the ability to observe the rules and norms of behavior, to analyze own behavior and actions of other people, show confidence and friendliness in the immediate communication with peers and adults; are ready to be proactive and show initiative in the conditions of free choice in socio-moral situations; make positive decisions in the changing interaction context, etc.; 57.6% of children demonstrated the medium level; 8.1% have the low level of social experience. In the control group, some insignificant changes occurred, the low level was shown by 31%, the medium level - by 47.4%, and the high level - by 21.6% of children.

## 5 Conclusion

The conducted research led us to the following conclusions:

The acquisition of social experience by junior school students means perception, accumulation, enrichment, comprehension, acceptance in the facilitating pedagogical conditions of knowledge about social phenomena, social skills and abilities, experience of emotional relationships, experience of creative activity. The key goal of the primary general education becomes not only to carry out the targeted work for shaping positive

social experience, but also to neutralize the negative external influences of social environment on the process of learning.

According to the results obtained at the ascertaining stage of our experiment, we may conclude that the majority of junior schoolchildren have a low level of social experience, which triggered the need to identify and test the facilitating pedagogical conditions for boosting the effectiveness of this process, taking into account the characteristics of a provincial society. The main facilitating pedagogical conditions were:

- implementation of the program of extracurricular activities "Me and the Surrounding World";
- use of various forms of socially-oriented activities seeking to form the structural components of social experience in junior schoolchildren;
- activation of interactions between subjects of educational relations in the process organized for facilitating acquisition of social experience by junior schoolchildren in a provincial social environment.

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**Primary Paper Section: A**

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## PSYCHOLOGICAL CHARACTERISTICS OF WOMEN WITH BREAST CANCER IN REMISSION

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**Abstract:** The aim of the research is to study the psychological characteristics of women with breast cancer during remission. The sample of subjects consisted of two clinical groups: women with breast cancer diagnosed before the study and who were in remission for 6 months or more at the time of the study. In the course of the study, it was found that women with breast cancer, depending on the stage of the disease (onset of the disease or remission), have different severity of psychological characteristics (basic beliefs, coping behavior methods, locus of control, resilience, life orientation) relative to each other and relative to the norms of questionnaires. The conducted research enables us to outline the prospects for further research.

**Keywords:** breast cancer, remission, basic beliefs, coping behavior, resilience, locus of control, life orientation.

### 1 Introduction

There is an increase in oncological diseases all over the world. Cancer is considered the main cause of death and an important obstacle to increasing life expectancy in all countries of the world. According to the analytical forecasts of the International Agency for Research on Cancer (IARC), by 2040 the rate of new cases of malignant neoplasms will exceed 28.4 million, assuming that the figures estimated in 2020 will remain unchanged (Ferlay et al., 2020). According to experts of the International Agency for Research on Cancer, 19.3 million new cases of cancer and approximately 10 million deaths from cancer were registered worldwide in 2020 (Ferlay et al., 2020). Due to the morbidity in 2020, breast cancer (11.7%) surpassed lung cancer (11.4%) as the most commonly diagnosed cancer in the world, followed by rectal cancer (10%), prostate cancer (7.3%) and stomach cancer (5.6%). Lung cancer is the leading cause of cancer death in 2020 (18% of deaths), followed by cancer of the rectum (9.4%), liver (8.3%), stomach (7.7%) and breast (6.9%) (Ferlay et al., 2020).

Among the female population of the world, breast cancer is the most commonly diagnosed cancer and the main cause of death from cancer. Among women, breast cancer accounts for 1 in 4 cancer cases and 1 in 6 cancer deaths, ranking first in morbidity in the vast majority of countries (159 out of 185 countries) and in mortality in 110 countries (Sung et al., 2021).

The World Health Organization claims aging and population growth, as well as features of socio-economic development, the leading reasons for the increase in the number of diseases with malignant neoplasms (Ferlay et al., 2020). It is noted that with the growth of socio-economic well-being of the country, the risk of infectious cancer is reduced, but at the same time there is an increase in the number of tumors based on hormonal disorders and poor nutrition.

In Russia, according to the International Agency for Research on Cancer, the leading place in morbidity in 2020 is occupied by malignant neoplasms of the large intestine (13.1%), followed by breast cancer (12.7%), lung cancer (10.8%), prostate cancer (7.9%) and stomach cancer (6.3%). Among men, lung cancer is the most common in terms of morbidity in 2020 (18%), among

women – breast cancer (24.4%). In terms of mortality rates in 2020, lung cancer (17.4%), stomach cancer (8.9%), intestinal cancer (8.1%), breast cancer (7.4%), pancreatic cancer (6.6%) ranks first in Russia (Ferlay et al., 2020).

According to the presented statistics, breast cancer is the most common among the female population in the world and Russia. As risk factors for the development of breast cancer, Russian researchers identify genetic burden, hormonal and immunological status of women, age of women, deterioration in the level and quality of life of the population, improvement in the quality of diagnosis and accounting of malignant neoplasms, reproductive factors (regularity of the menstrual cycle, the number of births, breastfeeding, the presence of abortions and miscarriages), exposure to ionizing radiation, alcohol consumption on a daily basis in combination with other negative risk factors and others (Tarabrina, 2014; Sukhareva et al., 2017; Letyagin et al., 2006; Chissov et al., 2012; Merabishvili, 2007; Egorova & Shaplygin, 2013).

### 2 Literature Review

Analyzing foreign studies, we can find several groups of factors associated with the risk of breast cancer. Considering the reproductive factors of breast cancer development, Zhou (2015) and colleagues note that women who have not given birth have about twice the risk compared to women who have given birth to three or more children. The authors also emphasize the relationship between the later age of the first birth (after 35 years) and the occurrence of breast cancer in comparison with women who gave birth before the age of 20 (Zhou et al., 2015). Breastfeeding, especially long-term, can lead to a reduction in the risk of breast cancer: the incidence of cancer decreases by 4.3% for every 12 months of breastfeeding (Collaborative Group on Hormonal Factors in Breast Cancer, 2002). A number of researchers note that menstrual characteristics (early age of menarche, late age of menopause and type of menopause) can act as markers of the risk of developing breast malignancies (Collaborative Group on Hormonal Factors in Breast Cancer, 2012). Evidence linking the use of oral contraceptives by a woman with the occurrence of breast cancer was described in a worldwide epidemiological study of the joint Group on Hormonal Risk Factors for Breast Cancer (Collaborative Group on Hormonal Factors in Breast Cancer, 1996). Colditz (1998) found a link between a woman's high height in adolescence and the development of breast cancer in adulthood. The authors explain this relationship, among other things, by the fact that human height is associated with the age of menarche, and menarche is inversely related to the risk of breast cancer (Collaborative Group on Hormonal Factors in Breast Cancer, 2012).

The relationship between body mass index, obesity and breast cancer risk has been studied in a number of researches (Renehan et al., 2008; Suzuki et al., 2009; Vrieling et al., 2010). Research data suggest that increased physical activity reduces the risk of breast cancer: a 25% reduction in average risk was found for the most physically active women compared to the least active women (Zhou et al., 2015). A statistically significant increase in the risk of breast cancer (from 8% to 17%) is associated with a sedentary lifestyle (Shen et al., 2014; Zhou et al., 2015).

Revealing the genetic risk factors for breast cancer, the authors note that women in whose family there were cases of breast cancer in their closest relatives have a 1.5-2 times greater risk of developing breast cancer (Familial Breast Cancer Working Group, 2001). An increased risk of breast cancer was observed in those who were exposed to radiation at any age.

Considering endogenous factors of breast cancer, many researchers emphasize that endogenous estrogens increase the risk of breast cancer: there is a direct relationship between the level of estrogen in the blood and the risk of developing malignant neoplasms (Key et al., 2002, 2013; Yager &

Davidson, 2006; Zhang et al., 2013; Colditz, 1998; Thomas et al., 1997; Zanetta et al., 2000). Progesterone plays a key role in breast development, and according to experimental data, progesterone metabolites can both reduce and increase the risk of breast cancer (Wiebe, 2006; Wiebe et al., 2010).

Additional markers of breast cancer risk include the use of hair dye (Takkouche et al., 2005), bras (Chen et al., 2014), deodorants (Mirick et al., 2002) and breast implants (Lipworth et al., 2009). A potential risk factor for the occurrence of malignant neoplasms of the mammary glands is occupational: exposure to chemical compounds (Mikoczy et al., 2011), electromagnetic fields (Chen et al., 2010), night shift employment with subsequent suppression of melatonin production (He et al., 2015). These risk markers are considered by the authors as assumptions and require additional research.

Despite the growing interest in the problem of breast cancer in women, the range of psychological phenomena studied in this area is quite limited. It is worth noting that the works of P. Revidi (1983), H.J. Eysenck (1994), L. Temoshok (1987), Y. Chida (Chida et al., 2008), I.G. Malkina-Pyh (2008), M.G. Ivashkina (2016), N.V. Tarabrina (2014) and others describe the psychological prerequisites for the development of malignant neoplasms. As risk factors for the occurrence of breast cancer, the authors identify restraint in the manifestation of emotions (Revidi, 1983; Temoshok, 1987; Fasano et al., 2020), pronounced feelings of guilt and self-doubt (Revidi, 1983), external locus of control and low importance of the value of health (Ivashkina, 2016), unproductive coping strategies (Chida et al., 2008; Fasano et al., 2020), feelings of hopelessness and self-helplessness (Temoshok, 1987), rigidity of attitudes (Revidi, 1983), feelings of despair and depression (Revidi, 1983) and others.

The indicated risk factors for breast cancer (reproductive, genetic, psychological, hormonal, lifestyle-related, etc.) are justified by researchers using theoretical conclusions, and/or statistical, and/or empirical, and/or experimental data and allow, based on the available information, to identify the relevance of the problem of breast cancer development today.

Breast cancer, in addition to the threat to physical health and life, differs in the strength and intensity of the traumatic effect, which consists in the fear of losing femininity, which is associated with causing a cosmetic defect. Also, this disease can be perceived as a factor that disrupts a person's socio-psychological adaptation and affects the relationships with others. J. Fasano et al. (2020) emphasize the role of psychological characteristics in coping with stress caused by a long treatment process. H.J. Eysenck (1994) notes that a person with such personal characteristics as self-sacrifice, conformity, suppression of anger, manifestation of anxiety and anxiety, and others, in case of cancer, faces a faster death than people with other personal characteristics.

Speaking about the study of the psychological characteristics of patients with oncopathology with different course of the disease, we can note the study of M.P. Ershova (Aralova & Ershova, 2005). The author investigated the features of personal development of boys and girls with cancer pathology with different remission periods and notes that the remission period significantly determines the personal characteristics of boys and girls with cancer diagnosis. At the same time, the most psychologically stressful period is from 5 to 10 years after direct treatment. V.A. Chulkova and E.V. Pestereva (2015) studied the peculiarities of psychological adaptation to the disease of patients with malignant lymphomas at various stages of the disease (before treatment, during primary treatment, during the treatment of relapses, remission).

### 3 Research Methodological Framework

Based on the urgency of the problem of the prevalence and development of breast cancer, the existing prerequisites for the study of the psychological characteristics of patients with breast cancer with different course of the disease, the purpose of this work was formulated: to study the psychological characteristics

of women with breast cancer during remission. The realization of this goal will make it possible to subsequently identify psychological factors that contribute to improving the long-term effectiveness of treatment. Psychological characteristics of women in remission can act as a criterion for predicting the course of the disease.

In accordance with the purpose of the study, empirical tasks were identified. Firstly, to diagnose psychological characteristics (basic beliefs, coping behavior, locus of control, resilience, life orientation) in women with breast cancer in remission and women with diagnosed breast cancer at the time of the study. Secondly, to compare psychological characteristics (basic beliefs, coping behavior, locus of control, resilience, life orientation) in women with breast cancer during remission and at the stage of diagnosis with the normative indicators of the studied characteristics.

The general scheme of empirical research was determined by the purpose of the work. In accordance with the purpose of the study, the sample consisted of two clinical groups. Firstly, women with breast cancer diagnosed before the study and in remission for 6 months or more at the time of the study. The criterion for inclusion of patients in the research sample was the onset of remission during the disease and the duration of this remission – 6 months or more. Complete remission (CR; complete remission) – the complete disappearance of all tumor manifestations of the disease, confirmed by the same research methods that revealed these changes, and, if necessary, additional research methods. Complete remission is established after the end of treatment and only if it persists for at least four months after the end of the program. Secondly, women with diagnosed breast cancer at the time of the study who are under the supervision of an oncologist from the moment of diagnosis. The criteria for inclusion of patients in the study were: the presence of a malignant tumor originating from the epithelium of breast tissue (breast cancer) of stage I, II, III and IV with a moderately differentiated variant of the tumor, hormone-dependent therapy, being under the supervision of an oncologist from the moment of diagnosis up to 6 months.

The basis of the empirical research was the Chelyabinsk Regional Clinical Center of Oncology and Nuclear Medicine, Chelyabinsk. A total of 289 women participated in the study, 98 of them in remission aged 39 to 79 years, average age 57 years, median 58 years; at the stage of diagnosis, 191 people aged 26 to 80 years, average age 55.5 years, median 57 years.

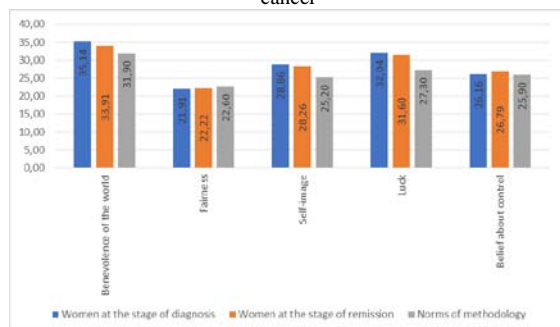
The research methods were questionnaire survey, testing method, methods of mathematical data processing. The testing and questionnaire survey were conducted in an individual form. The questionnaire allowed us to collect data on socio-demographic indicators. The following research methods were used: World assumption scale (R. Janoff-Bulman, adaptation by M.A. Padun, A.V. Kotelnikova (2008)), the Life Orientation Test (Scheier M.F., Carver C.S., adaptation by D.A. Tsiring, K.Yu. Evnina (2013)), "Ways of Coping Questionnaire" (R. Lazarus, S. Folkman, adaptation by T.L. Kryukova, E. V. Kuftyak, M.S. Zamyshlyayeva) (Kryukova, 2010), Hardiness Survey (S. Maddi, adaptation by D. Leontiev) (Leontiev & Rasskazova, 2006), Subjective control test questionnaire (J., Rotter, adaptation by E.F. Bazhin, S.A. Golyukina, A.M. Etkind (1984)). Mathematical methods of statistical data processing are presented by methods of descriptive statistics. Methods of primary descriptive statistics are numerical indicators that characterize the features of the distribution of the trait measured in the sample, in particular, reflecting the level of severity of the measured property and the degree of its variability. In this study, average indicators were used to assess the difference in the severity of psychological characteristics of the subjects in comparison with the norms of the methods.

### 4 Results and Discussion

In the course of the study of the psychological characteristics of women during remission, differences in a number of indicators

were revealed. Figure 1 shows the results of the World assumption scale (Padun & Kotelnikova, 2008) in women at the stage of diagnosis, during remission, as well as the norms of the methodology used.

Figure 1 Features of world assumption of women with breast cancer



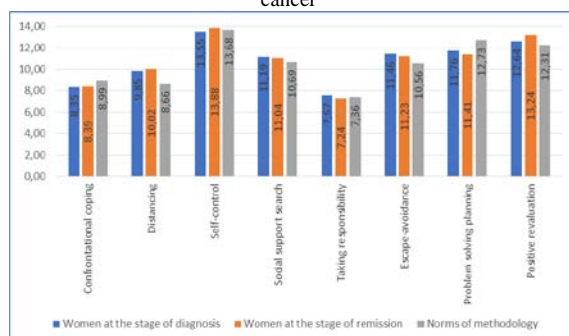
Source: compiled by the authors

According to the data obtained, women with an oncological diagnosis, both at the stage of its diagnosis and during remission, have a more pronounced belief about the benevolence of the surrounding world. Respondents expressed a belief about the security of trust in the world around them, that the people around them are generally kind and trustworthy. The "Self-image" belief, implying the subject's confidence that he is worthy of love and respect, and the belief about his own luck are more pronounced in women with breast cancer relative to the norms of the questionnaire.

The conviction of women with breast cancer in remission in the benevolence of the world and that they were lucky, on the one hand, helped them to cope productively with the situation, on the other hand, is associated with a favorable course of the disease. The onset of remission for patients with an oncological diagnosis, as a rule, is the desired outcome of the disease, and enables to be sure of good luck and that the world is favorable. The expression of beliefs about the benevolence of the world, the value and significance of one's self, and luck in women at the stage of diagnosis can serve as a predictor for the further onset of remission.

Next, we analyzed the ways of behavior in difficult life situations in the studied groups using the questionnaire of R. Lazarus (Kryukova, 2010) (Figure 2).

Figure 2 Features of coping questionnaire of women with breast cancer



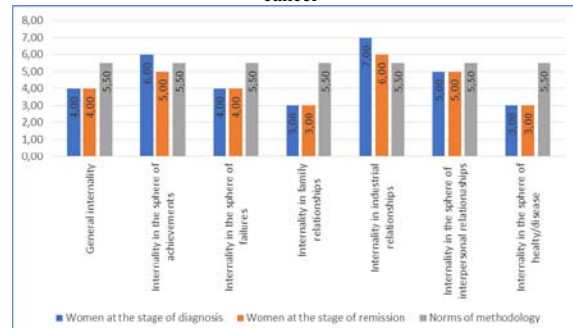
Source: compiled by the authors

According to the data obtained, women in remission and at the stage of cancer diagnosis use the "Distancing" coping strategy more often compared to the norms of the questionnaire. This method of coping involves the application of cognitive efforts in order to reduce the significance of a stressful situation. Distancing allows to separate oneself from the situation, distract oneself from it, switching the attention to other aspects of life. To a lesser extent, relative to the norms of the methodology, the strategy of "Problem solving planning" is expressed in women who participated in the study. An analytical approach to solving

the problem, efforts to change the situation are less often used by women in the situation of cancer.

The results of the study of the level of subjective control (Bazhin et al., 1984) in women in remission and at the stage of diagnosis are presented in Figure 3.

Figure 3 Features of the locus of control of women with breast cancer

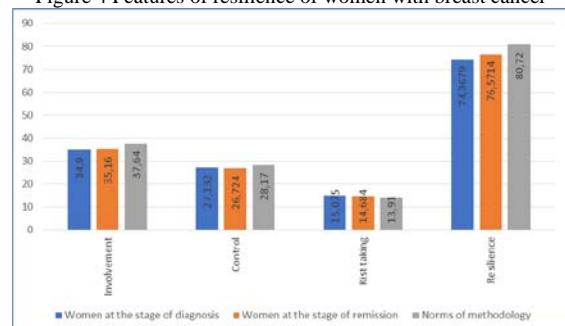


Source: compiled by the authors

Analyzing the data obtained, we can note that women in remission and at the stage of diagnosis are characterized by externality in the field of failures, that is, they consider them the result of bad luck and attribute responsibility for the failures to other people. Also, the respondents are characterized by externality in family relationships: women single out their partners as the reason for the events taking place in the family, not themselves. Regarding health and illness, women with an oncological diagnosis are also more characterized by externality compared to the norms of the questionnaire. The subjects believe that the state of health is the result of chance, luck, a combination of external circumstances, and believe that recovery depends more on the actions of other people and doctors. In the field of industrial relations, women with breast cancer are characterized by internality, they recognize that their actions and efforts are an important factor in career growth, organization of their own activities, and relationships in a team.

The results of comparing the indicators of Hardiness survey (Leontiev & Rasskazova, 2006) of respondents in remission and at the stage of diagnosis are shown in Figure 4.

Figure 4 Features of resilience of women with breast cancer

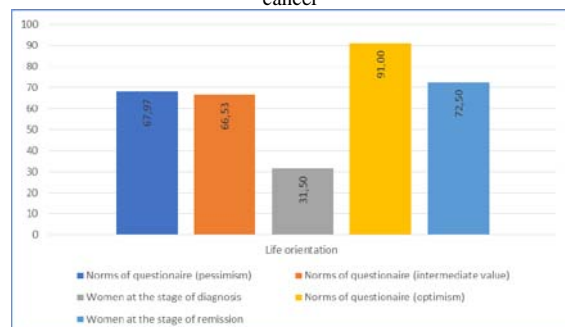


Source: compiled by the authors

According to the data obtained, the level of resilience and its indicators in subjects with an oncological diagnosis is within the normal range. There are small differences in the indicators of involvement and the overall level of resilience. Involvement implies that a person enjoys his own activities, is involved in what is happening and feels confident. The opposite of involvement is the feeling of rejection. Resilience is a system of a person's beliefs about himself, about the world and relationships with him. The high severity of resilience and its components contributes to productive coping with stressful life situations and reducing internal tension.

Next, we analyzed the features of life orientation (Tsiring & Evnina, 2013) of women with breast cancer in remission and at diagnosis (Figure 5).

Figure 5 Features of the life orientation of women with breast cancer



Source: compiled by the authors

Diagnostics of life orientation allows us to identify the orientation of the subject towards optimism, positive expectations from the future or towards pessimism, that is, negative expectations from the future. Comparing the data obtained with the characteristics of the questionnaire, we can note that women with breast cancer were diagnosed with intermediate values in the severity of optimism-pessimism, regardless of the features of the course of the disease (remission or the stage of diagnosis).

To date, cancer remains one of the most prognostically unfavorable diseases worldwide, despite the constant search for scientific methods of treating this pathology. Such conclusions are based on a statistical assessment of cancer survival and the probability of life preservation over the past 10 years. Such a situation shows the need for a comprehensive, interdisciplinary study of this problem and consideration of other possible causes of this pathology, including consideration of psychological factors on the course of the disease and its outcome (survival).

This study is devoted to the study of psychological characteristics in women diagnosed with breast cancer. Women in remission and women diagnosed with breast cancer who do not currently have information about the further course of the disease were selected as the study groups. These groups were selected in order to determine the psychological factors contributing to improving the long-term effectiveness of treatment. The results obtained in this study allow us to put forward two assumptions that require additional empirical verification. Firstly, the revealed psychological features in women with breast cancer can act as predictors of cancer pathology. Secondly, the detected psychological features can act as a criterion for predicting the course of the disease (the onset of remission). To date, work is underway to verify the assumptions made by continuing cooperation with women who participated in this study at the stage of diagnosis. At the moment, we are studying the features of the course of their disease, as well as the relationship with psychological characteristics during a longitudinal study designed for three years.

## 5 Conclusion

Currently, there are only a small number of studies that reveal the specific psychological characteristics of patients with breast cancer. The conducted research makes it possible to identify the specifics of the severity of psychological characteristics of women with cancer diagnosis and outline the prospects for further research. Thus, women with breast cancer, regardless of the course of the disease (remission or the stage of diagnosis), expressed beliefs about the benevolence of the world, the value and significance of their own Self and luck. In women with cancer, the coping strategy of "Distancing" prevails, and to a lesser extent "Problem solving planning" is expressed. Women in remission and at the stage of diagnosis are characterized by

externality in the field of failures, in family relationships. Regarding health and illness, women with an oncological diagnosis are also more characterized by externality compared to the norms of the questionnaire. The resilience indicators of respondents with breast cancer are within the normal range. Optimism-pessimism in women with an oncological diagnosis, regardless of the features of the course of the disease (remission or the stage of diagnosis), are expressed at an average level.

The data obtained can serve as a scientific basis for the development of a system of psychological support for patients with malignant neoplasms. Taking into account the impact of psychological factors on the course of the disease, the lack of psychological support services in oncological medical institutions indicates the need for scientific research aimed at studying the psychological determinants of the course of the disease, their impact on the nature of the response to antitumor treatment.

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**Primary Paper Section:** A, F

**Secondary Paper Section:** AN, FD

## THE USE OF DIGITAL EDUCATIONAL ENVIRONMENT IN OVERCOMING TEACHER'S DIDACTIC DIFFICULTIES

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Abstract: The article notes that at the present stage of the development of the higher education system, there is a problem of training competent specialists who are able to react swiftly to emerging difficulties in professional activity, identify them and solve them promptly. According to the documents on education, the criteria for assessing the quality of a teacher are readiness to solve didactic tasks, the presence of didactic skills, abilities, etc. The authors believe that in pedagogical science there is a problem of finding ways to overcome didactic difficulties that arise in the implementation of educational and training activities of a teacher. The article presents the developed practice-oriented study assignments for students, describes the results of a pedagogical experiment.

Keywords: digital educational environment, didactic difficulties, didactic preparation, teacher, educational task.

### 1 Introduction

The increased interest in the use of the digital educational environment in education is due to the possibilities of open access to information, the organization of a system of information and communication interactions, the implementation of productive joint educational activities through the placement and constant exchange of didactic resources. In this regard, the study of the features of the use of the digital educational environment, the study of the specifics of its influence on the personal and intellectual development of the teacher, the identification of educational and developmental opportunities of the digital space in overcoming the didactic difficulties of the teacher becomes particularly relevant.

In addition, the rapid modernization of general education has led to the orientation of the teacher's activity on the personality-centered side of the student. This fact in modern education dictates the introduction of various innovative technologies in education and leads to a number of didactic difficulties for teachers in carrying out educational and training activities.

A number of researchers (Orkibi, 2012; Babanskii, 1977; Vershlovskii, 1988) note the relatively slow use of the digital educational environment in the educational process of an educational organization, since such an environment is not fully adapted to the education system and the implementation of educational and training activities in it requires special training from the teacher, and the development of the Internet is moving in the direction from technology to content. For each teacher and student, the use of the digital environment is determined by individual needs and personal experience of online activities.

The study of research and experience in the organization of the learning process with the identification of emerging didactic difficulties in the training of teachers, the use of the digital educational environment in overcoming these difficulties leads to the conclusion about their effectiveness and relevance. But at the same time, there is a number of problems associated with the low level of readiness of the teacher to overcome the emerging didactic difficulties in his educational and training activities using the digital educational environment.

### 2 Literature Review

In the course of studying and analysing the works of scientists in the field of using the digital educational environment, it was found that by now a fairly large experience has been accumulated in developing and using a teacher in such format of educational and training activities. It is reflected in the works of such scientists as B. Schneuwly, H. Vollmer (2018), Zh. A. Kasko, T. I. Shukshina (2019), etc. Most authors agree that many teachers experience certain didactic difficulties in carrying out educational and training activities using a digital educational environment.

It should be noted that such researchers as F. Ligozat, J. Almqvist (2018), R. A. DeMilo (2011) and others were engaged in the study of didactic difficulties of a teacher at different stages of the development of pedagogical science. Scientists have identified the reasons for emerging of didactic difficulties of teachers and identified some ways to overcome them (mentoring, consultations, attending demonstration lessons).

Analysis of the scientific literature on the research topic (Movsesyan & Shukshina, 2018; Babushkina et al., 2020; Buyanova et al., 2020; Shukshina et al., 2018; Benjamin, 2012; Afonina & Shukshina, 2020; Mayer, 2017; et al.) enabled to formulate a working definition of didactic difficulties of a teacher – an observed situation of educational and training activities of a future teacher, in which there is insufficient formation of the ability to solve emerging didactic tasks of building a learning process focused on activating educational activities in the classroom, developing independence, motivating learning. Thus, we consider the difficulty not as an obstacle, but as a task of practical activity, which is characterized by uncertainty of the conditions of the problem, variability of solutions due to specific contexts of its occurrence (Brockbank & McGill, 2007; Clanche, 2006; Ryzhov et al., 2020; Vershinina et al., 2020; Lijnse, 2004; Mamontova et al., 2016).

### 3 Research Methodological Framework

The purpose of the article is to consider the process of overcoming the didactic difficulties of a teacher, when some elements of the educational process are organized in a digital educational environment.

In accordance with the goal, the following research tasks were identified: to determine the possibilities of the digital educational environment and its ways of functioning in overcoming the teacher's didactic difficulties that arise; to consider the role of practice as a system-forming element aimed at the teacher's didactic training and determining specific difficulties in the implementation of educational and training activities for students in practice; to develop study assignments for a student having pedagogical practice in an educational organization.

The experiment was conducted during 2019-2021. The experimental study was carried out on the basis of the Mordovian State Pedagogical University named after M. E. Evseviev. 98 students of the Faculty of Pedagogical and Art Education, whose field of study is Pedagogical Education with the profile of Primary Education, Preschool Education and Fine Arts, took part in the experiment. Additional education is in the field of Design and Computer Graphics.

The research was carried out using theoretical (analysis of psychological and pedagogical literature, synthesis, generalization, systematization of material on the problem of training a future teacher and performing a control and evaluation function, forecasting, comparison, design) and empirical (pedagogical experiment) research methods.

#### 4 Results and Discussion

The digital educational environment functioning at the Mordovian State Pedagogical University named after M. E. Evseviev (MSPU) is an integral system characterized by universality, which provides students to master theoretical knowledge in the field of didactics more holistically, using third-party educational resources that include a logically structured educational process.

At MSPU, the digital educational environment is used by all participants of the educational process comprehensively with the inclusion of software and hardware digital tools that allow the educational process to be carried out, to record its results in the global network, to accumulate, systematize, store and implement digital didactic resources that provide the student's educational process with information materials in the field of didactics (Vinogradova, 2016; Movsesyan, 2017; Hagger & McIntyre, 2006; Verbitskii, 2010; Shukshina & Movsesyan, 2017). The system under consideration meets the challenges of the modern education system, implements the features of open continuing education, promotes the independence and initiative of the student (Eynon, 2002; Rahman, 2012; Shukshina & Kasko, 2019).

The digital educational environment of MSPU is quite diverse and multifaceted, consisting of several elements. It includes:

1. the automated system "INFO-UNIVERSITY", with the help of which the student has the opportunity to view the latest news, as well as find samples of documents and clarify the schedule of training sessions;
2. the distance learning system "Moodle", in which online learning interaction between teachers and students is organized. From the student's page, access is provided to various documents characterizing the chosen direction and profile of training: the major professional academic program (MPAP), the curriculum, work programs of disciplines and practices, the program of the state final certification, methodological materials. In addition, the student has the opportunity to view the list of training courses in each semester, personal files within each individual course and personal messages (Kurennaya, 2012; Guerriero, 2017; Pramling, 2008; Black, 1998; Brunnet & Portugal, 2016);
3. the student's personal account, where it is possible to view their progress in specific academic disciplines and modules;
4. the service "MSPU 24", where the student presents a list of his own achievements in educational, scientific, sports, cultural, creative and other types of activities;
5. platforms of electronic library systems, where the student has access to any textbook or textbook available in the library (electronic library systems "MSPU", "Urait", "University Library online", "Lan").

In accordance with the first task of the study, we have identified the possibilities of the digital educational environment in overcoming the emerging didactic difficulties of the teacher on the basis of the educational system "Moodle". This educational system enables all participants of the educational process to get access to the didactic materials of any educational course of the university, regardless of its location. The teacher, at the same time, is endowed with separate functions, and can control the educational process remotely. At the same time, the remote format of educational process management, we characterize as the availability of the studied didactic material at any point of the student's location. This allows all participants of the educational process to get individual access to a personal page necessary for viewing the offered training courses and its didactic materials.

The main media content of the considered Mordovian State Pedagogical University named after M. E. Evseviev environment is training courses. The main elements of each course are a set of didactic materials presented in the form of objects of the Moodle learning environment: resources and interactive elements of the course. Using the example of the discipline "Pedagogical Practice", we will show a way to overcome the didactic

difficulties of a teacher by performing a set of developed educational tasks.

To get access to the course, the student must click on the link "Home page", in the drop-down list select the desired MPAP, level of education, field of study, profile, form of study, course of study, academic course. After choosing an academic course, the system will offer enrolment, after which the student will have access to the didactic materials of the course. The course materials can be lecture texts, hyperlinks to online lectures, online consultations, online classes, a set of training tasks and much more. Completing academic assignments, the platform allows the student and the teacher to save the students' works, reviews and ratings for these works, comments and reviews in the form of comments.

The system also makes it possible to interact between the participants of the educational process. This is done through asynchronous interaction (instant messaging).

As part of the second task of the study, we have considered the role of practice as one of the system-forming elements aimed at its didactic preparation and at identifying specific difficulties in the implementation of educational and training activities by a teacher in practice.

Pedagogical practice also provides a synthesis of didactic knowledge and practical experience. Acquisition of didactic activity and formation of readiness for it are possible only if the didactic difficulties that arise are successfully overcome, which are interdependent on theory and practice in the didactic training of a teacher, since most of the components of skills and abilities in the field of didactics cannot be formed, limited to classroom classes.

It should be noted that pedagogical practice at Mordovian State Pedagogical University named after M. E. Evseviev occupies a central place in training students to solve emerging didactic difficulties in the process of implementing educational and training activities. As a rule, educational organizations of not only the Republic of Mordovia, but also neighbouring subjects of the Volga Federal District are the bases for having pedagogical practice.

Solving the third task of the study, we will give examples of developed educational tasks for students who are in pedagogical practice in an educational organization. It should be recalled that the didactic interaction between the teacher and the student was also carried out in the educational environment "Moodle", which is actively used in the Mordovian State Pedagogical University named after M. E. Evseviev for the implementation of the educational process.

1. Select which tasks the teacher-mentor uses in the lesson (according to your profile).
2. Formulate tasks for one of the types of universal educational actions formed in the lesson, in accordance with your profile.
3. Analyse the content of the textbook (according to your profile), which is used by a teacher-mentor in a specific educational environment in terms of its personal orientation, activity component and creative orientation. Formalize the results in the form of a table. Draw conclusions.
4. Get acquainted with the content of the school's curriculum. Analyse the list of subjects studied for one academic year; is there a division of the list of subjects by year of study, as well as a division of academic courses into mandatory and additional ones?
5. On the basis of theoretical materials, determine the main requirements for the organization of the educational process of children with special educational needs.
6. Develop an approximate structure of the lesson using interactive technologies.
7. Present the intermediate results of the diagnosis by the teacher-mentor of the formation of universal educational actions in students.

8. Suggest options for using health-saving technologies in the lesson (in accordance with the selected profile).

The content of the developed educational tasks is correlated with the lecture material on didactics about the peculiarities of the teacher's didactic difficulties, their discussion and verification is carried out in practical classes, and the search for ways to overcome the didactic difficulties that arise, as a rule, is carried out during the training session. The reporting documentation on the results of the pedagogical practice and the presentation of the completed educational tasks are provided to the teacher in the form of a portfolio, accompanied by photo and video materials.

Based on the results of the experimental work carried out, we identified that the implementation of the educational process in the digital educational environment contributed to serious changes – students, to a greater extent, identify didactic difficulties in organizing the educational process, quickly and successfully find ways to solve emerging difficulties. This indicates the effectiveness of the work carried out in terms of increasing the level of didactic training of the teacher. These conclusions are supported by the comparative results of the study conducted by us on the basis of the Moscow State Pedagogical University. Students of the 3rd year of the Faculty of Pedagogical and Art Education took part in it. The data indicate a positive dynamics of the work carried out: before the experiment, the ability to isolate, adequately and promptly find ways to overcome the emerging didactic difficulties was at a low level (36%), and after the work had been done, its level increased to 54%.

## 5 Conclusion

The conducted research allows us to draw the following conclusions:

In modern conditions, the search for ways to overcome the teacher's didactic difficulties that arise, their prompt identification in the course of the educational process is possible using digital information and educational environment saturated with dynamically changing and improving digital content.

Pedagogical practice at the MSPU occupies a central place in the teachers' training to solve the emerging didactic difficulties in the process of implementing educational and training activities

One of the means of overcoming the emerging didactic difficulties of a teacher in the digital educational environment is competently developed practice-oriented training tasks in the academic course "Pedagogy", which a student can perform during the period of having pedagogical practice, thereby solving specific didactic difficulties in his educational and training activities.

So, as a result of the conducted research, we can say that in modern conditions, the search for ways to overcome the emerging didactic difficulties of the teacher, their prompt identification in the course of the educational process is possible using digital information and educational environment saturated with dynamically changing and improving digital content.

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**Primary Paper Section:** A

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## RESULTS OF A PILOT STUDY ON DIDACTIC DIFFICULTIES OF A MODERN TEACHER

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Abstract: The article deals with the main didactic difficulties of the teacher, identified as a result of the analysis of psychological and pedagogical literature and experimental studies. The author identifies general and special didactic difficulties, changes in the teacher's didactic difficulties that arise at different stages of the development of Russian education, compares the didactic difficulties of a modern teacher with the first large-scale studies that were conducted in the 70-90 years of the XX century. The reasons of didactic difficulties experienced by young teachers in their pedagogical activity are determined. Taking into account the obtained results, the ways of further research of the didactic difficulties of the modern teacher are outlined.

Keywords: didactic difficulties, educational and training activity, learning process, teacher, research.

### 1 Introduction

The dynamic changes taking place in modern society dictate new serious conditions for the organization of educational and training activities and for the system of Russian higher education as a whole, while the teacher needs to respond quickly to emerging changes and successfully search for ways to solve the didactic problems that arise before him. The main didactic problem that a teacher faces today is a competently organized and qualitatively designed learning process (Kasko & Shukshina, 2019; Tryapitsyna, 2013).

In addition, the scientific community faces the problem of identifying the teacher's didactic difficulties in organizing and implementing educational and training activities at school. The above-mentioned problem is currently multidimensional, it is inextricably linked with the complexity and complicity of the construction of the learning process, within which there is an interaction of at least three of its participants: the student, the teacher and didactic material.

Due to the influence of various socio-cultural factors, this problem is becoming increasingly complex, since a number of didactic difficulties arise in the activity of a modern teacher, requiring their immediate solution (Shukshina et al., 2018; Kuzmina & Rean, 1993; Yorke, 2003). But, at the same time, this phenomenon has been present in pedagogical science for quite a long time.

The relevance of this study is an attempt to identify and further comparison of a set of didactic difficulties of a modern young teacher in the studies of the 70s of the XX century. The obtained data can help in assessing the current state of didactic science and are a reference point for the organization of didactic training of a teacher who needs to be able to identify emerging didactic difficulties, as well as find optimal ways to overcome them in his educational and training activities.

### 2 Literature Review

It should be noted that this problem has attracted researchers in different periods of the development of pedagogical science. V. Clifford, B. Nicholas, & M. Lousberg (2001), Yu. K. Babansky (1977), S. V. Bakulin, T. I. Shukshina, E. A. Bakulina, V. I. Laptun (2019), V. E. Deryuga, S. N. Gorshenina, Yu. A. Evseeva, V. I. Laptun (2020), M. V. Antonova, V. V. Akamov & E. E. Afonina (2020),

V. G. Onushkin, Yu. N. Kulyutkin, S. G. Vershlovskii (1987), A. G. Moroz (1990) and other researchers.

The issues related to the didactic difficulties of the teacher are considered in many modern studies devoted to the study of the professional pedagogical activity of the teacher. The study by R. Mayer (2017, p. 6082) notes that "a significant share of didactic difficulties of a teacher, regardless of his age, is associated with an insufficient level of formation of the organizational-knowledge and organizational-educational element of educational and training activities." In the study of A. P. Vinogradova (2016) conducted a detailed analysis of the essence of the concept of "didactic difficulty" and presented the author's classification of didactic difficulties of an educational institution teacher.

To understand the essence and features of the teacher's didactic difficulties, much attention is drawn to the research of B. Schneuwly (Schneuwly & Vollmer, 2018). The scientist examines the personal and professional value orientations of the teacher, his attitude to educational and training activities, as well as the didactic difficulties that arise that a modern teacher experiences when organizing educational and training activities, and various other issues of pedagogical activity. So, on the basis of the conducted sociological research B. Schneuwly and H. Vollmer (2018) point out that 14.0% of teachers cannot disclose the necessity of the taught subject; 7.2% identify didactic difficulties associated with attracting students' motivation to study the taught subject by the teacher; 8.3% of teachers note that they have difficulties in the ratio of the content of didactic material to life; 12.6% of teachers experience difficulties in organizing practical work in the learning process.

It should be said that many researchers note the fact that a number of teachers with different experience and education in different fields of knowledge do not have the necessary level of didactic competence formation. Most of them have an objective need for a serious update of their own didactic knowledge. A serious problem for teachers of an educational organization arises when performing self-analysis of their educational and training activities and analyzing the activities of colleagues.

### 3 Research Methodological Framework

The purpose of the article is to compare the spectrum of didactic difficulties experienced by modern teachers with didactic difficulties that were identified as the main ones in studies in the 70s of the XX century.

In accordance with this goal, the following research tasks were defined: to conduct a survey of modern young teachers according to the methodology of Yu. K. Babansky (1977) to determine the existing didactic difficulties in this category of teaching staff; to compare the results obtained earlier with the latest results on the study of emerging didactic difficulties in young teachers, as well as to identify new, not previously encountered, didactic difficulties of young teachers in the educational process of the school.

It should be noted that the research materials of Yu. K. Babansky (1977) were taken to identify and compare the set of didactic difficulties of young teachers of the 70s of the XX century, and the didactic difficulties of modern teachers. In 1977, he identified and analyzed the most common didactic difficulties of teachers with no more than 2-3 years of teaching experience (young teachers) concerning the implementation of educational and training activities (Babansky, 1977).

The experiment was conducted during the years 2020-2021. The experimental study was carried out on the basis of the Mordovian State Pedagogical University named after M. E. Evseev. 244 young teachers of educational organizations of the Republic of Mordovia took part in the experiment (Municipal Educational Institution "Lyceum No. 26, Municipal Educational Institution " Secondary general education school

with in-depth study of individual subjects No. 24", Municipal Educational Institution "Gymnasium No. 20" of Saransk, Municipal Budgetary Educational Institution "Krasnopolskaya middle school" of Torbeevsky district, Municipal Budgetary Educational Institution "Akselskaya secondary general school" of Temnikovskiy district, etc.), including:

- 95 young teachers of the Russian language and literature;
- 87 young primary school teachers;
- 40 young teachers of fine arts;
- 33 young music teachers.

It should be noted that the young teachers taking part in the survey have no more than 2 years of teaching experience.

The research was carried out using theoretical (analysis of psychological and pedagogical literature, synthesis, generalization, systematization of material on the problem of training a future teacher, forecasting, comparison, design) and empirical (pedagogical experiment) research methods

#### 4 Results and Discussion

To solve the set research tasks, we analyzed the results of the survey obtained in 1977 and in 2021, which enables us to talk about the presence of constant didactic difficulties, such as the formation of motivation for learning, the implementation of educational and training activities based on an individual approach, as well as the creative solution of the set didactic tasks. The article describes the experience of the Department of Pedagogy of the Mordovian State Pedagogical University named after M. E. Evseev in studying the didactic difficulties of a modern teacher.

Solving the first task of the study, we conducted a survey of modern young teachers using the same methodology. We have adapted the questionnaire developed by Yu. K. Babansky (1977) for modern young teachers, removing only the question concerning the organization of assistance to activists in pioneer and Komsomol work. Using this questionnaire, we wanted to differentiate common features and various didactic difficulties in the complex of modern young teachers and young teachers of that time. It should be noted that our study does not pretend to be a panel, since we study the same category of teaching staff, but at different historical stages, which contradicts the essence of this method of pedagogical research. However, a comparison of the results of studies aimed at identifying the didactic difficulties of the teacher, which were conducted in different historical periods, makes it possible to say that there are two large types of difficulties – the first type of difficulties depends on constant changes in the development of Russian education, and the second type is associated with the design and competent implementation of educational and training activities, in accordance with the constantly updated content of modern Russian education. The second type of identified difficulties is deeper and contributes to the understanding of the socio-cultural conditionality of changes in the educational and training activities of a modern teacher.

At the same time, the episodes of didactic activity concerning the use of best practices of colleagues and generalization of their own experience cause the greatest difficulty and anxiety among modern young teachers (Lijnse, 2004; DeMilo, 2011; Ligozat & Almqvist, 2018) (62%). This difficulty may be associated with the introduction in 2010 of an updated form of the teacher certification procedure, as well as with new criteria for teacher remuneration, which was also changed in 2012. The latter causes the greatest problems, since the educational and training activity of the teacher has lost its dominant role, adding it to secondary, no less important for modern pedagogical science, activities: speaking at conferences, participating in seminars and webinars, publishing scientific articles, introducing innovations, etc. Most of the subjects are confident in the correctness of their skills to design educational and training activities in accordance with the modern requirements of the Federal State Educational Standard (2020), they believe that many means of developing the cognitive interest of students are used at a high level.

Unfortunately, these characteristics of the teacher's educational and training activity are not evaluated in the certification procedure.

Let's present the results obtained more specifically. So, when designing the learning process in a modern educational organization, teachers at the present stage do not have serious difficulties (18%), but still there is a difficulty in carrying out activities to develop interest in the discipline being taught (32%), as well as forming students' awareness of the knowledge they receive (31%). 25% of respondents see a serious problem in the implementation of actions to determine and diagnose the causes of student failure, and 23% of modern teachers are not able to carry out corrective measures to solve this problem. In addition, modern young teachers see an important obstacle to the implementation of their educational and training activities in maintaining the intensive working capacity of each student throughout the entire lesson (45%). A serious problem was caused by the work on the implementation of an individual approach to students (51%), as well as the use of interdisciplinary connections in educational and training activities (19%).

As part of the solution of the second task of the study, we can say that the results obtained on the study of didactic difficulties obtained at the present stage and in 1977 are of particular value. The survey and analysis of conversations showed that modern young teachers have serious didactic difficulties in the implementation of educational and training activities, which were identified by scientists in the XX century, but still tend to eliminate them.

In descending order and degree of significance, let's compare the didactic difficulties of teachers of the XX century with modern young teachers of the XXI century. Based on the results obtained in 1977, it is worth saying that serious didactic difficulties of teachers concerned the design of the learning process in individual lessons (it was - 48%, it became - 18%). In a modern educational organization, the importance of such didactic difficulties of teachers remains, such as the implementation of activities to develop interest in discipline and teaching (it was - 38%, it became - 32%), as well as the need for knowledge (it was - 41%, it became - 31%). Great difficulties for modern teachers are caused by the implementation of operations to identify and diagnose the causes of students' failure (it was - 32%, it became - 25%), as well as carrying out corrective work to eliminate them, solving emerging didactic tasks of developing learning (development of thinking, memory, etc.) (it was - 36%, it became - 23%) due to ignorance of ways and methods of their elimination. We see positive dynamics in such important didactic difficulties of modern teachers as the preservation of the active working capacity of each student at all stages of the lesson (it was 45%, and it became 26%) and in the implementation of an individual approach to each student of the class (it was 51%, and it became 27%). Intersubject connections in their educational and training activities are used by 37% of modern young teachers, when in the primary study there were 19% of them.

Solving the third task of the study, it is worth noting that the results obtained also allow us to detect new didactic difficulties that arose with the introduction of the latest generation of the Federal State Educational Standard (2020) (for example, 60% of the subjects experience difficulties in designing educational and training activities). The basis of this difficulty is the activity of selecting didactic material aimed at achieving the goals of designing the current educational situation. A certain difficulty for the teacher is represented by a diverse range of didactic material on specific disciplines, which significantly complicates his choice due to the reason for not always correct knowledge of the selection criteria for this material for a lesson.

In addition, a modern young teacher has difficulties in determining the structure of educational and training activities, which are closely dependent on the specifics of the student's educational activity. Such problem is seriously faced by the teacher when choosing effective methods and forms of teaching,

as well as when diagnosing the level of formation of methods of educational activity of students.

Didactic difficulties clarifying the logic of the learning process are also experienced by a certain number of young teachers. It is worth noting that the lack of logic in the design of the algorithm of actions is most likely justified by a low level of knowledge of the structure of the learning process. It is also quite difficult for some young teachers to analyze the individual capabilities of students in the learning process. This difficulty is associated with an incorrect understanding of the boundaries of the teacher between the zones of immediate and actual development, which is necessary to create a situation of success (Benjamin, 2012; Prediger, 2010; Mayer, 2016; Moira, 2007; Biggs & Tang, 2011). The work on comparing and evaluating the features of the structure of effective educational activities of students is also problematic. A young teacher faces problems in an effective way of designing a student's educational activity due to the low level of formation of skills and abilities of this activity.

Flexibility in the strategy of the sequence of actions in relation to the educational activities of students also depends on their transition to a higher level of training (Brockbank & McGill, 2007; Abdusamiev & Abdurahmonov, 2020). A serious reason for these didactic difficulties is the insufficient level of knowledge and practical skills in improving the actions of educational and training activities, as well as in assessing the readiness of students to move to a higher level.

Difficulties in choosing didactic teaching tools necessary in organizing the process of teaching schoolchildren (Aschepkov, 1998; Zimnaya, 1999). These difficulties may arise for two objective reasons. Firstly, due to the lack of visual or demonstration material, audio or video equipment due to time-consuming and laborious work, on the one hand, and due to the financial impossibility of acquiring a new one for an educational organization due to the obsolescence of the previous one, on the other; secondly, due to the variety of didactic teaching tools.

Difficulties of balancing time intervals at all stages of the lesson, the distribution of subjects of the learning process in the educational space (Clanche, 2006; Kurenaya, 2012; Polyakova, 1983). Difficulties for a young teacher may arise due to the lack of skills for the uniform distribution of time, the allocation of a specific period of time for each stage of the lesson and the resulting spatial limitations.

It is important to emphasize that this didactic difficulty was noted by young practicing teachers who have no more than 2 years of experience in school. Why is the percentage of this didactic difficulty so high? The elimination of these difficulties can be achieved by analyzing the entire work by the teacher. For example, in order to solve the problem with the development of work programs on the subject, it should be noted that if earlier it was enough for a teacher to have thematic and hourly planning, today, in addition to defining the goals and objectives of training, the characteristics of the lesson content, it is necessary to specify the type and form of each lesson, specify three groups of planned learning outcomes (first of all, the level of mastering subject knowledge and universal educational skills), think over the types and forms of control, and it is desirable to specify homework assignments on the subject for a year ahead. The teacher has never done such work before, he does not always understand why it is necessary; the vagueness of determining the universal learning skills of the student, given as the expected result, also causes great difficulties. Therefore, it is not surprising that more than half of the teachers surveyed named this group of didactic difficulties.

57% of the surveyed teachers experience didactic difficulties resulting from the lack of didactic knowledge, experience of creative activity and emotional and value attitude, which become one of the main characteristics of the modern learning process at the primary and secondary school levels.

The analysis of the survey results obtained in 1977 and in 2021 suggests that there are constant didactic difficulties, such as the

formation of motivation for learning, the implementation of educational and training activities based on an individual approach, as well as the creative solution of the set didactic tasks.

A more serious study of the causes of didactic difficulties experienced by young teachers requires consideration of the value aspects of educational and training activities, an explanation of the essence of modern trends in the development of Russian general education, an analysis of working programs of disciplines included in the main professional educational programs in the areas of pedagogical education and Psychological and pedagogical education, including didactic training of young teachers, as well as programs, which relate to additional educational services, which will ensure the development of ways to overcome the teacher's didactic difficulties that arise.

## 5 Conclusion

The conducted research allows us to draw the following conclusions:

In different historical periods of the school's development, the teacher's didactic difficulties are focused on the subject-centered construction of the didactic process, which actualizes the problem of the teacher's didactic training. The identified didactic difficulties are experienced by various subject teachers who participate in the experiment and have up to 2 years of work experience in an educational organization or do not have it at all.

Based on the results obtained from the survey of modern young teachers, it is worth saying that serious didactic difficulties of teachers concerned the design of the learning process in individual lessons, the implementation of activities to develop interest in the discipline and teaching, as well as the need for knowledge, etc. The survey and analysis of conversations with teachers showed that modern young teachers have serious didactic difficulties in the implementation of educational and training activities, which were identified in the XX century and at the present stage.

The obtained results enable us to detect new didactic difficulties that have arisen with the introduction of the latest generation of the Federal State Educational Standard (difficulties in designing educational and training activities, presenting a diverse range of didactic material in specific disciplines), which significantly complicates the effectiveness of the implementation of educational and training activities of a young teacher.

It should be noted that the subjects as the reasons for the emerging of these difficulties in their educational and training activities call the absence of these issues at the stage of their training at a pedagogical university, while some young teachers are not going to change the established style of carrying out educational and training activities, motivation is low.

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**Primary Paper Section: A**

**Secondary Paper Section: AM, AN**

## RESEARCH COMPETENCE AS A FACTOR OF CAREER ORIENTATION DEVELOPMENT OF PEDAGOGICAL UNIVERSITY STUDENTS

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**Abstract:** The article deals with the issue of research competence. The authors have identified three groups of psychological and pedagogical factors for the successful formation and development of a person's career orientation: objective (real activity aimed at results), objective-subjective (organization of the professional environment, professionalism, etc.) and subjective (motives, orientation, abilities, competence, etc.). The impact of research competence on the development of such a component of a person's career orientation as career potential (career advancement) is noted. The article presents the results of a psychological experiment to identify the level of development of career potential (career advancement) as a component of the career orientation of the personality of students of a pedagogical university.

**Keywords:** personality orientation, career orientation of personality, competence, research competence, psychological and pedagogical factors, students.

### 1 Introduction

Modernization of the education system in Russia has led to a change in the guidelines for the training of future teachers, the formation of such personal and professional competencies among students of pedagogical universities that meet, on the one hand, the demand of society, and, on the other, the requirements of employers for specialists who are competitive in the labour market (Zhuina, 2011). The value of a specialist in the labour market consists of such components as high-quality education, existing work experience, formed professionally important qualities, career orientation of the individual (Zhuina, 2015).

One of the urgent problems for higher education is the formation and development of future highly qualified specialists in the process of university education. Therefore, the definition of conditions and factors that favorably affect the formation and development of a professional's personality (namely, the career orientation of the individual) is significant, and determines interest in the designated problem. Along with social and environmental factors, it is possible to identify psychological and pedagogical factors of optimizing the process of formation and development of career orientation: objective, objective-subjective and subjective (Zhuina, 2014). The latter include research competence, the formation of which in the field of future professional activity is one of the most important goals of all modern programs of higher professional education (Zimnaya, 2004). Research competence is a factor in the development of other more specific and subject-oriented competencies, since it helps the student to study, enables him to become more flexible, competitive, helps to be more successful in later life, which determines its significance for the formation and development of the student's career orientation. So far, a fundamental contradiction has arisen in the modern education system between the traditional system of teacher training and the individual creative nature of his activities. The current system of teacher training focuses the teacher mainly on the reproductive style of activity and does not form a systematic vision of the educational process, the need for creative self-realization, in a research approach to teaching and educating schoolchildren, which leads to the necessity to revise the system of university education in terms of developing the content of disciplines and various types of practices in order to form the research competence of the

future teacher, increase the level of his professionalism and career orientation (Adolf & Stepanova, 2008; Akimova & Galstyan, 2007; Zolotseva & Kozlova, 2000).

### 2 Literature Review

Addressing the problem of the career orientation development of the individual is not a new aspect in the psychological and pedagogical literature. Researchers are actively studying the issues of the formation and development of a career orientation of a person in various fields of professional activity.

In recent publications, the issues related to the formulation of the problem of the formation of a number of structural components of a person's career orientation are updated: career potential, career orientations, career motivation and career image. In this context, special attention should be paid to the research of foreign scientists, whose works reveal theories and approaches to understanding the problem of the development of structural components of a person's career orientation: the developing approach of D. E. Super (1980); the theory of career choice of J. L. Holland (1959); the theory of adaptation to work of A. P. Bell et al. (1988); the concept of "multivariate career" of D. T. Hall et al. (1989); the concept of analyzing professional development at the level of organizations and at the level of individuals of P. P. Murphy and H. D. Burck (1976); the theory of "career success" of C. P. Williams and M. L. Savickas (1990); the theory of "career anchor" of E. H. Schein (1996); "The law of phases or stages of career growth (path)" of C. N. Parkinson (1968).

In the research of Russian scientists, the issues of career orientation of personality are presented in the concept of professional development of E. F. Zeer (2003); the concept of professional self-determination of E. A. Klimov (1996); studies of the formation of professional orientation of O. N. Shumilova (2016); the study of career growth of E. A. Mogilevkin (2007); models of career orientations of O. P. Tsaritsenseva (2010); studies of professionalism of R. Shtetner (1996); theories of the development of professional "I" of S. F. Murashko (1999); theories of personality professionalism of N. V. Kuzmina (1990).

The research competence of a teacher is understood as a holistic, integral characteristic of a person, manifested in his willingness to take an active research position in relation to his activity and himself as its subject in order to transfer the semantic context of activity from functional to transformative (Shukshina et al., 2018; Zhuravleva et al., 2018; Yakunchev et al., 2020; Buyanova & Gorshenina, 2019). In the classification of Barannikov A. V. (2002) research competence is assigned an independent role along with educational, socio-personal, communicative, personality-adaptive and competence in the field of organizational activity and cooperation. Research competence in the classification of Khutorskoy A. V. (2003, p. 57) is considered as an integral part of cognitive competence, which includes the "elements of methodological, supra-subject, logical activity, methods of goal-setting, planning, analysis, reflection". It also serves as a component of the competence of personal self-improvement aimed at mastering the ways of intellectual and spiritual self-development. The analysis of the literature confirms the relevance and significance of the problem of studying research competence, which is an important factor in the development of a person's career orientation.

### 3 Research Methodological Framework

The purpose of the article is to study the role of research competence in the development of the career orientation of the personality of students.

In accordance with this goal, the following research objectives were identified: 1) to summarize the theoretical foundations of

research on the problem of the development of the career orientation of the individual, to determine the psychological and pedagogical factors that affect the development of the career orientation of the individual; 2) to diagnose the prevailing factors of career potential (career advancement) as a structural component of the career orientation of the personality of students, to identify the role of research competence in the formation of such a component of the career orientation of the personality as career potential (career advancement); 3) formulate conclusions about the role of research competence as a factor in the development of a person's career orientation and recommendations for the development of the content of academic disciplines and practices in higher education institutions in order to form research competence.

The study was conducted during the 2020-2021 academic year on the basis of Mordovian State Pedagogical University named after M. E. Evseev. 420 students of the Faculty of Psychology and Defectology (from the first to the fourth year) took part in the experiment. The research was carried out using theoretical (analysis of psychological and pedagogical literature, generalization, systematization of material on the research problem) and empirical (ascertaining experiment) research methods. To study the factors of career potential (career advancement) as a component of a person's career orientation, the methodology of E. A. Mogilevkin (2007) "Factors of career advancement" was used. The methodology of E. A. Mogilevkin (2007) enables us to determine which of the 14 factors of successful career advancement are the most significant for students of different years of study: intelligence, good education, perseverance, money, professionalism, experience, connections, luck, close relationships with superiors, wit, luck, patience, family, attractive appearance. The influence of research competence on the career orientation of the students' personality was studied using a questionnaire. The questionnaire consisted of 15 questions, the answers to which enable to identify which disciplines and practices reflected in the curriculum contribute to the development of research competence and how the formed research competence affects career potential (career advancement) as a component of a person's career orientation.

#### 4 Results and Discussion

In the course of solving the first task, it was established that "the career orientation of a person should be understood as a complex structural component of the general orientation of a person, which is a multidimensional process of orientation and motivation of a person to work in the professional sphere, mediated by the process of professionalization." Three groups of factors can be distinguished as psychological and pedagogical factors for optimizing the process of formation and development of career orientation: 1) objective, related to the real system and the sequence of actions aimed at achieving the desired result; 2) objective-subjective, related to the organization of the professional environment, the professionalism of managers, the quality of system management; 3) subjective, related to subjective prerequisites measures of success of professional activity. These include motives, orientation, abilities, research competence, skill, satisfaction, creativity; the measure of their manifestation, that is, personal, professional-psychological, psychophysiological and individual-typological qualities of the subject of professional activity, contributing to the growth of professionalism or hindering this process. As a result of the analysis, it was also determined that research competence is formed through the use of problem, game, project, discussion and other active forms and methods of teaching.

To implement the second task, an empirical study was conducted aimed at diagnosing the factors of career advancement as a structural component of a person's career orientation, as well as the impact of research competence on the development of career potential (career advancement) as a factor of a person's career orientation. The respondents were 420 students of the Faculty of Psychology and Defectology of Mordovian State Pedagogical University named after M. E. Evseev, students in the following fields of study: Psychology, Psychology of education, Special

(defectological) education. The results, which were obtained during the diagnostics of factors of career potential (career advancement) as a component of a person's career orientation according to the methodology of E. A. Mogilevkin (2007), indicate that the dominant factors of career advancement among the 1st-year students are "good education" (20%) and "connections" (16.6%). For the 2nd year students, such factors are also "good education" (23.3%) and "perseverance" (16.6%). For the 3rd year students, the most significant factors of career advancement include "professionalism" (20%), "experience" (16.6%), "intelligence" (16.6%) and "good education" (16.6%). A similar trend persists among the 4th-year students, for whom the factors "professionalism" (26.6%), "experience" (20%) and "intelligence" (20%) are significant, and slightly less significant factors are "good education" (16.6%) and "perseverance" (16.6%). The data obtained indicate a deeper understanding and a meaningful attitude towards their future professional activities and the construction of a career trajectory by senior students who really assess the upcoming difficulties, do not focus on factors such as "good luck", "fortune", "close relations with superiors", etc., but "bet" on their experience gained during practice-oriented activities, the professionalism that they plan to form in the course of their career path, the value of education and their intellectual abilities.

The diagnostics of research competence and its impact on the career orientation of the students' personality was studied by means of a questionnaire, during which it was found that in the traditional educational practice of a higher educational institution, there is a rather low effectiveness of the use of research competence in the conditions of studying disciplines and having practices laid down in the curriculum. The majority of students of the pedagogical university of junior courses have difficulties in preparing for classes (75%), within the framework of practical training, they find it difficult to perform tasks of a creative nature (78%), while writing a term paper (82%). Senior students have higher rates of preparation for classes and having research, pre-graduate practice. Thus, in the course of writing term papers and theses, students have less difficulty in formulating the scientific apparatus (86.7%), in setting up an experimental study (84.2%), in building the logic of research (76.6%), in the ability to choose the main thing (74%), in writing a research paper as a whole (87.3%). The identified shortcomings of undergraduate students, as we believe, are explained by an insufficiently formed level of research competence.

In the course of solving the third task, conclusions are formulated that the results of the study naturally indicate the following: in junior courses, the low level of development of the career orientation of the individual, and in particular its structural component, such as career potential (career advancement), is due to the fact that training is mainly theoretical in nature, the curriculum reflects disciplines aimed mostly at the formation of universal and general professional competencies. Whereas, by the senior years, the level of career orientation increases, which is due to the fact that in the third and fourth years, practice-oriented disciplines appear in the curricula (for example, "Methods of active socio-psychological training", as well as elective disciplines: "Career development of personality", "Psychology of professional development", etc.), the content of which is based on the formation of students' research competence through the use of interactive teaching methods during the study of disciplines. As a rule, socio-psychological training acts as the main method of mastering the material by students. Interactive teaching methods, in particular training, contribute to increasing students' motivation to study, form a strong interest in future professional activity, enable them to develop personal and professional qualities necessary in their chosen profession, develop competencies, in particular research competence, which enables them to form professionalism, flexibility of thinking, competitiveness. The formation of research competence is also facilitated by such forms of work as writing term papers and final qualification papers, production and research, pre-graduate practices. Thus, during the course of practical training in obtaining professional skills and experience

of professional activity, students form a professional worldview; consolidate and deepen theoretical training, acquire practical skills and competencies; develop interest and creative attitude to practical activities; form readiness to carry out research, pedagogical and design activities in the conditions of professional educational organizations. The program of research and pre-graduate practice provides a system of tasks involving the expansion, consolidation and systematization of theoretical knowledge, the acquisition of practical work skills, the development of skills for conducting independent theoretical and experimental research using the knowledge gained, the acquisition of experience in presenting and public report on the results of their scientific and practical activities.

This enables us to formulate a number of recommendations for the development of the content of academic disciplines and practices in higher education institutions in order to form research competence. Firstly, to include in the content of academic disciplines at least 50% classes using interactive teaching methods (business game, training, group discussion, etc.). Secondly, to intensify the development of students' research competence in traditional educational practice when performing term papers and theses, paying special attention to the formulation of the scientific apparatus, the formulation of the experiment, the logic of research, the ability to choose the main thing.

The conducted research confirms our assumption about the importance of research competence in the development of the career orientation of the personality of students, which essentially helps to navigate in research activities, to achieve goals in both academic and professional activities.

## 5 Conclusion

Based on the results of the study, the following conclusions can be drawn:

In order to form the personality of a future professional teacher in the process of practice-oriented training at a university, it is necessary to develop his career orientation, which is a multidimensional process of orientation and motivation of a person to work in the professional field, mediated by the process of professionalization. The structure of a person's career orientation includes a number of components: career motivation, career orientations, career image and career potential (career advancement).

The career orientation of the student's personality develops in the conditions of study in higher educational institutions under the influence of a number of psychological and pedagogical factors, which include objective factors related to the real system and the sequence of actions aimed at achieving the desired result; objective and subjective factors related to the organization of the professional environment, the professionalism of managers, the quality of system management and subjective factors. The subjective psychological and pedagogical factors of optimizing the process of formation and development of career orientation include the formed research competence.

The research competence of students is a set of personally meaningful research knowledge, skills, skills, work experience, value orientations, behavioral models that can be formed in the process of research activity.

The conducted experimental research on the diagnostics of the career orientation of the individual, namely, its component such as career potential (career advancement), suggests that the factors of career advancement of junior students are mainly "good education", "connections" and "perseverance", which indicates an insufficient level of development of this component of the career orientation of the individual. By the senior years, students have a more meaningful approach to their chosen future profession, and this is reflected in the factors of career advancement, which become "professionalism", "experience", "intelligence", etc. The same trend is typical of the development of research competence among students, the results of the survey

showed an insufficient level of its formation among undergraduates. In the course of the study, it was determined that the formation of the research competence of students of a pedagogical university is an integral process of their gradual inclusion in research activities, which is based on continuity in the content, forms, methods, means of training related to the stimulation of scientific research, the development of students' independence in the course of research work. The formation of research competence is influenced by the use of problem, game, project, discussion and other active forms and methods in the learning process. The inclusion of these forms and methods of training in the content of academic discipline programs will enable to form research competence, and, consequently, to increase the level of development of the career orientation of the individual, which will enable the graduate to meet the needs of modern society for young professionals with a sufficient level of professionalism, skills, competencies, personal and professional qualities that enable him to adapt flexibly and quickly to the conditions of professional activity.

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**Primary Paper Section: A**

**Secondary Paper Section: AM, AL**

## FORMATION OF ENVIRONMENTAL COMPETENCE OF STUDENTS IN ADDITIONAL EDUCATION

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**Abstract:** The article considers the substantive and procedural characteristics of environmental competence; substantiates the features of its development in students through the implementation of environmental-oriented measures in additional education. The authors present a generalization of research on environmental competence, on the basis of which the knowledge, activity and motivational-value components of its structure are identified. The result of the study was the presented humanitarian model of environmental education in understanding the ecological competence problems of students in additional education, demonstrating the closest possible result to a scientifically based idea of the object and the process of formation of environmental competence of students in additional education.

**Keywords:** competence, environmental competence, additional education, students, humanitarian model, knowledge component, activity component, motivational and value component.

### 1 Introduction

In accordance with the basic law of the country - the Constitution of the Russian Federation (2020), special attention is required to implement the principle of equivalence of society, economy, ecology and culture, based on the idea of the value of human life and safety in all its environments (natural, social, man-made, cultural, educational, etc.). To achieve these prognostic goals, as noted in the Environmental Doctrine of the Russian Federation, approved by the decree of the Government of the Russian Federation, the Strategy of Environmental Safety of Russia for the period up to 2025 (approved by Decree of the President of the Russian Federation No. 176 dated 04/19/2017) (2017), it is necessary to rely on the age and psychological and pedagogical characteristics of various ecologically educated categories of the population.

Today, environmental education is a qualitatively new type of education, as it reflects the degree of interaction between society and the natural environment, which is expressed in a person's willingness to use environmental knowledge in practical activities. Despite the extensive experience in Russia in this field (Kondrateva & Ulanova, 2014; Yakunchev & Semenova, 2021), the goal in environmental education is not sufficiently understood didactically and the result is not always measurable. This is seen at various conferences, forums, meetings by professionals and the public (Problems of Formation of Ecological Thinking in Modern Society, 2014; Ecology of the Big City, 2021).

The most important mechanism for the implementation of environmental education is the use of a competence-based approach focused on the formation of individual competencies of students, their personal qualities associated with the development of the cultural experience of mankind and implemented in the field of public activity.

The content of environmental competence of students requires knowledge and activity components in the environmental field. This is the reason for the need to form environmental competence that meets the needs of the time and enables us to consider additional education as a tool that ensures the process of ecological formation of students.

### 2 Literature Review

The desire to ensure the well-being and prosperity of the native country, based on the responsibility of people for their Homeland to contemporary and future generations, has identified ecology as one of the priorities of the country's development. What are the meanings of environmental education in the context of the formation of human environmental competence?

A large number of modern studies have been devoted to the use of the competence approach, the formation of students' competencies (Buyanova et al., 2019; Chiranova et al., 2020; Kurkina et al., 2020; Gorshenina et al., 2017; Kobozeva, 2013, 2017; Parshina, 2008; Pisareva & Tryapitsyna, 2019; Tatyana & Ozerov, 2016; Shukshina et al., 2015).

Yadov (2003) connects the meaningful functional of the phenomenon of competence with integrative-personal qualities directly connected with the processes of self-realization and self-actualization of personality in society. The properties of competence are manifested in activity, in organic unity with human values, provided personal interest.

The works of Chopenko (2019), Sharonova (2006), Yakunchev & Semenova (2021) are devoted to the problems of ecological development of personality in the formative space of competence education. The authors consider environmental education as a process and means of forming environmental competence, and environmental competence as a result of environmental education.

Moiseev (1999) actualizes the indissoluble connection of the man with the natural environment, promoting the idea of a common earthly home as the most important condition for the education of environmental responsibility and the importance of caring for the needs and preservation of nature in the younger generation.

Moiseeva & Nikitina (2011), defining environmental competence, imply a set of knowledge and activity components in this area, the ability to see and solve environmental problems based on the proposal and justification of hypotheses, set goals and plan eco-centric activities, collect and analyze the necessary information, choose the most optimal methods of preserving ecological balance; the ability to apply this knowledge and skills in specific activities.

According to Ermakov (2009), ecological competence is a conscious ability, readiness for independent ecological activity, experience of this activity aimed at preserving and sustainable reproduction of life, at practical improvement of the state of the habitat in the process of identifying, solving and preventing environmental problems

Alekseev (2006) interprets the concept of "environmental competence" as a systemic integrative quality of individuality, characterizing the ability to solve problems and tasks of different levels arising in life situations and professional activities, based on formed values and motives, knowledge, educational and life experience, individual characteristics, inclinations, needs.

Ryabov (2012) understands environmental competence as a conscious ability and readiness for productive environmental activities related to improving the state of the environment and preventing the occurrence of environmental problems.

The system of additional education of children, which activities are associated with the comprehensive satisfaction of the spiritual, moral, cultural and cognitive needs of students, the creation of conditions for self-realization, self-determination and self-actualization of students in the eco-centered environment of modern society (Kondrateva, 2016; Kondrateva & Shcheredina, 2019; Yakunchev & Semenova, 2020), is of significant importance in the formation of environmental competence of the

individual. However, the problem of the formation of environmental competence of students in additional education has not been fully reflected in the scientific literature.

### 3 Research Methodological Framework

The purpose of the study is to consider the content-procedural characteristics of the formation of environmental competence of students in additional education by means of humanitarian technologies of music and decorative and applied arts.

In the course of the study, the following tasks were solved:

1. to clarify the interpretation of the concept of "environmental competence";
2. to substantiate the humanitarian model of the formation of environmental competence of students in additional education.

In the course of the research, theoretical methods were used - analysis of scientific literature, generalization of pedagogical experience.

### 4 Results and Discussion

The analysis of sources has shown the multidimensional and ambiguous nature of the concept of "environmental competence". Moiseeva & Nikitina (2011) identify a set of knowledge and activity components in it, Alekseev (2006) emphasizes the importance of formed knowledge, motives, values and life experience. Ryabov (2012) focuses on readiness for productive environmental activities. Within the framework of the study, the ecological competence of students in additional education is considered as a result-oriented educational process, expressed in the willingness and ability to accumulate positive moral and value experience of interaction with nature environment; to reasonable and safe behavior in nature, the ability to evaluate their own behavior and the attitude of other people to nature; awareness of the need for a nature-like attitude to nature.

The elements of the knowledge component are theoretical knowledge of the basics of ecology, nature management, nature protection; principles of organization and functioning of ecosystems; the ability to predict and solve environmental problems. Activity component: practical participation in improving the state of the environment in various types of environmental activities and self-realization of students in it; creation of safe living conditions for the preservation of the natural environment and assistance in solving environmental problems. The motivational and value component includes a sustained interest in the problems of interaction between society and nature, environmental responsibility and duty to protect nature; conviction of the need for careful attitude to the natural world and readiness for practical interaction of the student in improving the state of the environment.

Thus, environmental competence in the study is understood as the relationship between the processes and conditions that ensure the development of environmental culture by students through various types of environmental activities.

The humanitarian model of the formation of environmental competence of students in additional education reflects the meaningful characteristics of familiarization with environmental responsibility and duty to protect nature, the process of formation of ecological consciousness, the formation of ecological thinking and environmental values based on knowledge about the diversity of folk traditions associated with nature; the development of interest in the natural environment, the education of an emotional-value attitude to the surrounding nature and eco-oriented activities in it, taking into account the age of students, ensuring a change in knowledge, activity and motivational-value components and levels of competence formation.

The *purpose* of modeling is aimed at creating the closest possible result to a scientifically based idea of the object and the process of forming the environmental competence of students in additional education.

When designing the model, we rested on defining the purpose, modeling tasks; collecting and systematizing information related to the tasks; identifying the main factors affecting the change in environmental competence of students; building a model taking into account specific tasks.

When constructing a model for the formation of environmental competence of students in additional education, regulatory legal grounds were taken into account; modern approaches to the organization of extracurricular activities of students, highlighted in the state standard of additional education; personal needs for development and self-improvement, in the interests of environmental activities, in expanding knowledge about the world around them.

Based on the above, it seems appropriate to highlight the most significant requirements for the development of the content of environmental education in the system of additional education. They are:

- compliance of the content of additional education with the modern needs of the state, society and the individual;
- compliance of approaches to the formation of environmental competence of students with the principles of the development of state educational standards;
- creating conditions for intensive personal development and continuous updating of the content of environmental education, ensuring changes in knowledge, activity and motivational-value components and levels of formation of environmental competence.

Indicators of determining the level of formation of environmental competence of students in additional education are a combination of knowledge, activity and motivational-value components; the ability to see and solve environmental problems based on the proposal and justification of hypotheses; set goals and plan activities based on the ideology of environmental protection; collect and analyze the necessary information on optimal methods of preserving ecological balance; the ability to apply environmental knowledge and skills in specific activities.

A high level of environmental competence characterizes responsibility for the state of the natural environment; knowledge of the basics of ecology and nature management; the ability to predict the consequences of human activity and find effective ways to solve environmental problems. Students can monitor and evaluate their activities related to compliance with the norms of a healthy lifestyle, rights and obligations in the field of environmental protection, rules of safe and environmentally-appropriate behavior in nature; environmental values occupy high positions, among which is the duty to protect nature.

The average level of environmental competence implies that students have a sufficient amount of knowledge and ideas about the world around them, about the interaction of living and inanimate nature, the organization and functioning of ecosystems and communities of various levels; poor knowledge of scientific methods for studying the natural environment and its components, as well as value orientations, lack of interest in the natural world and the desire to protect it.

The low level of environmental competence corresponds to the fragmentation of knowledge and misconceptions about the functioning of different ecosystems, communities of different levels, the lack of motives and the need to contribute to environmental protection. The students have not formed a safe and environmentally-appropriate behavior in the wild.

In the course of the research, pedagogical conditions that contribute to the effective formation of environmental

competence of students in additional education are highlighted. These include:

1. development of educational, methodological and logistical support for the process of environmental education;
2. creation of a developing ecological and educational environment;
3. activation of the cultural component of the humanitarian content of environmental orientation.

The first condition is the development of educational, methodological and logistical support for the process of environmental education, contributing to the information saturation of environmental classes in the system of additional education, the system integration of components of environmental education in various types of extracurricular activities of the process.

The second condition is the creation of a developing ecological and educational environment, including a psychological and pedagogical reality, combining the interaction of teachers and students on the protection and conservation of the environment; pedagogical influence on the ideological potential of ecological thinking of students, the formation of all elements of ecological consciousness aimed at the formation of a sustainable understanding of the value and interrelation of all natural ecosystems; fostering a sense of responsibility for the possible consequences of their actions and other people to preserve nature and life on the planet.

The third condition is the activation of the cultural component of the humanitarian content of environmental orientation in the system of additional education by means of humanitarian technologies of music and decorative and applied arts. The implementation of the cultural component implies the inclusion of the following activities in the content of musical classes and classes in decorative and applied arts, environmental protection measures: learning songs of an ecological orientation, creating products from natural materials in the process of decorative and applied creativity, participation in environmental protection activities.

## 5 Conclusion

The study included the study of the substantive and procedural characteristics of environmental competence. It is revealed that the structure of environmental competence includes knowledge, activity and motivation-value components and elements such as the ability to see and solve environmental problems; the need for environmental protection; the ability to apply environmental knowledge and skills in specific activities.

In the course of the research, the humanitarian model of the formation of environmental competence of students in additional education was substantiated. The basis of this model is the goal of determining the content-procedural characteristics of the formation of environmental competence of students in additional education by means of humanitarian technologies of music and decorative and applied arts. The humanitarian model created by us gives a holistic view of the content of the formation of environmental competence of students in additional education, its internal structure, the relationship and interdependence of its elements. It will help teachers to design ways to form environmental competence not only in the practice of additional education, which determines the practical relevance of the study.

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**Primary Paper Section: A**

**Secondary Paper Section: AM, AN**

## ADAPTIVE LEARNING OPPORTUNITIES OF THE FUTURE PRIMARY SCHOOL TEACHERS

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**Abstract:** This article analyzes the possibilities of using adaptive learning in the professional training of a future primary school teacher on the example of Mordovian State Pedagogical University named after M. E. Evseviev. The authors believe that the future of education lies in adaptive learning, which provides an opportunity to efficient individual trajectory plotting for the involvement of each student. It is argued that the introduction of e-learning in combination with the use of interactive technologies and elements of traditional learning enables future primary school teachers to become competent competitive specialists, which is confirmed by rating and monitoring indicators and indicate the constructiveness of the implementation of the presented model of adaptive learning in the educational process of the university.

**Keywords:** adaptive learning, e-learning, personalization, primary school teacher, pedagogical activity.

### 1 Introduction

The modern system of education is going through incessant changes, additions, transformations; today it has become one of its characteristics that are being comprehended and described in real time. In this regard, modern universities face the most difficult task of training a graduate who is able to constantly and freely compete with every member of the labour market.

According to the authors of this study, adaptive learning can contribute to the competitiveness of a graduate, which enables each student to improve his educational results, since adaptation implies the adaptation of the body to circumstances and environmental conditions.

All of the aforementioned points to the undoubted significance and relevance of the study. From the standpoint of improving the quality of education, it becomes clear that the pedagogical design of the educational process of university students is activated on the basis of adaptability, which comprehensively takes into account the dynamic characteristics of students that change during the study of the discipline, including the personal needs and goals of students, which we will call active adaptiveness.

### 2 Literature Review

The analysis of various sources shows that the future of education lies in adaptive learning, where the student gets the opportunity to study what interests him in an alternative way in order to interest others in it.

Back in the XVII century, Yan A. Komenskij (1982) had ideas that became the basis of adaptive learning. In the 50-60 years of the XX century, adaptive courses were developed by B. F. Skinner, A. K. Crowder, G. Pask, the ideas of these scientists were most widespread in the XXI century.

Adaptive learning enables to create effective conditions for the development of individual characteristics of future teachers. According to S. Oxman and V. Wong (2014), the goal of adaptive learning is to increase the level of educational results of students. G. Natriello (2017) writes about the personalization of education by adapting learning opportunities and educational practices to the individual inclinations of students. According to R. H. Gohar, R. M. El-Ghool (2016), adaptive learning is a

personalized system that meets the needs and abilities of students based on a strategy that supports and helps students overcome their problems. P. Moskal, D. Carter and D. Johnson (2021) note that adaptive learning is one of the forms of personalized learning. In the study of D. Catalan (2019), the effectiveness of technologies of online adaptive construction of the educational process for students' learning and academic performance was studied. A study by M. Coffin and J. Pérez (2015) aims to compare the effectiveness of the adaptive learning method and the objective assessment method. F. Zarrabi and H. Bzorgyan's works (2020) are devoted to the study of the effectiveness of argumentative writing of students on the Internet. Allen and McNamara (2016) discuss the integration of adaptive learning platforms into writing courses. S. A. Elborosly, R. A. Almudzhali (2020) point to the possibilities of improving argumentative essay writing through adaptive learning.

Russian authors also do not ignore adaptive learning. So, K. A. Vil'kova, D. V. Lebedev (2020) highlight the pros and cons of such training in the higher education system. E. V. Eliseeva, S. N. Zlobina (2011) present adaptive learning as a high-level technology for organizing professional training of students at a university. I. A. Krechetov, V. V. Romanenko (2020) demonstrate methods and principles of its implementation. Dagbaeva N. Zh., Selverova L. O. (2016). V. A. Shershneva, Yu. V. Vajnshtejn, T. O. Kochetkova (2018) point to the importance of electronic adaptive learning in the educational process. N. V. Vershinina, S. A. Babina, S. I. Lyugzaeva, L. A. Serikova (2020) point to the importance of personalization of the learning process for the formation of information culture of future primary school teachers. L. A. Safonova, I. V. Voinova, S. I. Prochenko (2020) write about the possibilities of using elements of adaptive learning in the training of future teachers.

Problems and prospects of adaptive learning in school are discussed in the writings of M. F. Samofalova (2020), the study of V. S. Budinkova (2008), N. P. Turinova (2006) reveal the possibilities of a personal trajectory plotting, individualization of the educational process. M. V. Antonova (2019) stresses the importance of personalization in educational work with the junior students.

Despite numerous publications devoted to the problems of adaptive learning, today there is no single integrated approach for the design and implementation of adaptive learning systems. The publications share a common view on the structure of adaptive learning, but differ in terms of its implementation. A characteristic feature of adaptive learning is the possibility of automation, and the leading principle is its personalization. Following Russian and foreign researchers, we adhere to the opinion that adaptive learning is the most effective form of personalization of learning. To do this, adaptive learning systems separate what students already know from what they do not know, and use the characteristics of the students themselves to offer suitable learning material.

### 3 Research Methodological Framework

The purpose of the research is to study the possibilities of using adaptive learning in the process of training a future primary school teacher. Research objectives are: to study the theoretical prerequisites for the use of adaptive learning in the educational space of a pedagogical university; to demonstrate the main directions of work on the trajectory plotting of professional development of a future primary school teacher in the context of the use of adaptive learning, in particular: to describe the practical application of e-learning in the system of training of a future primary school teacher, forms and methods of mixed (e-learning and traditional) learning, to present the possibilities of distance technologies in adaptive learning.

The following research methods were used in this article: theoretical analysis, generalization and interpretation of scientific data, study and generalization of pedagogical experience, method of pedagogical design (planning, modeling and implementation of classes using adaptive learning technology), analysis of the data obtained, classification, synthesis, generalization.

#### 4 Results and Discussion

According to A. J. O'Connell (2018), "adaptive learning, at its core, is learning that adapts to the student". V. P. Dobrica, E. I. Goryushkin (2019) believe that this is a teaching methodology designed to provide personalized learning, the purpose of which is to provide effective, efficient and individual learning trajectories for the involvement of each student. Analysis of sources has shown that a pronounced feature of adaptive learning is its automation, while personalization becomes the fundamental concept here, that is, the separation of what students know and do not know, taking into account their personal characteristics. On the basis of the data, the preferred information is offered, the necessary competencies are formed. The use of adaptive e-learning provides an opportunity to build an individual trajectory of students' training, to obtain proper learning results in a short time period with minimal costs, since it involves the allocation of the essential and preferable by difficulty individually for everyone. This approach requires the adaptation of the educational process to the learner. It is possible to adjust the educational process to the listener with the use of e-learning.

Interactivity, a variety of ways to consolidate knowledge, the use of the studied topics with a possible change in their sequence and content, a variety of educational materials, control of intermediate and final results is not a complete list of advantages of e-learning, which enables to introduce adaptive learning into the educational process, to achieve effective results.

In Mordovian State Pedagogical University named after M. E. Evseviev (MSPU), an adaptive educational trajectory is being built using e-learning technology in the process of professional training of future primary school teachers (within the framework of this study, the term e-learning is used in relation to blended learning, where "the educational process combines direct subjective interaction of teacher-student and the practice of distance learning," as S. R. Hiltz (2005, p. 60) wrote in his writings. The concept of "e-learning" is considered to be a way of subjective interaction "teacher-student", "teacher-student-student" through modern information and communication technologies in the framework of blended learning.

The practical application of e-learning in adaptive training of future primary school teachers at Mordovian State Pedagogical University named after M. E. Evseviev is described in sufficient detail in the works of S. A. Babina, N. V. Vinokurova (2019) and S. A. Babina and N. V. Vershinina (2021). Here are examples from the practice of teaching using adaptive learning with e-learning in classroom and independent work in the context of training future primary school teachers. At the stage of perception of the educational material, problem lectures, discussion seminars, Open Space multimedia presentations, illustrative videos or their fragments are used. As an independent work, it is offered in electronic libraries, the content of which is represented by electronic textbooks and dictionaries, video lectures. Interactive technologies (case-study; brainstorming session, etc.) and web technologies (working with social networks, online translators, websites of scientific libraries and specialized departments of universities on the Internet) are widely used at the stage of comprehension of educational material and the formation of concepts, and for independent work of students, exercises in test simulators, solving problems from electronic textbooks are offered. The stages of consolidating and improving knowledge, the formation of skills and abilities, the formation of practical knowledge and methods of action are represented by the technologies "Aquarium", Basket Method, video clips of the Russian language lessons on YouTube are analyzed, students create their own video tutorials

using Google services. At these stages, the training is especially personalized and transformed: students perform tasks related to professional activities (lesson preparation, research work), while the tasks are illustrated using various programs: Microsoft PowerPoint, Prezi, Kahoot.it; on-screen camera, Camtasia, Webinaria, etc. The rating system of current and final control allows monitoring educational activities. The use of information tools (search engines, Google Academy, forum, chat, e-mail, Google calendar, journal of point-rating assessment of knowledge) also contribute to the optimization and personalization of the professional training of future primary school teachers.

At each lesson, individual and group forms of work are used, which are implemented in interactive technologies (design and research activities, problem-dialogic, information and communication, case technologies, technology for the development of critical thinking, moderation, etc.). In the classroom, students analyze and critically evaluate scientific information from various sources. In the course of practical activities (project defense, discussions, role-playing games, production of speech situations, text construction), they build a strategy of oral communication using verbal and non-verbal means, show the level of proficiency in the system of norms of the modern Russian literary language. Future primary school teachers perceive, analyze and critically evaluate information, begin a dialogue, demonstrate the ability to clearly and competently formulate questions, defend their point of view. This is how interactive non-digital forms of learning are implemented.

The popular Moodle distance learning system helps to organize high-quality education at a distance, which enables to create web courses and fill them with educational content (interactive lectures and assignments, text pages, dictionaries, links, files). The platform's capabilities are easily transformed to meet the needs of a group or individual. The program is functional, accessible, aimed at bringing distance learning closer to full-time format and teacher-student interaction, personalization of learning. To organize lectures and practical classes, the BigBlueButton service is used, which supports the sharing of audio and video, slides, chat, screen, multi-user whiteboard, surveys, discussion rooms in real time, recording sessions and playing them for later viewing and enables to actualize adaptive learning, in addition, online video conferencing promotes emotional contact, so necessary in the process of distance learning.

So, mixed adaptive learning is implemented by the interconnection of online and offline components. Classroom work is mainly of a consulting nature and is aimed at analyzing problem situations, presenting practical lessons, the results of group project activities, offline monitoring and assessment of the level of formation of educational results. Online work is aimed at the formation of competencies in the performance of tasks and the implementation of project activities.

#### 5 Conclusion

The main direction in the context of the introduction of adaptive training of future primary school teachers in MSPU was the introduction of e-learning. E-learning does not become a complete replacement for the traditional classroom and extracurricular work of a teacher and a student. A significant feature of adaptive learning is the ability to effectively complement the traditional forms of organization of the educational process with the competent use of electronic educational resources. This is especially important in the context of professional training of future teachers, when in the learning process they are convinced by their own experience of the importance of the role of a teacher who not only transmits knowledge, but also helps to solve problem situations, assess, support a personal "human" plan, which no electronic resource can do.

The experience of implementing adaptive learning in MSPU enabled us to highlight the transformation of the roles of participants in the educational process:

- the teacher organizes and directs the cognitive activity of students, ensuring independence and activity: such cooperation helps students in self-realization and self-affirmation;
- the teacher and students share responsibility for learning outcomes, the fulfillment of educational tasks leads future teachers to realize the importance of learning outcomes for personal and professional growth, to the formation of high internal motivation;
- the use of e-learning enables the teacher to maximize the use of interactive technologies, research and independent work, which enables students to apply their knowledge and skills in similar professional situations, helps to become competent and competitive;
- the teacher uses reflexive management of students' cognitive activity, conducts rating and monitoring activities, the student shows readiness for introspection and self-assessment, gets the opportunity to independently control and adjust the level of his personal and professional development using e-learning tools.

Monitoring indicators, positive feedback from practice managers and employers about graduates of Mordovian State Pedagogical University named after M. E. Evseev indicate the constructiveness of the implementation of the presented model of adaptive learning in the process of professional development of the future primary school teacher.

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## SPECIFIC FEATURES OF PROMOTING THE SERVICES OF STATE EDUCATIONAL INSTITUTIONS

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**Abstract:** The relevance of the study consists in implementation of promotion tools corresponding to the current market conditions in state higher educational institutions. The objective of the research is to discuss tools for promoting services that are most aligned with the possibilities of higher educational institutions. Given the frequently limited funding, a quite narrow set of tools are used; however, at present, it is important to make use of a broader range of opportunities. The paper examines principal promotion tools which are accessible to the greater part of higher educational institutions; it presents the experience of implementation of several of them. Their validity and satisfactory efficiency are demonstrated.

**Keywords:** state educational institutions, marketing, promotion tools, educational services, institution website, social networks, special advertising platforms.

### 1 Introduction

At present, both commercial companies and state budget-funded institutions operating in the educational sphere have the aim of keeping their place in the market and being its active participant further on. However, the majority of them have to take into account all changes of the environment (first of all, its cultural factor has to be viewed individually and in a particularly serious way). Similarly, they have to consider rapidly changing demands of their customers – who are applicants and students – as well as their growing expectations as for the quality of provision of not only educational but also related services offered by the educational institutions. They have to bear in mind the continuous growth of standards for the services provision and a number of other market trends and developments, too.

Due to the status of state budget-funded educational institutions, and the frequently limited financing of marketing measures, they only use a certain set of promotion tools (if any) which differs to some extent from those employed by business units. The two limitations (the budget one and the one related to the budget use options) affect simultaneously the opportunities of promoting the services rendered by the institutions, too.

Taking into account the rapid development of approaches to the educational process in general, higher educational institutions must be prepared for "applicants of the future" and then to "students of the future". They are going to impose high requirements for the educational and related services rendered to them both when choosing a higher educational institution and further on, in the process of learning.

Although there are diverse promotion tools, state educational institutions implement in their activity only some of them. The authors believe it essential to adopt the experience of other higher educational institutions and make use both of the tools having shown impressive results by the present and of modern technologies.

### 2 Literature Review

Within marketing activity of educational institutions, enhancing their representation on the Internet based on studying the content published on their competitors' official websites remains the most relevant focus area as of today. This is pointed out in works of A. A. Maltseva (2018), N. V. Bondareva, N. A. Bezrukova,

Yu. N. Zhulkova, and T. E. Lebedeva (2019). Questions of forecasting the needs of the target audience (applicants, students, course participants), finding out the most attractive for them information sources, and a number of other aspects were considered in the work of D. Yu. Vagin, O. A. Nemova, and V. V. Retivina (2018); the authors presented results of the sociological survey of students of Minin Nizhny Novgorod State Pedagogical University.

Moreover, within the topic under consideration, the authors believe it important to highlight expedience of taking into account general questions of marketing, too, in the activity of higher educational institutions. So, in I. A. Artashina's work (2005), the author discusses theory and practice of marketing activity in various spheres of the economy, education included. The study by I. A. Artashina, V. Yu. Dudina, and Yu. N. Zhulkova (2020) details questions of the use of theoretical and practical capacities of marketing, as well as working with stakeholders, which is quite applicable in higher educational institutions, too. S. N. Kaznacheeva and V. A. Bondarenko (2016) consider the possibilities of using low-value ways for attracting customers, which is relevant for state higher educational institutions.

Studying the said topic in more detail has shown that recently, this subject has gained relevance in the focus areas listed below. As L. I. Ambartsumyan, L. I. Filimonova, M. A. Filimonova, and E. V. Shevchenko (2020) believe, promotion of a higher educational institution demands a special vision of its potential audience, plus the relevant skills of teachers and employees of all departments of the higher educational institution.

Let it be noted that paying attention to project activity which is winning popularity is of no less importance within promotion of higher educational institutions. So, in the work of L. F. Sukhodoeva, D. V. Sukhodoev, D. Yu. Vagin, E. V. Yashkova, Yu. N. Zhulkova, and O. T. Cherney (2021), the authors noted it was relevant to create teams composed of people who are capable to carry out the modern technologies of management in practice, and having training process organization skills was essential for the project team. The research by N. D. Sukhodoev, D. Yu. Vagin, E. V. Yashkova, Yu. N. Zhulkova, N. L. Sineva, and L. Yu. Shobonova (2021) highlights the importance of such procedures as organization of work meetings, the process of planning works on the project, and others. If higher educational institutions understand the above listed scope of knowledge and skills which are necessary for modern employees, implement project management, and cooperate with other institutions of education or commercial enterprises, this will yield further competitive advantages which it is important to cover in advertising campaigns.

Further on, working with students and engaging them for fulfilling projects will be an undoubted advantage of a higher educational institution within developing the promotion program for the services offered. So, in the work of A. A. Miroshnichenko and D. R. Merzlyakova (2020), they present results of an expert appraisal of master degree students' ability to organize teams of students and manage them. P. G. Labzina and S. G. Menshenina (2021) confirm the necessity of developing flexible skills for students to achieve further professional success.

As the practice of working with students of the authors of this paper has shown, it is employment in the specialization that holds special significance for students when selecting a higher educational institution. With regard to this, it is essential to not only organize interaction of higher educational institutions with large enterprises operating currently but also to openly announce such opportunities to students being enrolled. Meanwhile, according to V. G. Lizunkov, M. V. Morozova, A. A. Zakharova, and E. Yu. Malushko (2021), the principal thrust has to be made on the resident enterprises, which will

ensure not only the higher interest in their partner institution in general but specifically in its educational services.

### 3 Research Methodological Framework

The objective of this paper consists in finding out the problem range of using tools of promoting the services of state educational institutions.

Tasks of this paper include: summing up the results of communication policies; analyzing the experience of implementation of some promotion tools into the activity practice of educational institutions; identifying ways of fulfilling the marketing services promotion strategy as applied to state educational institutions of higher education which are the most promising from the contemporary point of view.

Methodological basis of the research relies on the methods of generalization and abstraction, as well as the situational approach.

### 4 Results and Discussion

Communication policy of budget-funded educational institutions consists in developing and using a set of promotion tools, with the official website of a higher educational institution among them. Some other tools include presenting the website on the profile (theme) portals, interacting with the mass media, presenting it on the Internet in general, by placing the information in social networks, among other things, and organizing personal sales. The policy suggests approaches to enhancing efficiency of the use of the above means, too.

A higher educational institution' having an official website is currently the standard for all institutions without exceptions. According to Order of the Federal Education and Science Supervision Service "On approval of the Requirements for the structure of the official website of an educational organization in the Internet information and telecommunication network and the information presentation format" (2020), there is a definite list of information to be presented on an institution's website.

Meanwhile, for websites of higher educational institutions, one of serious issues is the strictly defined form, due to which a website of one institution looks too similar to that of another. However, one of the principal marketing requirements for a product is the possibility of its (and its producer's, i.e., a particular higher educational institution) identification. Thus, it makes sense to speak about completing the market requirements presented directly for the official website. Among these, the condition of its correct functioning has to be noted: that is, the website has to be working and accessible, and the information provided on it must be up-to-date. Moreover, the website must be convenient for its visitors, and the users' interests in terms of getting the information have to be taken into account necessarily.

Promotion of the institutions, as well as their services directly, can be performed by presenting them on profile portals. For example, higher educational institutions can be represented on such platforms as Vseobuch, ProVUZ.ru, Ucheba.ru, Edunews, and others which are in fact the Internet-based reference books for potential customers (applicants and students) and which have quite heavy traffic. Studying a number of scientific works (Plokhova et al., 2021; Sirotina & Egorova, 2018) has led the authors to conclude that mass information media (the mass media) play a fundamental part in the way the activity of a particular higher educational institution is perceived (the same holds true for a commercial company). Hence, interaction of the higher educational institution with the mass media will play far not the last role in its promotion. Importantly, costs for marketing measures can also be reduced by engaging students in working on this focus area (Medvedeva & Marik, 2015).

The principal platforms most frequently used by the institutions for promotion are Vkontakte, Odnoklassniki, Instagram, Facebook, Telegram, and YouTube. However, in the modern students' opinion, "one of the popular digital platforms for

carrying out enlightenment activity of higher educational institutions, as well as for promoting their educational services, is the YouTube video hosting" (Ochildiev & Nikitenkova, 2020, p. 245).

Personal sales are quite a curious tool for promotion which can be highly effective for some institutions (Ershova, 2017; Perevoschikova, 2020; Prosalova & Nikolaeva, 2018). So, for example, most active and talented teachers can launch their channels on social media upon their wish (which is an indispensable condition); this will ensure positive advantages both directly for them and for the higher educational institutions they work at.

At present, one can speak about the availability of certain experience amassed by state educational institutions in using some promotion tools.

There are many works focusing on websites as one of the principal tools for promotion. For example, in the work of M. L. Belyashova (2018), some features of positioning modern Russian and American higher educational institutions by means of a website have been found. The experience obtained by them can be used by Russian higher educational institutions in their further practice, too.

In the work of E. D. Kostyrya (2020), the author presented results of comparative analysis of two websites: those of the Institute of Social and Political Sciences of the FSAEI HE "Ural Federal University named after the First President of Russia B. N. Yeltsin" and Heidelberg University. Among other things, they were analyzed as an advertising platform, and specific means were identified for promoting educational services. This can be taken into account in the work of various educational institutions, too.

A. A. Maltseva's research (2018) targeted assessment of the Internet-based resources of Russian universities designed for attracting foreign applicants. Proceeding from analysis of the Internet resources of 150 higher educational institutions according to the system of criteria elaborated by the author specifically for the purposes of the research, she rated the current condition of the official websites of higher educational institutions, their usability, convenience, and usefulness for the potential foreign applicants and students. According to the research findings, the author developed some recommendations which are replicable and scalable for specific universities as required.

Aspects of accomplishing maintenance of an educational organization brand directly by efforts of students of the particular higher educational institution are of interest, too. Such an experience is detailed in the joint work of K. E. Vinogradova and A. A. Kashchuk (2018) which discusses the experience of building a media holding company at the faculty of social technologies of the North-West Institute of Management (branch of RANEPa).

Social media are currently a fundamental promotion tool for educational institutions; keeping them is not associated with the institutions' status in any way, which is confirmed by many modern authors. Moreover, most of higher educational institutions extensively share their experience with peers in questions of creating and promoting official pages of the institutions in various social networks. So, in the paper of A. A. Babaeva and N. S. Gheghelova (2019), they outline the practice of maintaining the official page of the Federal State Autonomous Educational Institution of Higher Education "People's Friendship University of Russia" on Facebook, with examples of the most successful material formats provided. The paper of E. V. Sumarokova and E. D. Rassokhina (2018) contains some information which is useful for SMM and PR managers of higher educational institutions along the line of improving position and image of the official pages of educational institutions in social networks. The authors consider it important to pay special attention to the work of Yu. Yu. Shitova, Yu. Yu. Shitov, and M. S. Kokorev (2018) in

which the scientists give results of studying the activity of students and graduates of higher educational institutions on social media. They also discuss various options of using the obtained information, among other things, as a tool for promoting educational institutions which enables them to get in touch with their target audience, too. Importantly, the authors of the said paper suggest their own technique of collecting and analyzing the online data which will allow conducting the educational services promotion strategy in a more targeted way.

The authors believe that currently, engaging bloggers for cooperation and performing crossover promotion are some of the most promising ways for fulfilling the strategy of promoting the educational services of state institutions. Working with bloggers is not new as a promotion tool; however, far not all the state educational institutions use such interaction, even though its potential is fairly high. In terms of expedience for the institutions, the same can be said about the possibility of their supporting each other and using the so-called crossover promotion in their activities – when a set of measures is carried out jointly by two institutions having the same target audience while not competing with each other.

## 5 Conclusion

According to the results of the research conducted, let some points be noted which are expedient to be adhered to when carrying out marketing measures aimed at promotion of state educational institutions and their services. So, it is extremely critical to pay special attention to corporate identity, i.e., all marketing measures in use must be prepared in one and the same style, have the uniform color scheme and substantial layout. In carrying out any measures, the principal agents are the personnel of an institution who have to be completely prepared for performing their direct duties. Meanwhile, special attention must be paid to the employees representing the institution at various open events.

For obtaining a positive result from implementing the outlined and similar measures, a sine qua non condition is to conduct them on a regular basis.

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**Primary Paper Section: A**

**Secondary Paper Section: AE, AM**

## DEVELOPMENT OF METHODOLOGICAL SUPPORT FOR ASSESSING THE PERFORMANCE OF EDUCATIONAL INSTITUTION EMPLOYEES

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**Abstract:** Relevance of the topic of this paper consists in growing importance of assessing efficiency of work activities of educational institution employees. It is one of the fundamental and challenging tasks that managers of higher educational institutions have to face. The objective of this research is to determine approaches to the procedure of assessment and to develop their substantial content. The materials outlined in the paper can be of use for managers of various levels for organizing and subsequently performing employee assessment measures within efforts to enhance competitiveness of higher educational institutions in relation to their own employees, consumers of educational services, and the public in general.

**Keywords:** state budget-funded educational institutions, educational services, employees, personnel, performance, assessment of performance, performance-based contract.

### 1 Introduction

According to the Federal law "On education in the Russian Federation" (2012), and Resolution of the Government of the RF "On approval of the nomenclature of positions of pedagogical workers of organizations performing educational activity and positions of heads of educational organizations" (2013) which regulate names of positions of specialists, personnel of higher educational institutions can be conventionally subdivided into the managerial one (directly the head, managers, deputies, and others) and the academic teaching staff (subordinate employees). The importance of an employee for an institution is determined by the effectiveness (efficiency) of the employee's work, with various factors affecting each individual employee, regardless of the category he or she belongs to. So, given the variety of specific features of activities and, simultaneously, the shared point of improving their efficiency, it will be relevant for an educational institution to implement a system for assessing effectiveness of activities of its employees. Such a system can be developed as an in-house project and as an outsourced one. Whatever the case, it is not only the relevance of appraisal conducted but also the psychological climate among the employees that depend on the developed criteria and the techniques used. Subsequently, directly during assessment of the employees' work, the question of how efficient the work of the educational institution employees is will have to be answered.

For higher educational institutions, the process of working on the personnel assessment criteria, as well as results of the conducted assessment of the employees' performance, will contribute to identifying "bottlenecks" in the progress of the institutions in general, of their individual units, and specific workers. Its findings will lead to the possibility of creating a set of measures to enhance efficiency of activities of the higher educational institutions.

### 2 Literature Review

Aspects of performance of higher school employees are explored by many Russian scientists. Among the multitude of works dealing with this range of topics, let the scientific papers of the following authors be noted specifically. So, N. V. Churdikova and E. L. Sokolova (2019) determine features of work of the academic teaching staff and detail approaches to assessing its efficiency. N. N. Kochetkova, N. A. Iglina, and T. V. Ryabova (2018) pay attention to questions of transparency in remuneration, shaping the employees' loyalty, as well as their commitment and work satisfaction. E. V. Myalkina (2019)

considers the education quality diagnosing system based on Minin University. Notably, these authors pay attention to the fact that teachers' work and pay results must take into account not only the opinion of the very teachers but also the one of actual consumers of the educational services – students (Derenko, 2018; Kochetkova et al., 2018).

Many works discuss the possibility of signing performance-based contracts based on which conditions and opportunities can be created for a fair salary system for higher school teachers (Balatsky, 2018; Danchevskaya, 2018; Chigisheva, 2021; Strielkowski & Chigisheva, 2019; Nutrikhina, 2018; Shapkin & Shkolyar, 2020) they also address some disadvantages in teachers' compensation plan (Shibanova & Kochanzhi, 2020).

Special attention should be paid to the work of S. V. Sharova and D. I. Kutsikova (2018) where the authors present an approach to assessing the quality of publication activities of higher educational institution teachers based on expert methods. They also suggest further criteria for assessing teachers' methodological work.

Alongside this, the presence of urgent debatable questions within this topic should be noted because a number of authors (Kislov, 2017) are active voicing their opinions on some most critical aspects related to compensation of the academic teaching staff. According to the authors, some of them are quite justified and require immediate action.

### 3 Research Methodological Framework

The objective of this paper consists in developing an integrated approach to assessing performance of employees of educational institutions.

Tasks of this paper include considering the existing approaches to performance assessment, compilation of the list of criteria, and lines for its improvement. The latter have to take into account the possibilities of using not only universal but also individual indicators for assessing performance of employees, depending on their positions and duties carried out.

Methodological basis of the research relied on the methods of analysis and synthesis, generalization and abstraction, content analysis, situational approach, and studying works on pedagogy.

### 4 Results and Discussion

Currently, the problem of assessing activities of the academic teaching staff of educational institutions is becoming increasingly discussed, which is associated with higher importance of competence, loyalty of the personnel and some other factors holding a special significance in conditions of continuous industry-specific changes and resource limitations. Objective evaluation of the existing ones and elaboration of new approaches to appraisal of activities of the staff of higher educational institutions are determined by the necessity of creating solutions in line with the development strategy of the institutions.

Some attempts of creating scientifically grounded criteria for assessing workers in various branches of industry and economy are known to have been made within labor psychology at the beginning of the previous century. For this purpose, they analyzed a worker's professional activities and singled out professionally important qualities, i.e., those influencing the worker's performance according to the principal characteristics. Further on, these qualities were used in compiling job profile diagrams – standards and requirements for jobs backed up scientifically. They are a sort of the master model of a specialist. There are job profile diagrams for virtually all the known occupations. So, for example, the following qualities belong to the professionally important ones for the above teachers: knowledge of their subjects and techniques of teaching;

comprehensive knowledge and a broad outlook; the high level of intellectual development; good memory; developed communication skills; elocution; organizer abilities; love for children; friendliness and tactfulness; developed charisma, and others (Frolov, 2018). Moreover, importantly, implementing such an efficient tool for diagnosing the quality of education as a teacher's job profile diagram is the objective necessity during the periods of distance learning (Zhghenti, 2020).

Having studied scientific works on the topic in question, the authors have come to the conclusion that there are a number of principles which allow enhancing the reliability (i.e., relevance, clarity, transparency, and objectivity) of assessment. Firstly, it is essential that assessment of employees' work be integrated. Secondly, criteria for assessing activities have to be selected skillfully. Thirdly, the assessment procedure has to contribute to the objectivity of evaluating employees' work.

As an example, let several variants of appraisal of the work of pedagogical staff be given. The first variant relies on the assumption about two principal kinds of assessing the workers are known and used: the direct one representing the results achieved by them, and the indirect one characterizing rating teachers' activities according to qualities influencing their achievement of results. The latter includes measuring the qualification level, professional skills, business qualities, and their professional excellence level. For assessing employees' work and performance, it is expedient to use integrated assessment taking into account not only their work results but also features of their work behavior (here, the assessment by students is applicable, too) and their professional achievement extent. The principal objective of assessment consists in making a particular employee interested in improving efficiency of his or her work by influencing the employee's behavior, as well as in seeking personal development, acquisition of qualifications, and in undertaking responsibility for the quality of performed work (based on assessment of students' knowledge, among other things) (Danchevskaya, 2018; Kochetkova et al., 2018; Ponachugin, 2020).

Usually, assessment of employees is conducted annually in the form of performance appraisal, and its findings can be used for enhancing the stimulating role of compensation. However, most frequently, the data are required for reports but not for provision of material incentives for the employees (as the majority of cases go).

In practice, the first criteria elaboration variant is applied quite frequently, with each institution establishing its own criteria depending on the sphere of activity. For example, to find out general appraisal of an employee's professional excellence, they can use criteria subdivided into the following groups:

- appraisal of pedagogical workers' business qualities (independence in work, readiness to undertake responsibility, any disciplinary penalties, interaction with other employees for completing tasks, establishment and maintenance of work relations with colleagues);
- assessment of employees' level of knowledge and skills (the relevant education, experience of work in the specialization, knowledge of specific features of their occupation and specialization);
- evaluation of the level of mastering adjacent occupations (readiness for continuous skills enhancement, the quantity of adjacent occupations mastered).

The results can be measured using a scoring system and affect the salary (its variable component) directly.

The second variant consists in measuring efficiency of work activities, which is performed proceeding from the three principal approaches to HR management – the economic, organic, and humanist ones (Makarova, 2011).

Based on these approaches, there are the following principal performance assessment concepts as applied to activities of education workers:

- economic efficiency allows substantiating results of activities of an educational institution in general by comparing savings (profit) and costs (investments). Here, it is standard economic indicators that are principal;
- social efficiency creates the possibility of measuring the social nature of work of higher school employees. In this case, the principal indicators include: the average salary of one employee; the relative share of the employee payroll in the revenue of the educational institution; salary growth rates for individual categories of employees; the work discipline level; personnel turnover rate; and losses of working time;
- organizational efficiency measures the level of organization of work. Its principal indicators are the following: reliability of an employee's work; the level of a teacher's potential; the quality of their work, including modern information technologies implemented in teaching (Vayndorf-Sysoeva & Pchelyakova, 2021; Černý, 2021); the use of experience of other higher educational institutions in their work (Chelnokova & Tyumaseva, 2019), and a number of associated indicators (rating the quality of work of the higher educational institution management (Sedykh & Zhitkova, 2021), among which there are the uniformity of teachers' load throughout the year and the increment rate of the teaching staff;
- assessment according to the final results allows identifying results and pattern of work of all institution employees over time. Meanwhile, the principal criteria are: the scope of services sold (revenue); income and profit of the institution; and profitability level of educational programs carried out at the higher educational institution (Shishkina, 2019);
- productivity management is the basis for planning and analyzing the use of work of higher educational institution employees. In this group, the principal indicators are the average number of staff broken down according to categories; work time losses;
- quality of employees' labor life. Among the principal criteria of this group, one can mention the following: a positive effect on personal life; loyalty to the institution and enhancing its level; no apathy for work; development and efficient use of work (intellectual work included; for example, when implementing individual projects); employees' participation in life of their institution (exclusively upon their wish); existence of a real possibility of advancing along the career ladder; progress in making one's career; positive social and psychological relations with other members of the staff; decent working conditions; employees' economic well-being (including that ensured by performance-based contracts); lack of excess stress at work, and some others.

In the third variant, employees' work motives can be taken as the basis for assessing their efficiency (Anokhin, 2018; Zhukovskaya, & Peshekhonov, 2018; Ponomareva & Akifyev, 2018). Generally, motivation is considered as a total of the external and internal process drivers determining the quality and forms of an employee's activities while also adding to them some focus on achieving the set objectives. At the beginning of working along this line, one has to find out (e.g., by personal interviews or (which is more preferable) an anonymous questionnaire survey) the value orientations of work activities of the employees. It is expedient to bring down findings of the conducted questionnaire survey (preferably, an anonymous one, without any follow-up questions which could allow identifying a particular person) in the form of a table giving the ratio of positive answers to the total quantity of the surveyed ones (e.g. in percentage points). Such visualization of the survey results will clearly highlight the unfulfilled motivation factor, which will allow working in the found focus area persistently and developing an action plan to remedy the flaws.

In the opinion of the authors of this paper, the above approaches to appraisal of work of higher educational institution employees are rather basic, i.e., they need elaborating and making more precise within the activities of a specific educational institution.

The authors believe it essential to note that for higher educational institutions, it is expedient to develop such an assessment system as to contain no controversies associated with a particular employee's possibility and necessity to correspond to all of or greater part of the criteria. The very procedure will only have practical meaning in the case when a number of conventionalities are observed. Among them, there can be: engaging the personnel into developing the scale for assessment, carrying out blind crossover assessment, compiling individual assessment systems for workers of various categories, and other tools for managing efficiency of their activities.

Moreover, depending on their categories and positions held, employees can also be eligible for the universal criteria of assessment (labor utilization rate, productivity factor, quality factor of the works completed) and a number of others depending exclusively on their job duties. The assessment will be the most objective in the case when its underlying criteria are economically substantiated, transparent, clear, and made known to the employees' on time.

## 5 Conclusion

Assessment of performance shows the educational institution managers a clear picture as for the extent of correspondence of the employees of all categories to their positions. It measures efficiency of work, expertise, and competence levels of each of them in fulfilling the assigned functions. Using all of the presented approaches or some of them for assessing activities of higher educational institutions frequently leads to a negative attitude of their employees and reduce their work efficiency.

For improving the system of assessing activities of scientific and pedagogical workers of higher educational institutions, some adjustments to the system are suggested in the part of correspondence to its principal objective, enhancing performance. In its turn, this will have an effect on the employees' salary level, their career growth, positions held, and successful work of the personnel in general.

As further recommendations for working within the topic in question, one can note the existence and, consequently, more detailed study of fulfillment of one more approach relying educational institutions obtaining two effects, the economic and the social one. So, for assessing performance, criteria can be used which depend on the activity profile of the very institution and of a particular employee and target measuring the economic (the level of achieving objectives; scope and quality of work, etc.) and social effect (personal features; concealed opportunities which will be able to render working at the institution more efficient, and so on).

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**Primary Paper Section: A**

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## THE POTENTIAL OF USING VIDEO GAMES IN THE EDUCATIONAL ACTIVITIES OF THE UNIVERSITY

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**Abstract:** The relevance of the article is due to the necessity to respond to the challenges posed by the modern mediatized reality of the education system. The purpose of the article is to identify the prospects for the use of video game products in educational activities, as part of the gamification of the educational process. To achieve this goal, the authors propose to turn to the analysis of modern video games, which involves the use of narratological and ludological approaches. In the process of researching and analyzing the games "Physicus" and "Chemicus", "This war of mine", as well as "Crusader Kings 2", the authors come to the conclusion that each of these examples has potential for use in the educational process at the university.

**Keywords:** gamification, video games, education, gameplay, competencies, ludology.

### 1 Introduction

The world expert community has long recognized the existing system of higher education as not meeting the requirements of the time, rapidly becoming obsolete in its forms and content (Veliyev, 2015; Kochergin, 2009; Lakhina, 2014; Khairullin, 2020). Statements of eminent modern teachers, both theorists and practitioners, related to the need to modernize the field of education have been repeatedly recorded (Ilyin, 2020). Today, almost every element of school and university education is criticized: the organization of the physical space of the school in general and each class in particular, strict rationing of attendance in a fixed group of students, stratification of groups of students (Stolbov, 2015), industriality, which manifests itself in the organization of education as a streaming production, without taking into account individual needs, flexible trajectory of the educational process as a whole (Kalney, 2016). The necessity and relevance of such criticism becomes obvious if we turn to comparing the attractiveness of the types of activities potentially available to students with the attractiveness of the educational process itself, especially at the university. Education as a student's activity in this comparison remains far behind, the whole system works against the interest in education arising in the student, since the modern techno-recreational sphere offers a lot of pastime options that seem much more tempting than educational activities.

It is no secret that a number of authors have repeatedly expressed concern that video games and students' passion for them pull the motivational resources of the latter from the learning process (Porotova & Afanasyeva, 2019; Chumpurova, 2014). Indeed, it is not difficult to notice that the student will plunge into the game space with a great desire and will make efforts to learn how to play a new game for him, then he will perform this or that educational task. At the same time, it is also worth noting an important fact: sometimes learning to play something at a fairly good level can be no less difficult than mastering a learning task. And, nevertheless, with a comparable level of complexity of tasks, the student prefers one activity to another, it is fair to ask the question: why is this so?

Video games as a special type of media have specific properties of transmitting and broadcasting information (Bolotnova & Klyuev, 2019). When comparing alternative types of media, it is possible to discover certain advantages of video games in the context of human involvement. To begin with, let's turn to the classical text version of the transmission and broadcasting of information from a medial point of view. The text requires a

special effort from the reader to immerse and engage in the process, since the reading procedure itself requires a high level of energy consumption, concentration of attention, and, in addition to it, the educational material itself is difficult to master, obtaining and working with information in this way is difficult and requires effort. Deciphering linguistic constructions, restoring logical and hierarchical connections of ideas and their sequences is a constant strenuous work of the brain, intentionally aimed at the effort to retain attention. Of course, the text can be combined with different forms of visualization of the material: visual illustrations, infographics, diagrams. Such techniques increase the degree of learning the material. But, it is worth noting that this kind of tricks is precisely why they are productive in the context of increasing the efficiency of learning the material, that the medial text format itself is complex and time-consuming to perceive.

Nevertheless, the educational system can already turn for help to the field of activity, which, as we saw earlier, perceived as hostile and even opposing itself. In this context, it becomes relevant to analyze the possibilities of using video game elements in educational activities and in the future their inclusion in the educational process, based on the narratological and ludological analysis of the examples presented. In our case, commercial video games will be considered, the focus of which at first glance is far from educational.

### 2 Literature Review

At the present stage, the issue of the qualitative improvement of the educational process is raised by many researchers. In particular, the topic of gamification of the educational process, studied on the basis of Minin University by Babaeva A.V., Klyuev A.A. (2017), is also relevant. In the course of this study, the fundamental mechanisms of the relationship between the types of gaming activity and their applicability in gamification practices in the framework of working with human resources in order to organize and improve labor efficiency were identified.

Other works explore the relationship between education and gamification practices (Akchelov & Galanina, 2019; Bijieva & Urusova, 2020; Bogost, 2015; Gimelstein et al., 2020; Zvonareva & Kupalov, 2021; Ponachugin, 2020; Vagin et al., 2020). For example, Bijieva S.H., Urusova F.A.-A. (2020) focus on the prospects and risks associated with gamification. Bogost Ya. (2015) criticizes the gamification process. Zvonareva N. A., Kupalov G. S. (2021) attempt to determine the positive and negative effect of the introduction of gamification practices into the already established system of higher education, working out the theoretical and methodological foundations for combining these processes. Indeed, as Bogost Ya. (2011) rightly point out in his work "Gamification is bullshit", presented as a commercial service, gamified products are a "soap bubble" without content. Such criticism of gamification is really appropriate to the extent that the gamified product itself is the fruit of the consulting services market, generated without a proper understanding of the functioning of the processes associated with it, a fundamental understanding of the role of gamification in the system of HR services.

Another group of researchers focuses on the analysis of specific gamification practices and the success of their application in education, for example, this is done by Akchelov E.O., Galanina E.V. (2019). The use of gamification elements in economic education is considered by Gimelstein E.A., Godvan D. F., Stetskaya D. V. (2020). The use of auxiliary visualization and gamification tools in the framework of subject training is studied by Klyuev A.A. and Klyueva E.N. (2021), Ponachugin A.V. (2020). The practice of gamification is perceived as an auxiliary practice in the educational process during distance education due to the consequences of the coronavirus pandemic.

In addition, the discussion of ways to introduce gamification practices into scientific research, considered by Bykov E., remains active (2015). It should also be noted that gamification practices themselves still remain under sharp criticism regarding their effectiveness and justification of implementation. Attempts are being made to revise the declared successes in this area, both in Russia (Salin, 2015) and abroad (Bogost, 2011).

The issues of students' formation of the meaning of life and the role of video games in this process were investigated by Ermakov S.A. (Ermakov et al., 2019, 2020), Nemova O.A. (Nemova et al., 2021). Researchers, in particular, express serious concerns about the loss of humanistic educational potential as a result of the replacement by video games of the traditional educational process with the direct participation of the teacher.

### 3 Research Methodological Framework

**The purpose of the study** is to identify the prospects and possibilities of using video game products in the educational activities of the university, as part of the gamification of the educational process.

#### Research objectives are:

1. to identify and characterize video games for further research;
2. to carry out a narratological and ludological analysis of the selected video games, which enables to identify potential prospects for their use in the educational process of the university.

The methodological basis consists of the approaches of the ludological and narratological analysis of video games. They have proven to be successful and very common in the study of video games and are based on the ideas of classical game studies theorists Aarseth E. (1997) (narratological approach) and Yuul J. (2004, 2008) (ludological approach). The basis of the narratological approach is the analysis of video games from the perspective of narrative and plot research. So, narratologists mainly turn to how exactly events develop in the game world, what is the figurative and symbolic connection of elements, whether the plot of the game is a consistent narrative and what values and ideas this narrative conveys. In the ludological approach, the focus of attention shifts to the analysis of those game mechanics that make up the activity interaction of the player and the game world, which mechanisms and rules guide the process of gaming activity, how the idea of the relationship between actions and consequences is formed. Within the framework of gamification, it is necessary to take into account both levels of understanding of processes, since the player, on the one hand, must be involved in the action in the game space at the level of the narrative (given conditions), and, on the other hand, understand and adequately perceive the specifics of interaction with the game world. Correlated together, the results of a comprehensive analysis enable us to identify those elements embedded in video games that can potentially enable the use of video game products as gamification practices within the educational process at the university.

### 4 Results and Discussion

Initially, three sets of games were selected to identify potential tools suitable for use in the educational process. At the same time, we relied on a number of criteria: accessibility, comprehensibility for a new player, low system requirements, the criterion of genre variability and the availability of material in games that can be used for illustration and in practical work in a number of fairly common disciplines in the field of study 44.03.01 "Pedagogical education", 44.03.05 "Pedagogical education with two training profiles", 47.03.01 "Philosophy". Thus, the study presents an analysis of games of the interactive quest genre ("Physicus" and "Chemicus"), a survival strategy ("This war of mine"), a real-time global strategy in the medieval world ("Crusader kings 2"). Video games belong to different genres and different periods of creation (from the early 2000s to those currently supported by the developer), this choice was

made in order to show the possibility and prospect of the potential of using video game products of different genres and created at different times in the university educational process.

Furthermore, we turn to the sequential analysis of each presented video game product. The first and closest example to the essence of the educational process is a whole series of games released in the 2000s "Physicus" and "Chemicus", developed by the studio "Ruske and Puhretmaier Edutainment GmbH" (Germany). Despite the fact that the games were released a long time ago, they still remain relevant and in demand. The essence of the gameplay revolves around a detective story, during which the player will not only move through the twists and turns of this plot, but also solve quite non-trivial chemical and physical problems. Thus, from the point of view of narratology, an important condition is fulfilled, the player plunges into the world of the game and is carried away by the plot unfolding there. The tasks themselves are woven into the gameplay in such a way that without solving them, it is impossible to advance along the plot of the game. In addition, reference materials are included in the game, so that without interrupting the gameplay it is possible to turn to the theoretical basis of physical and chemical processes. In this aspect, the ludological potential of these video games is revealed, since game mechanics work in such a way that without solving the problem, a participant who is passionate about the plot and the mystery of the game cannot move further in his journey through the game world without solving the task assigned to him.

Thus, the player, if necessary, should turn to the study of reference materials, master a certain set of theoretical and practical skills. The game establishes a connection between theory and practice and there is a criterion for evaluating the success of mastering the material, and also, which is an essential factor, there is an element of encouragement through the player's promotion along the storyline.

The built relationship between available and improvised reference materials, tasks formed on the basis of real physical and chemical processes, as well as the game world, which serves as an element of involvement and interest, create a sense of immersion of the student / player in this software product. This interrelation of the game world (detective story, riddles) and the need to solve physical or chemical problems to move forward makes this example as suitable as possible for use in the subject training of students in the field of study 44.03.05 "Pedagogical education with two training profiles" "Mathematics and physics", "Biology and chemistry", in the first-year disciplines "Physics", "Chemistry", "Concepts of modern natural science", as well as for a wider group of areas, including humanities, for example 44.03.01 "Pedagogical education", 44.03.05 "Pedagogical education with two training profiles", 47.03.01 "Philosophy".

Another example is the game "This war of mine" from the studio "11 bit studios" (Germany), released in 2014. The narrative and entourage of the game does not allow at first glance to assume that its gameplay, semantic content and game mechanics can be used as part of the educational process. But potentially such an opportunity is present because it is necessary to study:

1. ethics and decision-making, self-analysis and analysis of the situation of war and crisis in the framework of the study of social studies, ethics and axiology courses at the university in the field of study 47.03.01 "Philosophy";
2. fundamentals of management within limited resources, economic features of crisis situations, the ability to build the logic of provision, distribution and consumption, which can be auxiliary material in the framework of mastering the courses "Fundamentals of economics" in the field of study 44.03.01 "Pedagogical education", 44.03.05 "Pedagogical education with two training profiles", 47.03.01 "Philosophy".

Presenting at the level of mechanics a simulation of economic management of extraction and distribution of resources in conditions of their radical limitations, at the level of narrative

and figurative-symbolic units, the game demonstrates a strong didactic potential. The player needs to control, manage and distribute the functions of participants for a group of people who have remained in the occupied city and are unable to get out of it. The game mechanics consists of two main phases: day and night, which are appropriately visually decorated. During the day, the player distributes the members of the group to work related to the arrangement of the shelter, the production of necessary tools, medicines or weapons from available materials, contacts with minor characters who come to the player's shelter. At night, the player will have to control one or more characters while they make a sortie from the shelter to the outer city to search for additional resources. In the process of managing a group, the player has to face a number of problems: lack of food, medicines, lowering the air temperature, as well as groups of armed looters. During the gameplay, the player will repeatedly need to make difficult moral and ethical decisions. Thus, being involved in the game and feeling his involvement (at the narrative level) with the characters of the game, the player will work to ensure the survival of a group of game characters, thereby mastering subject skills from the course "Fundamentals of economics" such as: planning and setting tasks, distribution of benefits taking into account the needs of wards, distribution of functions in the team and practicing theoretical knowledge from the courses "Ethics" and "Axiology" in practice in virtual interaction, in particular: making ethically controversial decisions to ensure the survival of the group, analyzing value orientations and factors influencing their change in crisis situations, encountering the situation of war and people's experience. On the one hand, this will require the activation of soft skills: stress management, time management, self-reflection, and, on the other hand, the experience of virtual immersion in the game world can be a source of material for developing students' worldview positions within the disciplines of "Ethics", "Axiology" in the field of study 47.03.01 "Philosophy".

The third example is a dynamic real-time strategy game from Paradox Development Studio (Sweden) "Crusade Kings 2" (hereinafter CK2), released in 2010. It is worth noting that in the CK2 example, which we are considering, the number of possible player interactions with the game world is quite strictly limited. First of all, the fact that the player has the ability to directly control the characters, but interacts with them at some abstract level, not covered by the interface to the level of transparency, that is, in such a way that each of his actions is accompanied by the need to give an order by pressing a special button. This control logic is an alternative to the tendency for the interface to disappear from the player's field of view and allows you to pay less attention to the logic of interaction between the acting characters of the game and the player himself. We can clearly count, define and fix the commands that the player prescribes for execution. In other words, the set of possible actions is limited, although it is quite wide up to 100 different actions, taking into account all possible official additions. Such a number of interaction options, on the one hand, demonstrates that the success of the game is not always directly related to its fundamental openness and the fact that a small instrumental sample can be compensated by a specific layout.

At the level of mechanics, the ludological slice of the game, we can observe the direct exercise of power by the player through a directive to commit an action: to imprison, execute, declare war, make peace, etc. We see that the acting power actor is assigned the possibility of carrying out a certain set of operations that can be implemented by him. The set of these operations can be different depending on the factors possessed by the player's character, among such factors we can distinguish: age, gender, social status, national specifics or the political structure of the state, etc.

In addition to the set of actions itself, which in itself tells us some ideas about power relations and the specifics of power communication, it is necessary to pay attention to the complexity / simplicity of performing an action and the consequences that this action may entail. Every action of the player triggers the inclusion in the gameplay of a new set of factors that affect the

dynamics of the game, these factors further affect what result the player will eventually come to, the combination of some factors can lead to the end of the game. The complexity/simplicity of decision-making largely depends on two types of factors: character characteristics and external factors of the world. Character characteristics are a system of traits or character qualities, positive (modesty, genius, courage) and negative (greed, mental retardation, illness). These qualities themselves can be innate, acquired in the process of growing up, acquired in adulthood, the results of events or chance. Since the player's goal is to create the most powerful and stable state in the conditions of medieval Europe and Asia, the player often faces the question of inheriting titles, since the player always continues to play as the ruler who ascended the throne after the death of the previous one. So if there are several contenders for the title, the player can bypass the inheritance system by eliminating an incapable or weak heir, clearing the way for a stronger contender. In this case, the mechanics themselves suggest how a domineering action should be performed and how an obvious moral crime can lead to a positive result for the entire gameplay and the process of power simulation as a whole.

The narratological analysis of the game leads us to understanding that the plot of the game world, its very narrative, completely depends on the player and the actions that he will take. Nevertheless, the element of chance associated with the action of third-party in-game actors is not excluded. In the narratological aspect, the player himself becomes the creator of the plot and the story, without being prescribed by rigid limits and restrictions within the game, can unfold in different ways. This allows to see how even minor decisions made by the player affect the change of the entire game world, which, we recall, is a model of the historical medieval world.

From a ludological point of view, we observe how the price of making a decision and performing an action by a player increases. Each of his decisions causes a whole host of changes that entail the emergence of new opportunities and difficulties. At the level of psychology, the player is faced with a simulator of government in a certain historical era. Such a simulation can be interpreted in many ways as a specific virtual practice of reconstruction (albeit in a simplified model) of the life of a medieval state, and the game provides opportunities for the implementation of different scenarios for the development of this reconstruction and their analysis after the game, discussions in the framework of practical classes at the university in the field of study 44.03.05 "Pedagogical education with two training profiles" "History and social studies", "History and law".

Thus, through penetration and involvement in the gaming experience, the student (player) can master a number of necessary competencies prescribed by the work programs of disciplines, in particular, universal competence-5, which involves the formation of the ability to perceive the intercultural diversity of society in socio-historical, ethical and philosophical contexts, provided for in the curricula of the field of study 44.03.05 "Pedagogical education with two training profiles" in the profile "History and social studies", "History and law". Firstly, immersion in the process of the game will enable to form an idea of the historical process as a set of development of many interrelated political and state entities; secondly, it will develop an understanding of the factors influencing decision-making and the potential complexity of such decisions. These skills can be useful for visual, practical mastering of the disciplines of the historical cycle in the field of study 44.03.05 "Pedagogical education with two training profiles" in the profiles "History and social studies" and "History and law" such as "World historical process", "Medieval civilizations of the West and East".

## 5 Conclusion

The review and identification of the potential of video games as a tool for gamification of the educational process at the university indicated in the goals and objectives of this study showed that each of the presented examples of video games can be implemented in the practice of the educational process. At the same time, the internal content of video games and their device

at the mechanic level can serve as additional illustrative material. Video games, having recreational potential, can also become a potential tool for additional involvement of students in educational activities, combining elements of entertainment and at the same time studying and illustrating various kinds of educational material. Special attention should be paid to the process of integrating such gamification practices with the involvement of video games in the context of the educational process, which requires the coordination of curricula, academic programs of disciplines, understanding the logic of their implementation in the system of teaching the discipline.

Nevertheless, it should be borne in mind that, firstly, gamification requires individual "tuning" and preliminary analysis, otherwise its elements will remain unviable; secondly, many video games contain constructive potential that can be used to attract and involve students in the educational process; thirdly, the introduction and testing of gamification practices requires time and increased expert attention in matters of evaluating their efficiency.

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#### Primary Paper Section: A

#### Secondary Paper Section: AM, AN

## YOUNG PEOPLE'S ATTITUDE TO THE HEALTHY LIFESTYLE: AN EXPERIENCE OF EMPIRICAL RESEARCH

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**Abstract:** The relevance of the subject is associated with the importance of maintaining the healthy lifestyle as one of the major life factors. The paper is aimed at studying young people's attitude to the healthy lifestyle. The research relies on using the quantitative method of analyzing results of the authors' sociological survey conducted in Minin Nizhny Novgorod State Pedagogical University in 2020/2021 (N = 315). The survey has found an inconsistency in the young people's consciousness: on the one hand, they understand the importance of the healthy lifestyle, while on the other – they do little to maintain it in practice. The paper is intended for specialists in physical fitness and sports.

**Keywords:** health, the healthy lifestyle, young people, sociological survey, sociology of health, daily life, gender.

### 1 Introduction

The problem of health and the healthy lifestyle (hereinafter the HL) is of unfading importance for man. At all times, this is one of the most essential subjects for people to discuss, care, and worry about. Numerous sociological studies conducted nowadays demonstrate quite clearly that as a rule, the value of health occupies leading places with representatives of various age-based, national, cultural cohorts, and religious denominations.

The lack of health has a negative impact on the quality of life, its fullness, etc. Health limitations form a special group of people who have to solve life problems, overcome life difficulties, and adapt to the reality around them in a fundamentally different way. One can say that health is one of the crucial conditions enabling one to reveal one's potential capacities, live life to the full, build, and fulfill one's life plans.

The healthy lifestyle attitude is laid down at a young age. According to the data of the World Health Organization (hereinafter the WHO), about 50-55% of a person's state of health is determined by their way of life. Results of new studies evaluate the impact of this factor even higher, raising its significance of up to 70% (Ermolaeva & Noskova, 2015).

Opting for and organizing the healthy lifestyle rely on the nature of daily life and leisure; they are closely associated with free time availability and organization opportunities. The lack of spare time, material possibilities for organizing leisure aimed at maintenance or promotion of health can bring to nothing various value-based attitudes, HL needs, and habits instilled by parents during childhood. That is why, special attention and significance is given to the study of the opportunities that young people have today and their wish to maintain the HL.

The relevance of conducting a sociological survey of young students is associated with having to find out values and value-based attitudes in relation to health and the healthy lifestyle which are already formed. The empirical analysis of young people's value-based ideas allows identifying sore spots in questions of upbringing, i.e., introducing young people to the healthy lifestyle. The necessity of maintaining the healthy lifestyle must become the basic need of the contemporary young people. It is on the current young people's state of health that the nation's future welfare depends, as it is the young who are the principal demographic, social and economic, and political resource of the society.

The obtained research results will allow adjusting the youth policy in physical education and sports significantly.

### 2 Literature Review

Indicators of the healthy lifestyle and models of bad habits proliferation in the society are studied by many foreign sociologists. A large theoretical and methodological contribution into the development of this scientific focus area was made by F. M. Andrews (Andrews & Inglehart, 1979), W. C. Cockerham (2005), A. R. Herzog (Herzog et al., 1982), et al.

Among Russian researchers of the Soviet period, it is M. S. Bedniy (1984) that must be noted; he considered health as mutually related and mutually conditioning unity of the social and the biological. He also gave an exhaustive characteristic of health of the population.

In recent years, questions of forming the healthy lifestyle in Russian population in general and in its younger generation in particular have gained special importance. They arise close interest in the scientific community both in terms of theory (Agheevets, 2017; Ermolaeva & Noskova, 2015; Nemova et al., 2016a; Pakina & Retivina, 2016; Modern understanding of Human Life Forces..., 2000) and in applied research (The 2015 Study of the Attitude..., 2015; Vaghin et al., 2018; Volkova, 2017; Gareeva & Konobeyskaya, 2020).

The existence of mutual relation between one's state of health and the lifestyle one maintains has been repeatedly confirmed by studies conducted by the WHO. Adherence to rules of the HL depends on numerous factors: having the relevant values and value-based attitudes, the need of performing day-to-day practical activities. So, P. O. Ermolaeva and E. P. Noskova (2015) identified four kinds of daily life practices characterized by different attitudes of the respondents to health and the HL: "creators", "doers", "destroyers", and "skeptics". The researchers came to the conclusion that it is the destroyer type that prevails among Russians; its representatives share an extremely negligent attitude to their health owing to the absence of evident health issues. It has to be emphasized, too, that men aged under 35 and young people belong exactly to this group.

The problems of interrelation of the spiritual and moral development of the society by introducing people to physical education and sports were studied by V. U. Agheevets (2017), the long-term head of P. F. Lesgaft Saint Petersburg National State University of Physical Education, Sport, and Health. Using the example of his own scientific and practical activity, the scientist proved the possibility of acting on the young people's spiritual and moral world by introducing them to physical education.

With regard to this, the requirements for training modern physical education teachers change accordingly. M. M. Kutepov and M. P. Konovalova (2019) substantiated the idea of the necessity for future physical education teachers to master further competencies. Namely, they have to develop the ability of organizing and holding competitions, performing judging in basic kinds and in an optional kind of sport.

The findings of K. V. Volkova's sociological survey (2017) are of a certain scientific interest. This survey was conducted on young students in Petrozavodsk. The said study correlates with the authors' survey in two aspects: they have similar research object and place, i.e., regional and not central location of the city where the respondents live.

A significant contribution to studying the population's attitude to the healthy lifestyle was made by sociologists of Cherepovets city (2015). The monitoring survey was conducted in 2015, taking into account social and economic, age-related, and gender particularities of the respondents. The Cherepovets researchers note that although a positive trend of a larger quantity of Russia's

citizens maintaining the HL has been observed in recent decades, young people's overall state of health causes serious concern with medical professionals.

The authors discussed the problem of young people's attitude to the value of health and analyzed sociocultural mechanisms of broadcasting the healthy lifestyle attitudes in the contemporary society in 2016 (Nemova et al., 2016b). In the course of the research, some controversies were found: on the one hand, the value of health is important both for the generation of "parents" and for that of "children", while on the other hand – both generation cohorts lead the mostly passive way of life and do little for maintaining their health. So, leisure of the "parents" generation is extremely passive more often than not; Russians of the older generation give up to 70% of their free time to watching TV, domestic chores, communicating with friends and relatives, and so on. While the survey of 2016 was aimed at studying the role of further education in socialization of Russians and the health and healthy lifestyle value problems were not immediately in question, this research of 2020/2021 deals with studying young people's attitude to the value of health and problem of the HL exclusively.

### 3 Research Methodological Framework

The objective of the authors' research is to study the attitude of young students to the healthy lifestyle.

*Tasks of the research are:*

1. to find out life conditions influencing young people's attitude to the HL;
2. to identify principal ways and practices of maintaining the HL by young people in their daily life;
3. to outline the main causes mobilizing the respondents to take care of their health;
4. to explore young people's attitude to nutrition as an important constituent of the HL;
5. to study young people's value-based ideas about physical fitness and sports;
6. to analyze gender distinctions in young people's value-based ideas about the HL.

In 2021, the authors conducted the sociological survey "The attitude of young students to the healthy lifestyle"; its objective was to find out the young people's value-based perception of health and the healthy lifestyle. The total of 315 respondents of Minin Nizhny Novgorod State Pedagogical University (hereinafter Minin NSPU) were surveyed. The sampling was random, with pro rata quantities of the students being trained at each faculty of the said university (intramural form of study) observed. The survey involved year 1 through year 5 students of the following faculties: the faculty of humanities; the faculty of design, fine arts, and media technologies; the faculty of natural, mathematical, and computer sciences; the faculty of pedagogy and psychology; the faculty of management, social and technical services; the faculty of physical education and sports.

The age of the respondents ranges from 18 to 25 years old; gender composition is 22,2% of young men and 77,8% of young women. The survey was conducted using the quantitative method, that is, via questionnaire survey with subsequent data analysis in the SPSS-21 software. The questionnaire form was uploaded on the Internet in the open access mode and available at the address: [https://docs.google.com/forms/d/e/1FAIpQLScwRkXvBsSi3L9Aw58s8WqAREjUxf\\_oHKyMd\\_WL841872Q9jw/viewform?usp=sf\\_link](https://docs.google.com/forms/d/e/1FAIpQLScwRkXvBsSi3L9Aw58s8WqAREjUxf_oHKyMd_WL841872Q9jw/viewform?usp=sf_link); it was distributed exclusively among the students of Minin NSPU. The survey was conducted during the academic year of 2020/2021.

So, human health depends on many circumstances: genetics, way of life, living conditions, willpower, motivation, and others. One can influence genetic background or environmental conditions to a small extent only but one can well change one's way of life, diet, etc. In fact, life conditions are biographically determined circumstances. In this case, literally every aspect matters: the family's physical education

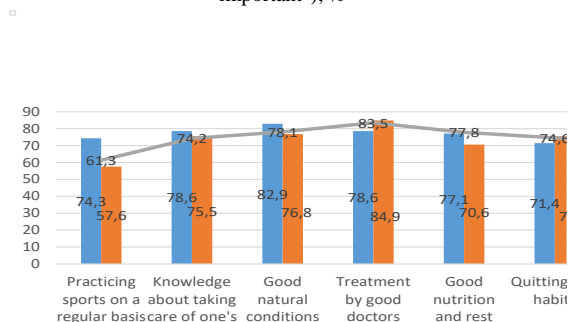
level, urban or rural residence, one's material and status position in the society. One of the first tasks of the research was to find out conditions, i.e., life circumstances affecting the young people's attitude to the HL.

### 4 Results and Discussion

The respondents were asked to rate the extent of favorableness of the conditions for maintaining their health according to a 5-point scale from "completely unimportant" to "very important". For this purpose, the following question was posed to the students: "What conditions for maintaining health do you consider the most important?". When answering this item, the respondents rated highest the "passive" factors, i.e., those not depending on their personal efforts: "Treatment by good doctors" (83,5) and "Good natural conditions" (78,1%). What is indicative is the young people's attitude to the necessity of organizing practicing sports on a regular basis: it has turned out to be an outsider in relation to all other options suggested (61,3%). The leading places were occupied by "Good nutrition" (77,8%), "Quitting bad habits" (74,6), and the "Knowledge about taking care of one's health correctly" (74,2%) (see Figure 1).

Gender-based analysis has shown that for the young women "Treatment by good doctors" is much more important (83,5%) than working out on a regular basis (57,6%). By contrast to the girls, the young men rated "Practicing sports on a regular basis" as an important health maintenance condition much higher (74,3% versus 57,6%, respectively); the same holds true for "Fulfilling the healthy lifestyle rules" (77,4% versus 70,6%). "Good nutrition" is also rated by the young men higher than by the young women (77,4% versus 70,6%) (see Figure 1).

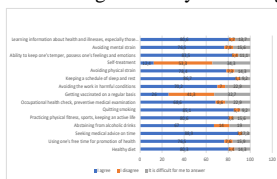
Figure 1 The most important conditions for maintaining health according to the respondents (the total of "important" and "very important"), %



Source: compiled by the authors

A "passive" attitude to maintaining one's health was manifested in the respondents' answers about possible ways of taking care of their health, too. 88,9% of the respondents believe that one must "Seek medical advice on time" if one takes care of one's health. The significance of other health care ways was distributed as follows (let them be presented in the order of the respective figures decreasing): "Keeping a schedule of sleep and rest" – 86,7%; "Quitting smoking" – 85,1%; "Keeping one's temper, possessing one's feelings and emotions" – 83,5%; "Practicing physical fitness, sports, trying to keep an active way of life" – 80,6%; "Learning information about health and illnesses, especially those I have" – 80,6%; "Healthy diet" – 80,3%; "Avoiding mental strain" – 67%, and so on. Thus, it can be seen that practicing physical fitness and sports as the main way of taking care of one's health occupies far not the leading positions. Seeking medical advice is already an extreme measure of taking care of one's health. Most frequently, people go to doctors when they really have some health problems onboard. This is how Russia's long-standing mental trait is manifested, captured in a vivid manner in the Russian popular proverb "A peasant needs thunder to cross himself and wonder" (see Figure 2).

Figure 2 Ways of taking care of one's health, %



Source: compiled by the authors

The pleasure principle is one of the most important motivators of human activity, especially for the young cohort. If one gets pleasant feelings, a feeling of joy, one is more willing to perform an action.

The students were asked to answer the question "What do you need to boost your life tonus?" by selecting one of the six suggested options. Let the respondents' answers be presented (in the descending order): having a good sleep (94,6%); keeping regular hours (80,3%); continuous outdoor walks (74,9); practicing sports (66,7%), etc. 6,3% boost their life tonus by drinking alcohol, and 2,9% of the respondents take soft drugs. The obtained data inspire certain optimism: first of all, brightening one's mood with alcohol and drugs is not especially popular; secondly, practicing sports still cause positive emotions with 2/3 of the surveyed ones, which is certainly good news.

To find out the practical constituent of life of the respondents, the question "Do you do anything from the options you have agreed with here?" was posed. "Yes, I do everything" was noted by 11,1%; "Yes, I do, but not all of them" – by 74,3%. 13,0% said "I do very little", and 1,6% – "I do nothing". By adding up the answers in the positive ("Yes, I do everything" and "Yes, I do, but not all of them"), it is obtained that 87,3% of the respondents try to take care of their health to some extent or another.

The question "How frequently do you take care of your health?" was answered by 34,3% of the young men and 26,5% of the young women as "Always"; by 55,7% of the young men and 67,3% of the young women as "From time to time"; and by 1,4% of the young men and 0,8% of the young women as "Never". Thus, the majority of the respondents try to take care of their health and adhere to the HL rules on a regular basis.

Usually, health deterioration problems concern older people but not the young. Anyway, maintenance of health and its promotion largely depends on what way of life a person keeps. At the young age (this research is no exception), young people do not think much about their state of health as they experience an excessive surplus thereof: nothing hurts, nothing worries, therefore, one can live just as one pleases.

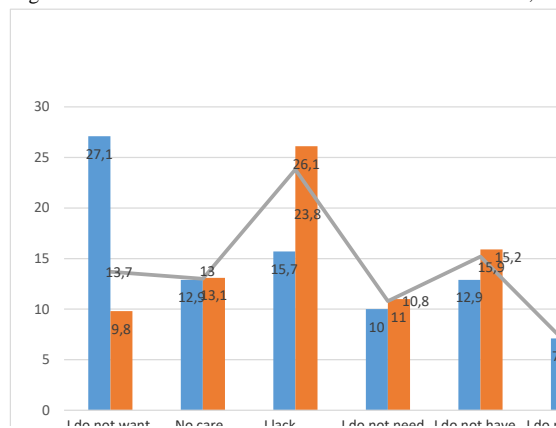
The indicators of subjective appraisal of health were obtained by asking the following question to the respondents: "How do you estimate your state of health?". 40% of the young men and 36,7% of the young women rated their state of health as a good one; 48,6% of the young men and 49,8% of the young women said it was satisfactory. 2,9% of the young men and 7,8% of the young women rated it as bad, and other respondents had difficulty answering. In general, most respondents estimate their state of health quite positively. In the data they supplied, one can sense optimism which is inherent exactly in representatives of the younger cohorts of the society.

Another important task of the research was to outlining the causes of the respondents' caring of their health. The respondents were asked to answer the question "If you take care of your health, what is it caused by?". They rated the

causes conditioning the necessity of caring of one's health as follows: by upbringing (36,8%); by deterioration of health (31,1%); by the influence and example of others (19,4%); by the effect of medical information (7%). These findings give evidence about the respondents' realizing the importance of the upbringing process in terms of introducing to the HL. What can be seen, too, is the fact that for 1/3 of the respondents, the only significant cause is abrupt health deterioration and having to seek medical advice as an extreme means for keeping and regaining one's health.

For this research, a significant task was also identification of causes preventing the respondents from taking care of their health. The students were asked to answer the question "If you do not take care of your health, why is it so?". Only one option could be selected from the list of the suggested answers. With the young women, the leading choice was the "lack of willpower" – noted by 26,1%, and with the young men it was the "lack of wish to limit themselves in any way" (27,1%), which is essentially the same. All these options are manifestation of a weak character and a penchant for hedonistic and eudemonic attitudes (see Figure 3).

Figure 3 Causes of the lack of wish to take care of one's health, %



Source: compiled by the authors

Gender-based analysis of causes of the lack of wish to take care of one's health has shown that the young men tend not to limit themselves in any way more than the young women, i.e., "enjoying life to the full" (27,1% versus 9,8%). This fact confirms young men's larger predisposition to risky behavior as compared to young women. Curiously enough, the "weaker sex" justifies the name, too, by their larger (as compared to the young men) lack of willpower (23,8% versus 15,7%, respectively). The young women are more fastidious to the conditions for practicing sports. 15,2% of the young women and so few as 12,9% of the young men noted they did not have appropriate conditions for sports (see Figure 3).

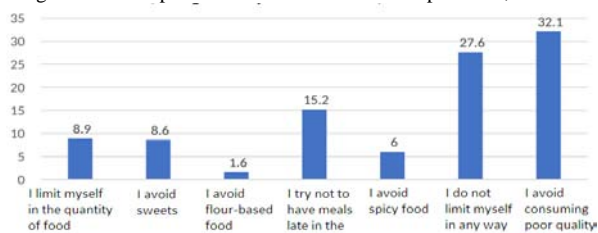
Proper nutrition is a significant part of life and largely the basis of the HL. So, the authors could not but consider this topic in their HL research, too. Regrettably, analysis of the answers has shown that having the knowledge about proper nutrition and understanding the importance of keeping a healthy diet do not prevent the young people from neglecting these aspects at all and being completely irresponsible toward their own health.

Mainly, the respondents have meals at home: 82,4% have breakfast, 47,3% have lunch, and 86,8% – supper. On the one hand, this could be indicative of caring about one's health. Home is perfect for organizing individual proper nutrition, cooking, and eating healthy food only, which is useful exactly for one's organism. However, the authors believe this rather to be the proof of a low level of life and the lack of material possibilities to eat out, i.e., to use public catering system. This assumption is confirmed by further analysis of the respondents' answers. So, the students care more about freshness of their food rather than its utility for the organism. In terms of nutrition, they target the

task of physical saturation of the organism first, and not that of proper nutrition.

The respondents were asked to answer the question "Do you impose limitations on your nutrition?" Here, they could choose one answer option from the seven available. So, the respondents' answers were distributed as follows: 32,1% avoid consuming poor quality food; 27,6% admitted frankly they did not limit themselves in any way. 15,2% of the students try not to have meals late in the evening, and 8,9% limit themselves as for the quantity of the food consumed; 8,6% avoid eating sweets, 6% – spicy food, 1,6% – flour-based food (see Figure 4).

Figure 4 Self-imposed food limitation of the respondents, %



Source: compiled by the authors

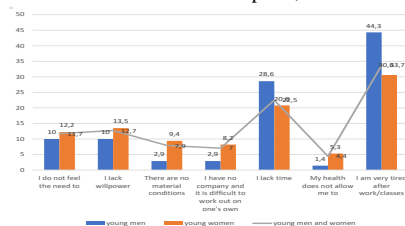
The data obtained correlate with survey results of the sociologists of Cherepovets city (2015). The Cherepovets sociologists also note that of all characteristics of the food products, the respondents pay most attention to expiry date (83%), and least – to energy value (23%). Thus, what can be seen is that the respondents worry about extreme forms of food – the extent of freshness and edibility – and they care less about quality parameters of food, i.e., its usefulness for the organism.

Realization of the importance of practicing physical fitness and sports is developed by everyone on their own; many can fail to realize it at all. The childhood is immensely important in terms of cultivating the need of physical exercises and sports (in family, school, and the system of further education). The question "Did you go in for physical fitness and sports as a child?" was answered in the positive by 77,8% of the students. Meanwhile, the quantity of ones practicing as of today (those answering the question "Do you go in for physical fitness and sports?" in the positive were taken into account) was much lower, making 54,9% of the respondents. As for working out on a regular basis, the findings have shown that there are even fewer of those actually engaged in physical fitness.

To measure the frequency of physical fitness and sport activities, the respondents were asked to answer the question "How often do you manage to practice physical fitness and sports?" 69,5% said they did not at all; 2,5% said they did several times a year; 3,5% noted they did once a month. So few as 24,4% of the students said they worked out several times a week. Based on the data obtained, it can be seen that the level of understanding the importance of physical fitness and sports for maintaining the HL is extremely low in the students of Minin NSPU. This fact makes one become concerned as this university trains future school teachers who have to show children with their own example how they must regard the HL and lead them by their own example. The survey data confirm the conclusion, too, that in their daily life, 2/3 of the students do not adhere to the HL, i.e., their actual daily life is far from their perfect ideas.

What are the causes preventing the respondents from daily practicing physical fitness and sports? The item of the questionnaire form was worded as follows: "If you do not practise physical fitness and sports, why is it so?" As the principal causes preventing them from working out, the respondents gave simple tiredness (30,6%), lack of time (20,8%), lack of willpower (13,5%) and need (12,2%) (see Figure 5).

Figure 5 Causes preventing from practicing physical fitness and sports, %



Source: compiled by the authors

It has to be emphasized specifically that in Nizhny Novgorod, quite a lot has been accomplished in terms of popularization of physical fitness and sports in the recent several decades and an extensive sports and recreational infrastructure has been created. It is no mere chance that so few as 9,4% of the questioned ones answered they lacked material means for organizing their sports leisure (see Figure 4). What prevents the young people from engaging in sports activities is their own idleness, lack of willpower and realization of the importance of such activities. Similar conclusions have been made by Petrozavodsk sociologists, too: "... The principal causes proceed from not the objective (state of health) but from subjective circumstances (their own idleness, etc.)" (Volkova, 2017).

## 5 Conclusion

The questions of young people's HL are of a considerable theoretical and practical interest for teachers of schools and further education system; due to their direct functional tasks, they are aimed at introducing young people to the HL. In its essence, the HL must become the principal need and a compulsory rule of life of a modern person.

Analysis of the empirical data has shown inconsistency of the students' ideas about the HL. On the one hand, the students understand what the HL rules are and admit their importance and significance for their life; on the other hand, they do little to implement these rules into their life. It is subjective factors (lack of time, lack of willpower, etc.) that prevent them from practicing physical fitness and sports daily. For the vast majority of the respondents, the importance of the HL is only recognized when a real threat to their life and health arises. Being important constituents of the HL, physical fitness and sports seem significant for keeping one's health to so few as 2/3 of the questioned ones. However, in their usual life, over 2/3 of the surveyed do not practice physical fitness and sports. Gender-based analysis has shown the absence of discord along gender identity lines: young men demonstrate a greater willpower, a less demanding attitude, and riskier behavior as compared to young women.

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**Primary Paper Section: A**

**Secondary Paper Section: AO, AQ**

## FEATURES OF REFLECTION AS A COMPONENT OF THE PSYCHOLOGICAL CULTURE OF FUTURE TEACHERS

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Abstract: The article is devoted to the study of the features of reflection as a component of the psychological culture of future teachers. The authors carried out a theoretical analysis of the extent of research of the problem of psychological culture, revealed the essence of reflection as the most important component of the psychological culture of the future teacher. The article also presents the results of an empirical study of the features of reflection of students in the field of study 44.03.05 Pedagogical education. Attention is focused on the importance of pedagogical reflection, the development of its expressiveness and direction in the university, which leads to its transformation into one of the most important personal tools for the formation of the psychological culture of future teachers.

Keywords: reflection, reflexive abilities, self-knowledge, psychological culture, future teacher, professional activity, student.

### 1 Introduction

The presence of serious educational problems associated with ongoing socio-cultural processes, high requirements for professional education and low indicators of self-satisfaction of teachers, as well as their lack of motivation to achieve professional self-realization, actualize the issue of studying and developing the psychological culture of future teachers. From this position, the problem of the development of a "cultural teacher" at the university, who has a set of abilities, traits, competencies that can increase the effectiveness of professional activity, the level of self-realization and self-satisfaction with himself and the chosen profession, is considered. The features of the psychological culture of the personality of future teachers can be traced through a set of its components, among which pedagogical reflection occupies a special place. The expressiveness and direction of pedagogical reflection of future teachers become features that contribute to its transformation into one of the most important personal tools for the formation of psychological culture of future teachers, ensuring the quality of the implementation of the upcoming professional activity.

Modern socio-economic conditions of society's development put forward special requirements for a graduate of a higher educational institution capable of performing professional activities as efficient as possible. A teacher with a highly developed psychological culture is capable of analyzing and introspecting his own activity, forecasting and correcting it, is highly professionally motivated and striving for self-development and self-realization, is able to adequately respond to emerging difficulties, build his behavior taking into account accepted socio-cultural values. To do this, a future professional must have a set of personal and professional abilities, including a developed ability to reflect. The ability to plan actions, determine the reasons for failures, correct the behavior, think through the details, and the overall success of the activity depends on the degree of development of reflection. Therefore, it is so important to study reflexive abilities even at the stage of studying at a university in order to correct the existing shortcomings in its development in time.

### 2 Literature Review

Many thinkers of their time turn to the problem of human culture. S. Freud (1963) is considered to be one of the prominent representatives in this direction. In his concept, culture presupposes the rejection of unconscious motives in favour of sexual desires, the implementation of the mechanism of the "super-EGO". It is the "super-EGO" that is in constant development under the influence of various socio-cultural phenomena.

M. Mead (1988) considers culture from the perspective of ensuring the continuity of traditions and innovations. In her understanding, culture is transmitted by a certain object, through the implementation of joint interaction and the accumulation of cultural experience by the successor.

L. A. White (2004) notes the presence of conscious cultural concepts in humans, which are formed as they grow up and interact with objects of the surrounding world. In line with the division of the interdisciplinary approach in understanding culture into culturological and psychological, which began at the beginning of the XX century, M. Lazarus (1896) actively studies the psychological side of human culture. He notes that each person, due to his specific individual and socio-cultural characteristics, has a special psychological culture. N. Verzhinina and colleagues (Verzhinina et al., 2020) believe that being in constant interaction, different types of culture stimulate the growth of a person as a person and as a professional.

O. I. Motkov (2007) was one of the first scholars in Russian science to consider the phenomenon of psychological culture. By it, the scientist understands a personal property in the general system of culture and harmony of a person, expressed through a set of constructive ways, skills of self-knowledge, behavior and self-development.

An approach to the definition of psychological culture as an independent personal neoplasm can be found in the works of L. S. Kolmogorova (2013) According to the author's point of view, psychological culture can be viewed in many aspects: referring to the spiritual and value sphere - as a set of values; in general, to activity - as specific features of its implementation. All components of psychological culture expressed through psychological literacy, psychological competence, value-semantic, reflection, cultural activity are interrelated and interdependent.

I. V. Dubrovina (2011) considers the problem of the formation of psychological culture as one of the basic ones. She highlights the main indicators of psychological culture: mental and psychological health, as well as psychological literacy.

K. M. Romanov (2015) considers psychological culture as an integral part of the general culture of the individual. Developed psychological culture increases the process of socio-cultural adaptation, self-determination, self-development and self-realization.

Consideration of psychological culture in science also takes place from the standpoint of professional pedagogical activity. A. A. Lezhnina and colleagues (Lezhnina et al., 2014) consider the psychological culture of a teacher in the framework of determining the effectiveness of professional activity. They outline integral indicators of psychological culture in conjunction with cognitive (mental skills), affective (attitude and peace, emotional stability and lability), motivation (the orientation of the personality, system of values), behavioral (the ability of self-regulation and reflection) components.

N. Yu. Belova (2014) also indicates the integration of this personal education through the complex ethical, regulatory, reflective, cognitive, communicative components.

Currently, the personality of the future teacher is of the greatest interest in scientific research (Neumoeva-Kolchedantseva, 2020). Within the framework of this problem, the formation of components of the psychological culture of future teachers is actively considered, in particular, the development of their reflection.

J. Locke's reflection (1801) is considered as an internal experience. It is formed as a result of introspective observation of a person's own actions.

Analyzing the works of foreign researchers, V. Y. Dudareva and I. V. Semenov (2008) focus on the point of view of A. Buzeman, who defines reflection as an action directed from the outside world to himself.

Reflection as a special indicator of adulthood is considered by J. Dewey (1910), J. Piaget (Piaget et al., 1969). According to the authors, reflection is a process involving a logical relationship between an object and its impact. Reflection is the basis of cognitive activity, being conceptualized into a concept.

W. James (1890) also connects reflection with cognitive activity. He distinguishes the cognizing Self and the knowable Self. This indicates the duality of reflection.

N. V. Emelina (2011) suggests considering reflection as a result of self-knowledge expressed in the form of certain subjective judgments. Reflection has a complex structure, represented by a set of motivational-emotional, cognitive and evaluative components.

S. V. Shmachilina (2010) considers reflection as a criterion for the formation of a future teacher's research culture.

The research and development of the ability to reflect is the task of modern pedagogical education. H. G. Yuksel and co-authors (Yuksel et al., 2013) consider the reflection of a future teacher as a tool for reflecting on their practical experience, describing the ideas of pedagogical activity.

C. Alger (2006), T. Barnhart, E. Van Es (2015), M. Cavanagh (2021) consider reflection as an important aspect of the professional development of a teacher. Reflection arises as a result of reaction to pedagogical events, enables them to be correctly interpreted and develop a plan for future actions.

Let's highlight the features of reflection of future teachers as a component of their psychological culture.

Firstly, the essence of this process is to understand oneself, one's inner qualities, and the ability to test new behavior in the rapidly changing conditions of modern education.

Secondly, the reflection of the future teacher includes the following processes: self-observation, self-knowledge, self-analysis, self-correction, self-regulation and creative growth (Vardanyan et al., 2016).

The presence of inadequate ideas and stereotypes in the professional self-consciousness of future teachers hinders the effective performance of their professional duties. Reflection helps to eliminate them (Fadeeva et al., 2020).

Thirdly, the subject of reflection of the future teacher is a complex of formed competencies, professional qualities, the nature of the activity performed.

Fourthly, reflection contributes to the accumulation of new ideas about oneself as a person and a professional, stimulates personal and professional activity.

Fifthly, the level of formation of reflexive skills and abilities of future teachers may be different. Low ability to reflect complicates the process of self-improvement, self-understanding and self-disclosure (Kuzovenko, 2013).

### 3 Research Methodological Framework

The purpose of the research is to study the features of reflection as a component of the psychological culture of future teachers.

Research objectives:

1. to determine the individual measure of the students' reflexivity and reveal its psychological manifestations;
2. to identify the levels of formation of pedagogical reflection of future teachers and interpret its psychological essence;
3. to identify and characterize the level of expressiveness and direction of students' reflection.

The study was conducted in February-April 2021. 144 students in the field of study 44.03.05 Pedagogical education of Mordovian State Pedagogical University named after M. E. Evseev took part in it. The average age of the participants in the experiment was 19-20 years.

To solve the research tasks, the following methods were used: testing method, methods of processing empirical data. The following methods were used as the main diagnostic construct:

1. The methodology "Diagnostics of individual measure of reflexivity expressiveness" by A. V. Karpov, V. V. Ponomareva (2003) is aimed at self-assessment of the formation of reflexivity as a component of psychological culture. Participants were asked to consider 27 situations, to assess the degree of conformity of the statement to personal manifestations. Processing of experimental data was carried out in accordance with the key. The technique made it possible to determine the level of reflexivity – high, medium, low.
2. The methodology "Determining the level of formation of pedagogical reflection" by O. V. Kalashnikova (1998) is aimed at studying the formation of students' level of pedagogical reflection. Participants were asked to answer 34 questions negatively or affirmatively. Processing of experimental data was carried out in accordance with the key. The method enabled to diagnose three levels of formation of pedagogical reflection - high, medium, low.
3. The methodology "Identification of the level of expressiveness and direction of reflection" by M. Grant enabled to determine the level of expressiveness and direction of subjective reflection. The questionnaire was presented by two scales - self-reflection and socio-reflection. Participants were asked to answer 10 forward and backward statements on each scale. Processing of experimental data was carried out in accordance with the key. As a result of the analysis of the results, information was obtained about the combination of self-reflection and socio-reflection of the subjects (Alieva, 2016).

### 4 Results and Discussion

Let's consider the results of an empirical study of reflection as a component of the psychological culture of future teachers, determine the measure of its expressiveness and direction.

The data obtained by the method "Diagnostics of individual measure of reflexivity expressiveness" A. V. Karpov, V. V. Ponomareva (2003) are presented in Table 1.

Table 1 Diagnostic data of students according to the method "Diagnostics of individual measure of reflexivity expressiveness" (A.V. Karpov, V. V. Ponomareva (2003))

Reflexivity Level	Number of Subjects	
	abs.	%
High	16	11,1
Medium	70	48,6
Low	58	40,3

Source: authors' own processing

According to the results of the conducted methodology, it was revealed that the average level of reflexivity prevails in 48.6% (70 people). These students show the ability to plan their actions,

realize their attitude to the current situation, analyze their actions, as well as the actions of other people, but reflexive processes are irregular, and reflexive analysis is carried out superficially. They are capable of self-understanding and introspection, but they experience difficulties in correlating their own actions with the actions of others, in realizing their attitude to the events taking place.

40.3% (58 people) of the subjects had a low level of reflexivity. Such students do not have access to a view of themselves from the outside. It is difficult for them to correlate their own behavior with the behavior of others, evaluate it, to make adjustments. They do not turn to the analysis of current events and activities carried out both in the past, in the present and in the future, do not think about its effectiveness and productivity. They always strive to achieve their goal, but they are not interested in the details, the plan for its implementation, their actions are often characterized by rashness, impulsiveness. They are not interested in the opinions of others, thoughts and feelings about their own behavior. Such students have a lack of striving for self-improvement, difficulty in realizing their own abilities, professional capabilities, the world of pedagogical and socio-cultural reality. For students belonging to this group, reflection is directed at their own experience, which is often formed through the influence of others. Subjective reflection is rarely observed – of oneself, of one's own actions, of the means of realizing professional activity. Low reflexivity of students is manifested in the low level of reflexive activity in general, the difficulties of self-determination, planning their own activities, evaluating results, conducting evaluative and critical activities, there is an insufficient degree of self-assessment of the formation of professional competence.

A high level of reflexivity was noted in 11.1% (16 people) of the subjects. Such students constantly turn to the analysis of their own actions, think over their own behavior in the smallest detail, carry out a detailed analysis of shortcomings, predict their consequences, can determine the directions of self-development, easily change their own behavior to achieve optimal results, are able to make non-standard decisions leading to an effective solution of the task.

The data obtained by the method "Determining the level of formation of pedagogical reflection" by O. V. Kalashnikova (1998) are presented in Table 2.

Table 2 Diagnostic data of students according to the method "Determining the level of formation of pedagogical reflection" (Kalashnikova, 1998)

Level of Pedagogical Reflection	Number of Subjects	
	abs.	%
High	13	9
Medium	71	49,3
Low	60	41,7

Source: authors' own processing

The data obtained indicate that 49.3% (71 people) of students have an average level of pedagogical reflection. The pedagogical reflection of such students is episodic. They are potentially ready to analyze the activities performed, periodically reflect, but cannot make adjustments to their own actions. Public or authoritative opinion is also important for them.

Students with a low level of development of pedagogical reflection include 41.7% (60 people). These students are inflexible in communication, are characterized by impulsiveness in their actions and are characterized by low creativity. They rarely resort to reflecting on their own actions. They are not interested in finding the causes of existing shortcomings, the presence of failures in the results of their own activities is perceived consciously. They do not seek to analyze their own activities, plan and adjust them. An outside view of their own behavior, the opinion of others is not interesting to them. They are picky about others, see other people as guilty of existing failures, but not themselves, and they are influenced by authoritative personalities.

A high level of development of pedagogical reflection was revealed in 9% (13 people) of students. They are characterized by the ability to constructive communication, rapid assimilation of educational material, self-development. Such students easily carry out reflection, they have a mechanism of reflexive activity. They have stable skills of analyzing and evaluating their own activities, planning and adjusting them in accordance with a subjectively set plan for self-improvement and self-development.

The data obtained by the method "Identification of the level of expressiveness and direction of reflection" by M. Grant (Alieva, 2016) are presented in Table 3.

Table 3 Diagnostic data of students according to the method "Identification of the level of expressiveness and direction of reflection" (M. Grant)

Expressiveness and Direction of Reflection	Number of Subjects	
	abs.	%
The optimal combination of self-reflection and socio-reflection	68	47,2
The lack of optimal combination of self-reflection and socio-reflection	76	52,8

Source: authors' own processing

The optimal combination of self-reflection and socio-reflection according to the results of primary testing was revealed in 52.8% (76 people) of students. They have an average level of self-reflection and an increased level of socio-reflection. Students of this group are capable of carrying out evaluative and analytical activities of subjective characteristics (thoughts, abilities, motives, behavioral actions), their own consciousness (internal mechanisms). They are aware and analyze the experiences of other people. The lack of an optimal combination of self-reflection and socio-reflection was noted in 47.2% (68 people) of students. They are characterized by difficulties of self-reflection and socio-reflection, mutual correlation of their results.

## 5 Conclusion

Within the framework of the conducted research, we proceeded from the assumption that psychological culture is a complexly structured mental education that is formed and implemented in interaction, acting as the basis of harmony and satisfaction of the individual with himself and the activity performed. One of the most important components of the psychological culture of a future teacher is reflection. It includes an analysis of the properties, abilities, as well as the actions performed, acts as a means of cognition, analysis, evaluation and correction of the activity performed.

In the study, an individual measure of the expressiveness of students' reflexivity was determined, the levels of formation of pedagogical reflection of future teachers were identified and characterized, the level of expressiveness and direction of reflection was determined.

The study of the features of reflection as a component of the psychological culture of future teachers showed mainly an average level of its formation in the subjects. They show the ability to plan their actions, realize their attitude to the current situation, are potentially ready to analyze the activities performed, but experience difficulties in correcting their own actions. Reflexive processes are irregular, and reflexive analysis is carried out superficially. This is largely due to the spontaneous nature of the development of reflection of future teachers and the underestimation of its importance for the formation of their psychological culture.

The perspective of the research is to identify and substantiate the psychological and pedagogical conditions for improving the expressiveness and direction of pedagogical reflection of future teachers as one of the most important personal tools for the formation of psychological culture, ensuring the productive implementation of the upcoming professional activity.

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**Primary Paper Section: A****Secondary Paper Section: AM, AN**

## THE USE OF SYNCHRONOUS AND ASYNCHRONOUS STUDY MODES UNDER IMPLEMENTATION OF DISTANCE TECHNOLOGIES

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**Abstract:** The relevance of the research topic is associated with immediate conditions of the new coronavirus infection proliferation and its consequences, which has resulted in searching for ways of distance communication performed in synchronous and asynchronous formats which would be optimal for all participants of the educational interaction. The objective of the paper presented consists in studying the practice of using synchronous and asynchronous forms of learning in conditions of implementation of distance technologies. The materials discussed in the paper can be of use in the practice of holding theoretical and practical classes both within distance learning and organization of students' independent work when transition to the mixed or completely intramural format is made.

**Keywords:** distance learning, synchronous learning, asynchronous learning, digital information, educational environment, higher educational institutions, information and communication technologies, efficient educational communication

### 1 Introduction

Recent developments associated with having to conduct classes in the partially remote format bring about the necessity of implementing some innovation methods into the process of learning. This requires well-coordinated efforts from all participants of the process and, in case the implementation succeeds, will ensure competitiveness of the higher educational institution concerned. So, according to I. F. Filchenkova (2019), "for achieving the efficiency of innovation processes, a new approach to ensuring teachers' participation in the innovation activity is necessary – one that is aimed at effectiveness and manageability of these processes" (p. 4).

With regard to this, it is organization of not only lecture and practical classes but also of students' and course participants' independent learning that deserves special attention. The prerequisite for this was the forced transition to self-isolation and a quite natural range of difficulties in carrying out the educational process and maintaining it at the previously set quality level.

As of today, many educational institutions have got an experience of implementing distance learning in the digital information educational environment of the higher educational institutions. Relying on studies of the latest two years concerning implementation of the distance learning format into teaching various economic subjects in the contemporary conditions of the COVID-19 pandemic, the authors have found that modern teaching methods (Zhulkova et al., 2019; Zhulkova et al., 2020; Sineva et al., 2020; Chelnokova et al., 2021) show themselves best in the case of face-to-face teaching. However, given the situation of the Coronavirus pandemic and its consequences having been around since 2020, the use of some of them has become either challenging or limited.

So, under restrictive measures introduced for citizens to prevent spread of the new Coronavirus infection, relevance and necessity of using new approaches both to presenting course materials (in the Moodle distance learning system included) and to compiling comments to the lecture part of the course and its practice-oriented classes has become apparent. To obtain essential advantages of the educational process within online learning, it is the use of synchronous and asynchronous modes of learning that is the most sought-after.

### 2 Literature Review

According to the data of the digital scientific library eLIBRARY.RU (2021), from 2019 and through the current point of time, the platform has hosted over 35 thousand works discussing the distance format of learning. The works presented cover various aspects of the said topic, including: questions of legal regulation (Nuzhnov, 2021), analysis of the experience of carrying out this format both in Russian (Medvedeva et al., 2021) and in foreign higher educational institutions (Belyaeva et al., 2020), the use of information communication technologies (Chelnokova, 2019), disadvantages of distance learning (Poliskaya & Polskoy, 2021), and its development prospects (Zemlyanukhina & Zemlyanukhina, 2020; Rogozin, 2021).

Within discussing distance learning, an important place belongs to questions of organizing pedagogical activity within the synchronous and asynchronous formats. So, the authors consider it essential to note works of N. V. Garashkina and A. A. Druzhinina (2020): they view not only the relationship of the asynchronous format of learning and students' individual learning paths but also potentials of integrating the synchronous and asynchronous formats. Some other works to be noted are that of E. A. Loghinova (2020) who pays attention to aspects of organizing synchronous and asynchronous communication; N. V. Tretyakova (2020) who pointed out the importance of looking for didactic models meeting the demands of the modern educational environments; and F. O. Kasparinsky (2019) offering the technique for rational organization of the information space of synchronous distance high-touch classes in mini-groups.

Alongside this, although there are numerous works considering this topic at various angles, it is important to note that "at present, students look forward to social interaction in the classical learning format less. For them, it can be easier to write than to recite in words, and to read or listen to a recording, watch a video than to attend a lecture" (Gherasimova, 2021, p. 28). Moreover, both at the beginning of the pandemic and at present, certain difficulties pose a serious challenge for teachers in some respects. This is associated with the lack of physical possibility to bring all digital courses in all subjects at once into a format which is perfect for the remote work. With regard to this, the authors share the opinion of O. A. Polyakova and E. V. Fedorovich (2020) who pointed out the fact that previously published works rely "on the experience of specialists who used technologies of distance learning consciously, who were technically, methodologically, and psychologically prepared for that" (p. 87); however, the contemporary conditions require extensive implementation of new approaches to teaching and finding ways for optimal pedagogical interaction.

### 3 Research Methodological Framework

The objective of this paper consists in describing the practice of using synchronous and asynchronous forms of learning in conditions of implementation of distance technologies.

Tasks of this paper include: studying the most characteristic features of synchronous and asynchronous modes in conditions of carrying out learning in the distance format; finding out highlights of the use of the learning modes in question in the practice of teaching activity; identifying the prospects of use of information technologies.

Methodological basis of the research consists of the methods of analysis, synthesis, observation, and modeling.

### 4 Results and Discussion

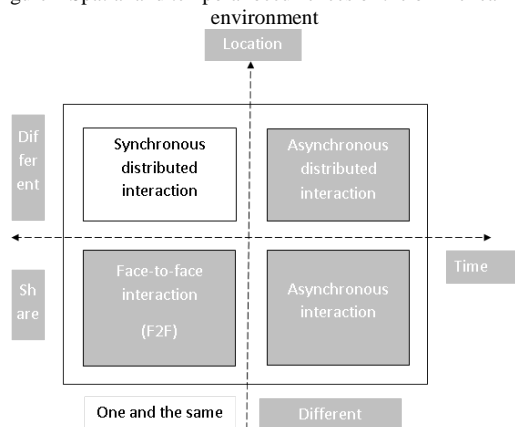
The opportunity of carrying out distance technologies of learning, i.e., organizing classes with the use of e-learning and distance educational technologies, is consolidated at the level of law. Namely, it is provided for by Article 16 of Federal law "On

education in the Russian Federation" (2012). Meanwhile, Clause 1 of the said article gives the definition for the notion of "distance educational technologies" which generally implies the use of information telecommunication networks in interaction of students and pedagogical workers at a distance. Alongside this, such opportunities reveal a number of problems associated directly with carrying out of learning.

Based on studying a number of scientific published works dealing with the said topic, the following conclusions have been made:

- Depending on location of the participants of learning and the time of holding the classes, online environments can have various organization options (Figure 1).

Figure 1 Spatial and temporal occurrences of the online learning environment



Source: Seidametova, 2020, p. 96

- Synchronous courses represent the interaction of teachers and students taking place in the "here and now" mode according to the existing schedule of classes; this corresponds to the classical style classes most of all, as feedback can be organized in the same mode with assessment of the knowledge absorbed by the attendees. With regard to this, it is important to note that it is with teachers that the responsibility rests completely when this mode of learning is used (Manokin & Shenkman, 2021).
- When learning is performed in the asynchronous mode, teachers and course participants are separated both in time and space. In this case, organization of learning may well be more complicated, with it being more labor-intensive exactly in terms of teachers' preparation (searching for and processing materials on the course topics, uploading them into the digital information educational environment of higher educational institutions, assessing students' completing the relevant assignments). One more important point is that the quality of presented materials has to be both in line with the requirements of the educational institution and up to students' idea about the quality context (it is with master degree course participants that this task is especially challenging). In case of such an approach to the course content, the complete responsibility for studying it will be placed directly with students.

Taking into account the differences of the modes discussed, some attention must be paid to their similarity, too. So, both modes of learning have to be implemented using special technical means which allow organizing interaction with students both in terms of direct learning and in providing feedback.

Proceeding from specific features of holding theoretical and practical classes both in the synchronous and asynchronous modes, the authors have attempted to implement them in practice within various subjects for which courses have been developed in the Moodle systems. The said attempt has been made for

students of the intramural and extramural departments, as well as for the master degree ones.

To find out "bottlenecks" in each of the courses uploaded directly into the Moodle LMS, non-structured concealed personal observation was opted for as the principal research method; it was performed in the situation which is natural for students and course participants. As the object of analysis, the authors selected the "Organization of project activity" course which is designed for intramural students in focus area of training 44.03.05 Pedagogical Education (with two profiles of training, Physical Education and Life Safety, where the subject is studied in term 1 of year 1 (with the interim assessment form of a credit); as well as Russian Language and Literature, History and Social Studies, History and Law, Computer Science and Technology, History and Religion of Russia, Geography and Biology, Mathematics and Economy, Mathematics and Computer Science, Biology and Chemistry, Mathematics and Physics, where the subject is studied in term 2 of year 1 (the interim assessment form – exam). The principal criteria of analysis were not only the quantitative and qualitative content of the course according to the current requirements of the internal standard documents of the university (Provision on the Digital Information and Educational Environment, 2019) but also the availability of information sources that are relevant for representatives of the younger generation.

The work conducted has enabled the authors to make a number of conclusions that are of interest for colleagues, regardless of the specific circumstances of their courses and subjects taught. So, the disadvantage of not only fundamental availability but also quantity and quality of explanatory materials has been eliminated. It is worth emphasizing that video materials designed to explain the most important aspects in general or within individual course topics (both theoretical and practical in nature) have to be placed on pages of the course necessarily. Here, it is the teachers' ability to present the course material in a high-quality way that goes to the forefront: namely, to introduce cross references for students to orient in the material, to upload assignments (including ones for independent work) with as exhaustive as possible comments on them, to specify recommended literature, Internet-based sources, and so on. Another essential point is that for both first year students and master degree course participants, it is critical to get the introductory information in the subject under study. This is why, for example, the zero section of the digital training package in the Moodle virtual learning environment must contain not only text but also video-based explanations, among other things.

The considerably reduced quantity of questions in classes, the higher interest in the subject owing to the up-to-date materials uploaded, as well as the higher quantity of correctly done works can be considered as the result of the changes introduced. The obtained data have found the necessity of developing a similar model for other courses. So, modeling the courses involved first of all working with the work program of the subject, followed by providing it with the content in line with the given syllabus. Taking into account the fact that the current situation is associated with gaining knowledge with the use of information communication technologies, among other things, some corrections have been made to the courses concerning independent work. Namely, it was subdivided into two logical parts, one to be performed before the lecture class on the topic and the other one – after it.

Alongside the above, for maintaining interest, the authors included further explanatory materials of various formats into the courses, among them links to video materials hosted on the YouTube portal, papers in digital scientific libraries, non-fiction and fiction movies by Russian and foreign producers with comments as appropriate, which has confirmed its efficiency when working in the asynchronous format.

The above novelty has reputed itself exclusively in the positive light for several reasons. Among them, there are: permission to students to openly use Internet-based resources and search for information (this is relevant for assignments requiring one to

find real-life examples) and motivation for students to communicate within their groups on certain course topics in a more focused way.

Within the synchronous format of learning, theoretical and practical classes were held in the Zoom video conferencing mode on a compulsory basis. Practice has shown that its principal advantages are demonstration of presentations and short video clips, the opportunity of answering questions quickly, including those asked by students in the chat, and the opportunity for the course participants to voice their standpoint, take part in debate, and show results of their works completed in groups or individually (in the presentation form, too).

Results of assessment events held in various study groups and focus areas of training have shown the high effectiveness of using the asynchronous and synchronous methods, which is confirmed by high scores (before and after making the changes, in the study groups of equal number, the quantity of positive marks has increased from 54,5% up to 80%, respectively). The said marks included those of the final test passed in the Moodle system. One should specifically note the fact that the students who participated extensively in debate at theoretical and practical classes have shown noticeably better results as they had supplementary information (when answering certain test items, they could associate the questions with supplementary explanatory materials presented in the course).

The knowledge obtained according to the results of studying the list of digital technologies extensively used by colleagues from other higher educational institutions in teaching profile subjects were used in the authors' own work, too. So, in the nearest future, it is planned to implement some new technologies in conditions of the mixed format of learning. This will allow working on some of the suggested ones in the asynchronous mode and then gaining feedback within the intramural and extramural communication.

So, for example, within the synchronous learning format, the authors expect to apply the Live chat tool without quitting the already habitual Zoom chat. They are also going to use Telegram for communication, which will enhance the speed of answering the questions of students or course participants. The authors also consider it important to use the opportunities of the Miro interactive whiteboard and Google Doc to organize working in groups.

For carrying out the asynchronous mode, it is expected to further use e-mail with its evident advantages, the Moodle virtual learning environment which has reputed itself positively. The authors also intend to extend the list of social networks because judging by students' reviews, it is social media that are of greatest interest as a source of communication.

## 5 Conclusion

As a result of working on the topic in question (which is currently of paramount importance as it influences the quality of learning in a certain way), the authors have come to the conclusion that partial upgrade of the courses has demonstrated positive results and it is quite logical to consider both modes of learning as equally productive forms of obtaining and absorbing the gained knowledge. Similarly, they can be viewed as convenient platforms taking into account communication and technical particularities and possibilities of the audience within distance learning.

With regard to this, the authors believe that in the future, it is the third mode – the mixed one combining all advantages of synchronous and asynchronous learning while leveling out their demerits – that will be sought-after and the most relevant. Productivity of this form can be explained by saving time for putting principal theoretical questions across to students in talking mode. The mode can be spared directly for explaining the material, should the audience have any questions (in fact, an intramural class will be held in the "flipped classroom" format). In this case, communication is performed not only along the

teacher-to-student line but also along the student-to-teacher one. This fact reveals another advantage of mixed learning: students are provided with a certain volume of independent work they must master before getting theoretical knowledge on this or that course topic. Relevance of such a scheme of learning is associated with reducing the academic hours for lecture classes and increasing the hours allotted for practical classes and independent work.

Let it be noted that within the context of streamlining organization of the educational process based on the parallel and successive use of the synchronous and asynchronous learning modes, their extensive use not only in conditions of distance learning form for students of the intramural department, but also in organizing the work at the extramural department, as well as for master degree course participants, is an indisputable advantage.

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## THE STATUS OF NARRATOLOGICAL ANALYSIS OF VIDEO GAMES IN THE CONTEXT OF MODERN POLYDISCURSIVE POSTMEDIAL CRITICISM

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Abstract: The relevance of the article is fixed by the situation of methodological revision of media theory tools in the context of the analysis of modern media phenomena. The purpose of the article is to identify the place and status of narratological analysis, which has become a classic method of video game analysis. To achieve this goal, the authors consider it important to turn to a critical revision of the narratological analysis of video games and perform an act of reassembling the methodology under the new requirements of the time. For this purpose, the article analyzes the development of both the current situation and the dynamics of the use of the narratological method.

Keywords: video games, narrative, media, ludology, game studies, methodology, postmedial approach.

### 1 Introduction

The current stage of development of culture and society can be characterized as a situation of pervasive technological mediatization. The multiplying forms and methods of transmitting and broadcasting information require close attention from the theoretical and philosophical understanding. The forms of classical media analysis, according to a number of media theorists, fail when faced with those interlacing forms of mediation that are typical of the state of modernity (Manovich, 2017). Consequently, in order to address the analysis of the media of the era of remediation, it is necessary to develop a number of theoretical and methodological guidelines that would meet the peculiarities of the objects under study. This requirement for the novelty of the method does not mean the requirement of epistemological anarchism at all, on the contrary, classical media studies conducted by M. McLuhan (2018), R. Barthes (2014), and many other theorists should form the basis of a new methodological "reassembly". In this article, we propose to conduct a critical analysis of the narratological method in the context of the study of video games as a specific and separate method of mediation, cultural practice of appropriation, translation and transmission of meanings. Given the certain fecundity and, without exaggeration, the fruitfulness of narratological research in this area, it should be noted that, in general, studies based on the analysis and identification of exclusively narratological elements of video games (and other forms of media) demonstrate a reductionist tendency. Nevertheless, the fact that there is an element of reductionism in the narratological method does not yet indicate that its tools cannot become part of a synthetic analytical method for the study of video games (and, more broadly, modern polymedial forms of communication). It becomes urgent to revise the place and status of the narratological analysis of video games in order to effectively include it in the tools used for the study of video games in the context of a theoretical rethinking of the analysis of media phenomena.

Video games as an object of media theory research are, if not the most unfamiliar object of research, then to some extent an object that combines two factors that hinder theoretical grasp (from the English grasp - understanding of the essence, understanding). The first is a relative novelty, indeed, video games have their history since the 1980s, a number of works devoted to the study

of the specifics of media and communications somehow touch on the problem of video games, but to the extent that it seems necessary to pronounce the presence of such media, but not to dive into its research at a self-sufficient level. The second one correlates with the first one, and directly enhances the effect of detachment from serious video game research, it represents a kind of prejudice against the study of video games as an independent form of media, since there is a classic game. It cannot be said that since the research of J. Huizinga (2015) and R. Caillois (2007), radical changes have taken place in the theoretical understanding of the classical game, in a certain sense, game research during the twentieth century remained stigmatized due to the frivolity of its object. Thus, video games remained, as it were, on the sidelines of serious media theoretical research, representing a rather closed and marginal area. The situation of our time requires the development of a specific theoretical language for the analysis and understanding of this media, since now video games are not just a small part of the media space, but a cultural industry with billions of turnover and widespread distribution.

### 2 Literature Review

The methodology of video game analysis is based on the theoretical framework of classical game analysis that precedes it both chronologically and in the context of a common continuity. Indeed, the key works in this direction are the work of Y. Huizinga "Homo Ludens: The Man Playing" (2015) and R. Caillois' research "Games and People; Articles and Essays on the Sociology of Culture" (2007). J. Huizinga (2015) laid the foundations for understanding the game as a serious and full-fledged phenomenon of cultural creation, R. Caillois (2007) has developed a specific sociological approach to the analysis of game forms in everyday life and the social sphere of human activity. Nevertheless, classic games differ significantly from video games and it is necessary to turn to special sources in order to clarify this specificity. First of all, an important addition that builds a methodology for analyzing video games at a fundamental level is the theory of media, proposed by M. McLuhan in the work "Understanding Media: External Human Extensions" (2018). M. McLuhan (2018) is definitely a classic of media theory and his work laid the foundations for understanding media, but the current situation requires a revision of a number of classical positions due to technological changes that have occurred since the 60s of the twentieth century. As such an addition and expansion of the understanding of the method and the problems of media analysis, it is important to refer to the works of L. Manovich "The Language of New Media" (2018) and "Theories of Soft Culture" (2017), in which he makes a theoretical revision of the classical theses of M. McLuhan (2018) and postulates the situation of transition to a postmedial methodology. A Particular interest in the development of video game analysis is presented the works of Z. Tsilinsky "Archeology of Media: about the "Deep Time" of Audiovisual Technologies" (2019) and O. Grau "Emotions and Immersion: Key Elements of Visual Research" (2013), aimed at considering the development of media phenomena from the perspective of media archaeology, that is, in their genetic technological continuity and interconnection.

The key in the context of analyzing the content of video games and describing the cognitive-imaginative experience practiced by players is also an appeal to the narratological analysis of this media phenomenon proposed by E. Aarseth (1997). Narratological analysis itself is a direct continuation of literary analysis and text analysis. The main prerequisites for the formation of this direction in the analysis of video games are an appeal to the works of R. Barthes (2014), J. Campbell (2019). Nevertheless, coming out of the classical text analysis, narratology as applied to video games acquires its own special, specific features. The principles of narrative analysis in the context of its application in the analysis of video games and the

limitations that arise in connection with the specifics of the object under study are presented in the work of J. Yuul "Do Games Tell Stories? A Brief Note on Games and Narratives" (2015). Together with the critical content of the methodology of text analysis, R. Barthes specific direction arises in the critical analysis of the narrative, during which it becomes possible to detect the content elements of the narrative of a video game based on the socio-political experience of the real world.

A significant innovation in the methodology of analyzing media phenomena was the introduction of the concepts of "plurality of ontologies" by A. Mol (2017) and the conceptual apparatus of actor-network theory by B. Latour (2014). Being perceived, the conceptual developments of the actor-network theory were also introduced into the context of the study of media phenomena, including video games, as demonstrated by the work of Ya. Bogost (2015).

### 3 Research Methodological Framework

**The purpose of the study** is to determine the status of the narratological analysis of video games in the situation of methodological transformation of modernity.

#### Research objectives:

1. to identify the peculiarity of the current situation in the context of methodological features of the analysis of media phenomena;
2. to identify the methodological advantages of narratological analysis of video games;
3. to determine the limitations of the narratological method in the context of the criticism of narratology in relation to the phenomenon of video games from the standpoint of ludological analysis;
4. to determine the place and status of the narratological analysis of video games in the context of the revision of methodological discourse within the framework of the polydiscursive methodology of actor-network theory.

As a basis for the methodological basis in the framework of the study, the authors rely on the analysis of sources of modern and classical media theory researchers in the context of determining the specifics of the current situation in relation to the analysis of media phenomena. The reliance is made on the understanding of the narratological analysis by E. Aarseth (1997). The critical analysis of the narratological method is presented in the key of the ludological criticism of J. Yuul's narratology (2015). The basis for the methodological reassembly is the conceptual theses of the theorists of actor-network theory of A. Mol (2017), B. Latour (2014) and Ya. Bogost (2015).

The authors make a comparative analysis of the positions of video game analysis theorists E. Aarseth (1997) and J. Yuul (2015), during which both the advantages of the narratological method and its disadvantages are revealed. The synthesis of general methodological guidelines of actor-network theory, postmedial approach and narratological method of video game analysis included in the context of a synthetic approach to media research is carried out.

### 4 Results and Discussion

First of all, it is necessary to identify the specifics of the current situation in the field of video game analysis. The characteristic problem of analyzing new media is associated with several complicating factors: firstly, video games are directly genetically related to classical games, but at the same time, they contain an element that deeply distinguishes them, namely, a technical and technological component; secondly, the very polymedia specificity of video games pushes for the proliferation of methodological optics for analyzing this phenomenon.

Let us turn to the first of these complicating factors that form the peculiarity of a new object of research within the framework of media theory. Video games are the heirs and direct successors of a broad cultural phenomenon - Games. Since ancient times,

games have taken many different forms: live and outdoor games, riddles, board games, etc. But it was only with the advent of digital technology, namely the advent of computer technology, that it became possible to create what we call video games or computer games. Video games have the opportunity to unfold not within the boundaries defined by the real world, but, according to V. Flusser (2009), to "project", that is, to create their own digital (computable) reality. It cannot be said that in classic games, the game world was completely dependent on the world of reality, human imagination was certainly involved in its creation, which gave this game world an element of freedom and non-determinism. While a computable digital video game has become tightly tied to the software component (it is possible to go further and as Ya. Bogost (2015) to determine the mechanical dependence of the game on the architecture of the computing device) without allowing any elements of genuine freedom and non-determinism. Rules and laws of action of the game, which J. Huizinga (2015) wrote about, have become absolutely immutable, in a video game they must inevitably be implemented for its functioning only as prescribed by the software component.

The second important aspect is the polymedial component of the video game. Polymediality should be understood as a form of information transmission and data transmission, in which several channels of classical media are involved at once, described, for example, in the work of M. McLuhan (2018). This aspect in relation to the entire space of media phenomena was considered in the work "Theories of Soft Culture" by L. Manovich (2017) with the subsequent call for the formation of a "postmedial" theory after his in-depth analysis. In fact, L. Manovich (2018) argues that the era when it was possible to talk about the specifics and features of the media ended at the same time as the media phenomenon began to go beyond the individual media. L. Manovich (2018) refers to such media phenomena, including video games. Indeed, one cannot disagree with the fact that video games cannot be adequately analyzed and conceptualized within the framework of a single classical media. As noted above, video games cannot be described by identifying them with games in their classical sense. This kind of generalization procedure will defocus theoretical optics so much that through it we will be able to see the game in general, but we will not be able to see any particular features and lose sight of the specific effect of video games as a media or polymedial structure.

In such a situation, there are double complications and there is a search for adequate methodological tools for theoretical work with a video game as a multifactorial phenomenon.

Now let's turn to the definition of the advantage of the narratological method in the analysis of video games. E. Aarseth (1997) proposed a model for analyzing video games, in which they were evaluated as a kind of invariant of narrative media (such as books, cinema, etc.). Proceeding from the principle that the basic mechanism of mastering reality for a person is the transformation of the whole variety of experience into a narrative, which, according to the researcher, correlates with the logic of the linguistic nature of human thinking, E. Aarseth (1997) concludes that all the variety of media phenomena are some invariants of the narrative way of mastering the world. That is, every media must include narrative elements that are not just present in it as a kind of complement, but perform a key function, structuring the content of the media and turning it into consistent stories consistent with the thinking and way of perception of a person. In such a situation, a video game becomes a kind of text with additional elements of visualization and immersion, which in general can be neglected by focusing on the structural and semantic levels of this media.

A number of theses are put forward in favor of the narrative method. A holistic thesis is about the narrative as the most general structure of mediation, which includes video games. Indeed, an important aspect is the fact that the player perceives and describes the experience of the game within the narrative that has developed in thinking under the influence of video games as media. The narrative structure of experience and

memories is of particular interest in the context of a conversation about the experience of any mediation, not only related to the specifics of a video game. But video games are no exception in the matter of transforming the mediation experience into a narrative form. Thus, it becomes appropriate to consider video games from the perspective of narrative analysis already insofar as the experience gained by the player is eventually transformed into a narrative, even if the structures of the video game themselves could not contain a narrative.

The second thesis in support of the narrative analysis of video games is the quite natural statement that video games often (if not always) contain narrative elements as an accompaniment that frames the game play. So certain games may be devoid of a narrative component in the course of the game, but they contain a backstory, narrative plot inserts, titles at the end, telling about what happened after the end of the game. Thus, even if the narrative was not fundamentally embedded in the body of the video game, it remains an essential part, complementing the game play "from the outside".

The third thesis in defense of the narrative method for analyzing video games says that if we do not perceive video games as a narrative in its entirety, we cannot deny the fact that they contain elements characteristic of narrative structures. For example, the following aspects can be cited: the linearity of game sessions corresponding to the linearity of the narrative; the presence of a protagonist and/or antagonist; movement from shortage to its replenishment, etc. That is, in video games, those elements can definitely be identified that can be considered effectively and adequately from an epistemological point of view from the position of narratological analysis.

Taken together, these three theses form the foundation for the substantiation and application of the narratological method to the analysis of video games. Even abandoning one or even two of them, with the proper degree of awareness, it is possible to apply this methodology and obtain coherent results. But, nevertheless, the narratological method has been subjected to serious and justified criticism. The direction that first criticized narrative analysis, pointing out its limitations, was called the ludological direction in the analysis of video games.

Nevertheless, it is necessary to identify weaknesses and identify trajectories of criticism of the narratological method of video game analysis. The most striking and convincing criticism from a methodological point of view was expressed in the work of J. Yuul "Do Games Tell Stories? A Brief Note on Games and Narratives" (2015). J. Yuul (2015) offers three counter-theses in contrast to those proposed by representatives of the narratological method, in order to identify the distinctive features and specifics of the object of study (video games) from the classical narrative.

The first counter-thesis of J. Yuul (2015) is the statement that video games and narrative media (books, cinema, and theatre) are in different "media-ecological niches". The essence of this thesis can be reduced to the following statement. The story presented in the classical narrative media, being transferred to a video game, is transformed so much that it will cause a person to have a completely different experience of adventure and involvement than the original.

The second counter-thesis expressed by J. Yuul (2015), lies in the fact that the attitude to time in the classical narrative and the practice of video games is fundamentally different. According to J. Yuul (2015), there are significant differences between the "now" interaction of a video game and the "past" and "preceding" narrative. Interaction destroys the fabric of the narrative because there are no completely consistent interactive stories. Interactivity presupposes multivariance, while narrative presupposes consistency and progressive coherence of the plot.

The third counter-thesis refers to the position of the player in a video game and the reader/viewer in narrative media. While the reader/the viewer takes a fundamentally external position in relation to the plot unfolding in front of him, the player is,

according to J. Yuul (2015), in the "twilight zone", remaining a subject outside and simultaneously acting inside the media.

Three counter-theses of J. Yuul (2015) are based on an appeal to that component of the video game, which is usually called "mechanics". Mechanics represent such a structural element of a video game as media, which allows it to be interactive. That is, it is essentially a mechanism for the reaction of the video game ecosystem to the actions and commands of the player. As a result of reactions to the corresponding actions, the ecosystem of the video game changes and as a result of this, the effect of interactive participation arises. Based on the ludological method, it is this feature of video games that is worth paying attention to first of all, and it is this structural element of the video game that narratology overlooks.

Let's turn to identifying the trajectories of methodological reassembly and determining the place of narratological analysis of video games. Comparison of the two approaches reveals an interesting feature that is even more clearly manifested if we pay attention to the epistemological problems of video game research through the prism of the concept of multiple ontologies proposed in the work "Multiple Body: Ontology in Medical Practice" by A. Mol (2017). The concept of multiple ontologies was inspired by the works of B. Latour (2014), who proposed a new approach to obtaining sociological knowledge. The main results and ideas of B. Latour (2014) were published by him in the book "The Reassembly of the Social: an Introduction to Actor-network Theory". The peculiarity of the narratological and ludological methods is that they both produce a formalist reduction, that is, they reduce the variety of manifestations and variants of the study of video games to one universal form-structure. In the context of narratology, the text becomes this form and everything that does not fall under the optics of the text disappears from the problematic field of narratology. A similar situation occurs with ludology, only in its case everything that does not fall into the category of interactivity/mechanics disappears from the field of view. In addition, the thesis of L. Manovich's postmedial approach (2017) asserts the impossibility of studying any media phenomenon from the position of reduction to one type of mediation.

Criticism of the methodology of video game research from the standpoint of B. Latour's actor-network theory (2014), multiple ontologies and postmedial turn was carried out by Ya. Bogost in the article "Mess in Video Games" (2015). Ya. Bogost (2015) proposed to consider video games as a multifactorial phenomenon, the essence of which is not reduced to any universal form. That is, the essence of a video game cannot be reduced to either text, mechanics, or technical component, etc. In contrast, he proposed to consider video games at many levels of ontologies, which, although they are interconnected, but these connections do not represent hierarchies or relationships of more fundamental and less fundamental. This implies a polydiscursive way of describing a video game, in which several modes of object description are simultaneously presented as equivalent and there is no tendency to reductionism. This approach is largely followed by the Russian video game researcher A. Vetushinsky in the article "To Play Game Studies Press The START Button" (2015).

In the context of a polydiscursive description of a video game, the narratological method and, in general, the discourse of narrative analysis, with all of the above, remains a legitimate method of studying video games and their individual elements (plot, symbolic component, features of the narrative system, etc.). It organically fits as one of several possible fundamental methods of studying this media phenomenon into the picture of the postmedial turn, the polydiscursive approach of actor-network theory and the concept of multiple ontologies. It is necessary to revise the formalist claims of the narrative method to describe all the specifics of a video game through the categories of text and narrative and integrate this method into a polydiscursive analytical toolkit in order to successfully describe in video games what really fits into the description with the help of a narratological apparatus.

## 5 Conclusion

The conducted research of the status and place of the narratological method of video game analysis within the framework of postmedial polydiscursive criticism has shown that narrative analysis has a long and stable practice of application as a tool for analyzing the video game media phenomenon. The advantages of narratological analysis of video games were revealed. In the course of the study, the methodological limitations of the narratological method taken in isolation are demonstrated. It was determined that in the conditions of the postmedial turn and the introduction of the multiplicity paradigm, it is necessary to reconsider attempts to explain a complex media phenomenon from the position of only one explanatory model. Also, the tendency of formalist reduction, to which the narratological discourse tends, should be criticized, explaining the complexity of the video game phenomenon through reduction to the text. Nevertheless, the narratological method of video game analysis has undeniable advantages in the context of local studies of individual elements of video games and within the framework of a broad polydiscursive approach can be used in addition to other methods.

### Literature:

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### Primary Paper Section: A

### Secondary Paper Section: AA, AM

## THE ORDER OF LIFE AS A BASIS OF HUMAN WELL-BEING

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**Abstract:** The relevance of the research is associated with the necessity of building the favorable human life path in the contemporary rapidly changing world. The authors understand the order of life as the correct, established existence of people. Results of the research include elaboration of general principles of regulation of life: avoid the worst, reach out for the best, reveal the best, keep the best, create the best. In the paper, it is noted that adherence to these principles enables one not only to regulate one's life but also render the very order of life the basis of one's individual being in the good.

**Keywords:** human life path, order of life, consistent course of life, favorable life, existence, corporeality, socialization, spirituality.

### 1 Introduction

The 21<sup>st</sup> century has not only accelerated the course of social processes but also led to the chaotic conglomeration of links and relations between people; the latter resulted first of all from the use of opportunities granted by the IT industry. Seeking to be everywhere on time, people get included into the information flow carrying them from one event to another and not giving them a chance to ponder over their life for a while. As a consequence, life is formed as if on its own due to various circumstances. Obviously, given the contemporary situation, the question of building one's own life path must be highlighted necessarily.

Man as a rational being must use the opportunities of his intellect and get extensively included into the process of creating his individual being. This implies regulating relations and organizing his life. Clearly, man cannot be after everything the social environment has to offer him. He must select what is the most suitable for him, what promotes improvement of his existence and reject everything superficial, worthless, destroying his life. To achieve this, man must have "tools" helping him build his life so that it would tend to positive aspects, too, and reveal the best facets of his very personality as completely as possible.

The ability to build one's life path in line with the knowledge of the "order of life" is largely the pledge of success, well-being, and fullness of the latter. Knowledge of the "order of life" is a practical "tool" for modeling one's own biography and daily life, which determines the practical importance of this research. Special relevance of this research is associated by the external aggressive actions on humankind: globalization processes (separation from the national roots); mass consumerist psychology being imposed on the society (pseudo-ideals and pseudo-values); pervasive diffusion of post-modernist culture (derision of the classics, overthrow or reappraisal of centuries-old shared human ideals and values).

### 2 Literature Review

When working on the paper, the authors relied on writings of Russian thinkers covering the questions of human life. With regard to this, monographs of E. P. Savrutskaya (1989), I. V. Sukhanov (1976), B. G. Ananiev (2001), K. S. Golikov (2020), and P. A. Kislyakova et al. (2020) are prominent; they investigate social aspects of human life in detail. Beyond the society, people cannot fulfill their abilities. It is only by getting included into the life of the society that one gets an opportunity

to create one's own life path. While sharing this statement, the authors suggest that within the question of searching for the favorable human life path, problems of corporeality and spirituality have to be addressed, too.

G. J. Craig's ideas (2001) focused on an integrated study of human life in various age periods also came to the authors' attention. One grows, changes, develops while gaining new opportunities for self-fulfillment which positively have to be made use of in the process of building one's life path. With regard to this, the gained opportunities must not shade out the abilities and skills accumulated in the course of life. On the contrary, they must promote enrichment of existing behavioral constants of the personality which actually determine its essence.

Some curious statements broadening the range of problems of this paper were noted by the authors in S. L. Frank's works (1997). The spiritual world of people is a complex formation. Alongside the soul element, it incorporates the organized principle of soul, too. A man must know about this feature of his spiritual world and do his best to restrain manifestations of the soul element and prevent them from determining his line of behavior at the responsible points of being. Obviously, this aspect of the problem needs studying, too, as applied to the question of people's well-being.

Within the context of religious approaches to the topic of human life, it is works by Theophan the Recluse (2019) that draw attention. In them, he voiced many ideas that are important for understanding the singularity of life of each person; he also considered means to help people change their life for the best. It is this "instrumentality" of the thinker's ideas that allows addressing to them over and over again to arm people with efficient means of creating their own life path.

As a total, the said works have contributed to elaborating the integral approach to comprehending the role played by the order of life in building the favorable human life path.

### 3 Research Methodological Framework

The objective of the paper is to substantiate the statement about the order of life as the basis of people's well-being. Achievement of the set objective is ensured by completing the following tasks:

1. to detail the understanding of the term "the order of life";
2. to discuss the role of culture in the question of regulating human life;
3. to word the main principles of regulation of human life;
4. to demonstrate the importance of the individual philosophy in improvement of people's life.

Methodological basis of the research consists in the integrated approach relying on the principles of dialectics, historicist tradition, and consistency. Alongside these, the authors extensively used in their paper the methods tested out by the entire philosophical experience, too: analysis and synthesis, induction and deduction, the dialectical and comparative historical research methods.

Methodological framework of the research is associated with fulfillment of ideas of the integral approach to understanding of the questions of people's building their life path. Meanwhile, the authors of the paper extensively use the methods of actualization and instrumentalization when approaching interpretation of philosophical statements. Apparently, ideas on man and his life voiced several hundred years ago can, and therefore, must be used as applied to analyzing modern human life. So, in particular, the statement worded by V. I. Nesmelov (2000) is fundamental in terms of methodology. In his work "The science of man", he deemed it important to raise the question of "establishing the solid order of life among people" (p. 258). The introduction of the statement about the "order of life" into the scientific use has allowed posing the question about foundations of favorable life formed in the process of human existence.

Meanwhile, it is extremely critical to distill the instrumental aspect which helps enhance the practical constituent of the philosophical knowledge. Essentially, the order of life is the "tool" to aid people in changing their life for the good and reinforcing the quality of their life. It is to proving this statement that this work is dedicated.

#### 4 Results and Discussion

Detailing the concept of the order of human life, let interpretation of the word "order" be paid attention to. S. I. Ozhegov's dictionary (1975) of the Russian language says: "Order – the correct, established state, position of smth. ... the consistent course of smth" (p. 520). Relying on this understanding, it can be said that the "order of life" is people's correct, established existence, the consistent course of their life. According to this definition, the order of life is a formation which takes shape in the process of human existence and determines its quality. The very quality of life is associated with its correctness, i.e., orientation to the best examples of human experience enabling one to build exactly one's own favorable life path.

It follows from here that the order of life concept is an axiological concept acting as a value of human being. Not only must one live but one must also seek to establish the order in one's life which will promote its improvement. Beyond the order of life, it is only disorder that can be; it will complicate life for one and fail to create any conditions for its improvement.

To gain the favorable life path, efforts have to be made to improve one's individual being and gain the correct, consistent course of life. In other words, the order of life becomes an essential component, the basis of the favorable human life path. Let it be noted specifically that it is vital that one exactly regulate one's life, i.e., weave reasonableness, determination, and consistency of the course of events into it. Let this question be discussed in more detail.

It must be mentioned before everything else that considering the question of regulation of human life implies turning to the culture in which the experience of people's favorable being has been crystallized. This experience is versatile. It has found its representation in the oral lore and in homilies and instructions of thinkers of the past. Let it be discussed to find out the aspects of interest within this study.

First of all, one must speak about the folk culture represented in proverbs and sayings. They have always helped people with some good advice. It is enough to remember such sayings as "Better say nothing than not to the purpose", "Better bend than break", "The longest way round is the shortest way home", "Actions speak louder than words". In these exact phrases, the centuries-old experience is rendered which can always serve people the good turn and help reject whatever drives them away from the best. It is no mere chance that they say "A good maxim is never out of season". On top of proverbs and sayings, numerous traditions and customs preserved within national cultures must be noted (Sukhanov, 1976). Turning to them, people have shaped their way of life and polished the standardized behavior patterns which would help them in their daily routine. The secular culture with its focus on enlightenment has done much for regulation of life, too. Creation of theatres, museums, and schools helped introducing people to the best specimens of culture and thus promoted regulation of human life.

An especially meticulous study of the necessity of order in people's life was worked out in religious literature which incorporated various sermons and homilies. As applied to the topic of this research, it is ideas voiced by the Christian thinker Theophan the Recluse (Theophan the Recluse, 2019) that resonate. In his works, he wrote much about the order of life. Quite naturally, he did it from the standpoint of Christianity; however, many of his conclusions touch on human daily life and so can well be used in analyzing the subject of interest for the authors. So, developing the idea of the necessity of order in

people's life, St. Theophan paid attention to a number of important aspects. First of all, he emphasized that it is essential that the "favorable order of things" be formed (Theophan the Recluse, 2019, p. 107), which helps people become better. How can it be achieved? The answer is simple – one needs attention. "Without attention, you cannot do anything properly in the earthbound order, too" (Theophan the Recluse, 2019, p. 114). Attention enables people to select and fulfill the best from what they know about life. Yet this is no simple business; it requires continuous effort. With regard to this, he raised the question that one must "do with the set orders" (Theophan the Recluse, 2019, p. 369). "Do just what you have decided to". Meanwhile, Theophan the Recluse (2019) recommended "determining rules by time" (p. 382), i.e., starting to do something at one at the same time and trying to finish the process within the set time. Clearly, such an attitude to one's life is focused organization of one's being. This "organization" is precisely the point. Life as if gains "bonds" to support it and prevent it from "getting wasted" on trifles, losing its focus on well-being.

For modern times, this holds a special significance. Being in the life chaos situation, people just need "tools" to aid them in gaining the "firmament" of being. Organization of life is exactly one of such "tools" which help people keep the best in their being and follow it. Gaining their order of life, people get the "force" which directs the flow of their life along the desirable line. This is an important statement. It adds a tinge of pragmatism into this term. Given this, alongside axiology of the subject, the order of life concept also incorporates praxeology. This is why the order of life is not only a value but also a means (tool) using which one can improve one's existence.

As an element of culture, philosophy has achieved much in exploring questions associated with people's way of life. With regard to this, E. P. Savrutskaya's monograph "The way of life and historical forms of communication" (1989) is a fundamental work. In it, the author quite fairly raises the question of the necessity of forming a way of life to influence human spiritual qualities. Meanwhile, she notes in reason that "life of man as a societal being is only possible in communication" (Savrutskaya, 1989, p. 23) It is through communication that man gets connected to the moral experience preserved in people's culture; it is through communication that he fulfills himself building his way of life, which means, forming his order of life, too.

These statements are also important for the contemporary period. Seeking to be original, young people sometimes discard moral standards of behavior as the obsolete ones. As a result, they start going away from the favorable life path. Losing the order of life established by their ancestors, they leave their vessel of life rudderless, putting it vividly. Wandering in the chaos of being, they are doomed to miseries. So, it is better to keep everything good from what helped ancestors in their life path and incorporate it into one's own order of life – and go on creating the best, thus paving one's own favorable life path.

The above allows wording the main principles of regulation of human life. Clearly, man cannot act as he pleases. He must reject whatever spoils his life. Hence, an important principle of human being must be the following: avoid the worst. To fulfill it, one needs "self-counterwill and self-coercion" (St. Theophan the Recluse, 2017, p. 302). Making himself step away from the vicious path, man wages struggle with himself for the best existence. Anyway, this is just the beginning. Further on, he must reach out for the best. Here, it is the best specimens of the spiritual culture that will be of help for him. Having comprehended them, man must reveal the best in his daily life. In other words, he must not only know but also use this knowledge in practice in the process of his life. Reproducing the best day by day, man preserves it and renders it an integral part of his life. So, the order of life is formed which starts "working" exactly for man. Finally, one must not only reproduce the best in life but also create and augment it. As a rule, it is life itself that flings in such chances for man. All he needs to do is to respond to them, revealing the best from the possible at each particular point of time. Obviously, by acting this way, man will gradually

arrive at the idea of creating his individual philosophy of life. This philosophy is designed exactly to reinforce the elaborated principles and to ensure fulfillment of the idea of the order of life in the very human existence.

It must be emphasized before everything else that the importance of the individual philosophy of human life is worth special consideration. It is determined by the unique nature of personality, first of all. Each person is well known to be distinct and inimitable; something which suits one person can well be inapplicable to another. It is hard to escape the conclusion that if one wants to live exactly one's life decently, one must elaborate for oneself the philosophy of one's life. That is, one must conduct a quite serious mental work on ins and outs of one's existence and identify what must belong within one's field of view necessarily.

Obviously, pondering over one's life will inevitably lead one to understanding that man is a bio-socio-spiritual being (Ermakov et al., 2020, p. 102). This is why his individual philosophy of life must incorporate subjects of corporeality, socialization, and spirituality.

The importance of the philosophy of corporeality was considered by I. S. Kon (2009) in his work "Men in the changing world". A man thinking about the favorable life path must understand the specific features of his gender, grasp the particularities of his temper, understand his abilities (talents), and comprehend much of what is associated with the context of his corporeality. He must also understand himself as a social being. Social and psychological aspects of this question were in the focus of B. G. Ananiev's attention (2001). G. J. Craig (2001), too, touched on the said points analyzing various social aspects of human being as applied to age. The authors agree with the way these questions are posed; let it be noted that here, analysis of the following topics is also important: "My kin", "My parents", "My teachers", "My family", "My studies", "My hobbies", "My age", etc. In its turn, this "stratum" of human being must be supplemented with the philosophy of spirituality. With regard to this, much was done by S. L. Frank (1992, 1997). For him, the spiritual world of people is the total of the soul element and the organized principle of soul. Hence it is vital to comprehend the values, ideals, and aspirations that people hold. Moreover, it has to be borne in mind that the spiritual interests, needs, and satisfaction thereof are the objective of human existence (Ermakov et al., 2018, 2020; Thurman et al., 2017). All these aspects need studying in detail. Alongside this, some important questions to be discussed are "What do I believe?", "What is truth and verity for me?", "What is my understanding of the beautiful?", "What is my understanding of the meaning of life?".

It has to be noted that the individual philosophy of life is created in the course of the entire human life passing a number of age stages in its development. This is why it should be spoken about the philosophy of adolescence, philosophy of youth, philosophy of maturity, philosophy of the advanced age, and the philosophy of the old age. Each of them has its particularities and its priorities. Speaking of which, one developing one's philosophy of life can see the crests and troughs years later which have taken place in one's existence. Meanwhile, what was the top value for one in the philosophy of youth may well lose its importance in the philosophy of the old age, and vice versa. The individual philosophy of life is reflection upon one's own life, understanding of its regularities and trends. At the same time, it is the "tool" for changing and improving human life human. Relying on the individual philosophy of life, people can build their own life path comprehending their order of life and improving it.

## 5 Conclusion

The above allows making the following conclusions.

Defining the order of life as the correct, established existence helps understand the foundation of people's being in the good. Trying to gain such an existence, one must regulate one's life, weave reasonableness, determination, and consistency in the

change of events into it as far as it is within one's control. This is the only way for one to embark on a path of improving one's life. Meanwhile, it should be remembered that the very term "order of life" pertains both to axiology and to praxeology. In other words, it is not merely a term to be used as applied to the subject of the favorable life path. It is a phenomenon pointing to the necessity of maintaining organization in the human existence.

It is culture that is the keeper of the centuries-old experience promoting improvement of people's life human. By turning to the origins of the spiritual culture, the long-standing religious experience, philosophical literature, one can understand for oneself what correct there is in human life and what one should pursue for improving one's life. Due to this, "collecting" the correct becomes an important task for people. Certainly, they must be taught to do so by adults, teachers. Essentially, it is the task of school to motivate young people to seek the correct in their life, having provided them with examples of the best.

Elaboration of general life regulation principles – avoid the worst, reach out for the best, reveal the best, keep the best, create the best – enables one to not only improve one's life but also render the very order of life the basis of one's individual being in the good. In this process, a human cannot do without attention and patience. With the help of these, one can make some adjustments to the order of one's life and follow it.

The individual philosophy contributes to gaining and reinforcing one's own order of life. It is a "tool" for changing and improving the very human life, too. Relying on the individual philosophy of life, people can actually bring some change into their existence and help improve it. It is only this way that one's own order of life can be developed which will be supplemented, sometimes modified, but it will always foster improvement of one's being in the best way possible and turning it into being in the good.

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**Primary Paper Section:** A

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## THE STUDY OF THE PROBLEM OF ARTISTIC IMAGE FORMATION IN VISUAL ARTS

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**Abstract:** The reflection of the artistic image of a person is the fundamental principle in art. The problem of the research is to find effective methods of pedagogical influence aimed at the formation of an artistic image in the drawing of a portrait of students. Through understanding the image of a person, the creative potential inherent in each student is revealed, a worldview is formed, the general cultural and professional level increases, the inner world is enriched. The formation of the worldview of the younger generation requires an integrated approach to learning. It follows from this that in modern conditions, education in art institutions cannot be limited to the acquired skills and skills of a competent image of a person, but requires solving a number of tasks related to the formation of an artistic image in a portrait.

**Keywords:** creativity, artistic image, educational space, fine art, artist-teacher, students.

### 1 Introduction

Ignoring artistic and figurative tasks in portrait drawing classes, even if the requirements of a realistic representation of the form are met, is the reason for naturalism - a simple copying of nature, without reflecting the inner world, the identity of the individual, his individuality, which is the most valuable in a person.

For several centuries, a large number of studies have been conducted in Russia, where the problem of the formation of an artistic image has been vividly revealed. The problem has been considered by scientists from various fields, ranging from art historians to psychologists and philosophers, and acquires a special sound when it comes to the younger generation studying in art institutions. After all, through understanding the image of a person, the creative potential inherent in each student is revealed, a worldview is formed, the general cultural level increases, the inner world is enriched.

It is no secret that the image of a human figure is the foundation in teaching academic drawing. The interpretation of the artistic image in the portrait reflects not only the characteristic features of that time, but also the vision of the artist himself. No genre in art is as spiritually meaningful, comprehensive and informative as a portrait. It is difficult not to notice how in our time there is a complete deformation of the image of a person, which directly affects the visual arts. The reason for this was the introduction of new IT technologies, when any knowledge is obtained in a ready-made form, a person lives without learning and analyzing, which leads to a decrease in the cultural level.

The urgency of the problem of training students of art institutions is obvious, and it is not only acquiring knowledge, skills and abilities of the correct image of a person, but requires solving a number of imaginative tasks aimed at forming an artistic image in a portrait. The artist-teacher not only shares valuable knowledge with students, but also has a direct impact on the formation of their worldview, aesthetic and ethical attitudes. The question arises what aesthetic, philosophical positions the teacher-artist is guided by when correlating the teaching of academic drawing, firstly, with the human image.

### 2 Literature Review

Under the term "artistic image" it is advisable to understand a special format of reflection of the surrounding reality and its perception by the artist (Ozhegov & Shvedova, 2015). And this format finds expression through concrete, and its implementation

takes place within the framework of the creative process. At the same time, the reflection of the surrounding reality implies some similarity between the original and the way of its depiction. In the context of realism, this phrase seems unconditional and obvious.

Agreeing with da Vinci's positions, A. P. Losenko was sure that it is most rational to depict a person in motion: a stationary position does not allow revealing the structure of the body of a living being (Moleva, 1991; Otrishko, 2021). Most likely, this opinion seems to be extremely significant from the point of view of teaching the creation of portraits. In fact, reproducing nature literally, it is impossible to achieve the goal set by the teacher, because even reproduction in the position of the image of jumping, running, etc. does not reveal the essence of the body movement. In order to give dynamism to a stationary position, you need to add your perception of nature to your understanding of nature by performing a large number of subtle manipulations in your mind.

As a result, the student's perception itself is endowed with activity. The emergence of the problem ensures the development of figurative and artistic thinking. L. S. Vygotsky (2011) himself says that a person's thought in any case follows from any problem.

B. V. Lushnikov (2019) sought to penetrate into the essence of the artistic image, dividing the drawing into two types: three-dimensional and picturesque. However, the author analyzes only the outwardly expressive side of the artistic image, questions about the emotional content of the image remain outside the scope of his attention.

A. A. Kovalev (2001) his research noted that visual arts and decorative and applied arts are two areas that have a common focus of pedagogical activity – increasing the level of imaginative thinking among students.

The main feature of M. D. Bernstein's pedagogical system (1940) is the deep connection between academic school and creativity. Figurative tasks should be set at all stages of academic education: from the simplest geometric bodies to portraits and figures.

There are three important components in an artistic image, without which you will not get a high result - this is the idea, the work and the perception. But at the same time, the draftsman should avoid ambiguity so that the viewer adequately perceives what he saw.

Thus, the analysis of existing studies has enabled us to establish that by now, the problem of the formation of an artistic image has a number of unresolved issues, and the degree of study of this problem is low; that is why there is a need to identify the most effective methods that contribute to the formation of an artistic image in the visual arts.

### 3 Research Methodological Framework

The purpose of the study is to identify and scientifically substantiate the most effective methods of pedagogical influence that contribute to the formation of an artistic image in the process of working on a portrait.

Research objectives:

1. to review foreign and Russian studies of the problem of artistic image in academic portrait drawing;
2. to identify effective methods of pedagogical influence aimed at the formation of an artistic image in the drawing of a portrait of students.

The research material is represented by the works of leading experts in the field of psychology, physiology, pedagogy, art

history, philosophy of fine arts, methods of teaching academic drawing, creative experience of artists.

While writing the article, the following methods were used: theoretical and methodological analysis and synthesis of available special Russian and foreign scientific-methodological and psychological-pedagogical literature, conceptual analysis of scientific articles and publications on the topic; study and generalization of both Russian and foreign developments and introduction into the educational process of effective ways to form an artistic image of students; application of methods of generalization, comparison, forecasting and systematization.

#### 4 Results and Discussion

Currently, there are several approaches in philosophical science to solving the problem of figurative-artistic thought in the surrounding reality, but at the moment the approach that appeared in a more modern period due to a compromise between the views presented above and mutually exclusive views is relevant, therefore it is advisable to perceive figurative-artistic thought as a community of processes at all levels (superconscious, unconscious, conscious), where, of course, the conscious process prevails.

Thinking carried out consciously has a connection with the functioning of the cerebral hemispheres (left and right) responsible for imaginative and logical thinking activities. Experts have repeatedly discussed these processes. Many of them, including the authoritative physicist I. P. Pavlov (1963), were sure that the artistic disclosure of the surrounding reality is one of the types of activity of the figurative plan, which does not affect the logical thinking activity.

Imaginative thinking activity is extremely important for the activity of the visual plane, where a real artist is a thinker, where logic is certainly present.

In realism, the formation of an artistic image is directly related to moral responsibility to society, when an emotional and intuitive process plays a role in the works.

In the components of the reflection of the surrounding reality, both logical and imaginative mental activity take the same part, whereas in another aspect (the reflection of the artist's personal perception), it is the imaginative mental activity associated with superconsciousness, subconsciousness and emotional experiences that has the dominant position.

According to I. P. Pavlov (1963), all individuals are divided into 2 groups: "thinkers" and "artists". The scientist took the mental way as a differential sign.

Representatives of the category "artists" are dominated by imaginative thinking activity, representatives of the category "thinkers" - logical thinking activity. Nevertheless, the "Pavlov" typology is practically useless, because the classification formulated by the researcher has a conditional character, and in reality "pure" "thinkers" or "artists" are found in extremely rare cases.

As a rule, there is often a mixture in which the characteristics of both groups exist in different ratios. Of course, a teacher-artist must necessarily have both logical-thinking and imaginative-thinking abilities that are at a high level of development. The first ones give him the opportunity to correctly reveal the meaningful side of his thoughts and present them to students. Imaginative-thinking abilities enable the teacher-artist to achieve successful results in creative and artistic activities. According to I. B. Bicheva and S. N. Kaznacheeva (2021), the personal characteristic of a teacher-artist is aesthetic feelings and a high level of their development, which indicates emotional responsiveness to works of fine art.

It is necessary to analyze in more detail the subtle facets of differences within the framework of the image-thinking process, differentiating the specifics of the processes of the mental plane

(imagination, representation, memorization, perception) and their role in artistic activity.

Perception is an extremely significant component of creativity. According to the point of view of Ya. A. Ponomarev (1990), there are the following components: specificity; integrity; the ability to carry out artistic systematization, to foresee the perspective transformation of the object directly at the stage of perception; balance between objectivity and subjectivity of perception.

The researcher believes that in order to develop creative thinking activity, completeness and specificity in perception are important, as well as foreseeing the probable transformation of the object and understanding the creative component directly in perception as in action (Ponomarev, 1990, p. 124).

Within the framework of this context, the term "concreteness" is perceived as a property that makes it possible to spill the analyzed object with other similar objects. For example, to convey similar features when creating a drawing, a sitter should be recognized as a "dummy", but also personal specific features that differ from a certain individual from others.

Success in artistic activity directly depends on the completeness of perception, which helps to fully "see" the image of nature: external similarity, emotional state, social status, and so on. Taking this into consideration, the student should strive to develop this quality in himself as much as possible.

Do not forget about the attitude of the subjective to the objective in the work of artists, where the role of the student's attitude and views on art directly plays an important role. Perception of reality, worldview should have its mark in all student's works.

A low level of perception leads to failures in work. Errors in proportions, tonal relationships, etc. will be overlooked. Also, if you do not take into account the subjective principle, you can come to naturalism, where the student simply transfers the objects visible to them, copying and without thinking. The works should show the truth with a unique view of reality.

It is far from a secret that the mental process can dominate a certain artist (Bogolyubov, 1993). A striking example is the Impressionists, who always conveyed in their works that first moment of impression that their eye saw. Impressionists have always relied only on perception, that is why pure colors and expressive style of writing are often visible in their works.

When working with students in art institutions, studying the academic drawing of a human figure or portrait, it is worth striving for balance and maintaining balance in the work of visual activity of all mental processes. It is worth developing and improving the weaknesses of imaginative thinking and perception individually with each student. After all, it is worth understanding that the highest result in drawing a human figure, as well as a portrait, can be achieved only when the artist's perception has a high level of development. A visual impression always has a trace of past perceptions and ideas behind it, creating an image in the student's imagination based on what the artist has already seen (Nemensky, 2010).

Despite the huge role of perception, one should not forget about thought processes. A student who relies only on perception does not understand nature figuratively. The work should take place in a comprehensive manner, without any extremes.

When training, it should be borne in mind that one of the important features of draftsmen is the ability to work on a drawing for a long time (Bogolyubov, 1993). Many great artists have been "carrying" an idea for a long time, and then they have been working on its implementation for years. There is another type of draftsmen who rely on a fleeting perception of reality and make only quick sketches, a small sketch, which does not entail a long and long work.

The peculiarities of the emotional and volitional spheres also affect the course of the creative thinking process: the duration,

depth and intensity of the experience, especially aesthetic emotions. A very important point in learning is self-confidence and independence of the student in work.

Confidence directly affects creative activity; its absence will become a big obstacle on the artistic path of students. It is also worth remembering that a huge role comes from the teacher, which must take into account the individual characteristics and style of each student. An individual approach is necessary in order to work "zonally": here is the speed of entry into work, as well as intensity and perseverance.

According to the authors, the methodology of implementing the process of forming an artistic image in the works of students is very important in modern conditions of education in art institutions, since often in the works of students you can see simple copying and standard solutions where the artistic image is not visible (Zimina et al., 2020; Syrova et al., 2021).

Thus, when forming an artistic image of students, it is necessary to use the following effective methods:

1. Explanatory and illustrative method. It is based on the organization of reproductive (reproducing) cognitive activity of students, involving the perception, comprehension and memorization of ready-made information. This method of teaching consists in the fact that the teacher provides ready-made information using various means, thereby helping students in perceiving, realizing and storing this information in memory.
2. Reading short regular lectures during the teaching of academic drawing.
3. The use by students of works' reproductions by masters.
4. The use of a system of portrait productions aimed at the formation of artistic and imaginative thinking of students.
5. Compliance with the methodical sequence of work on educational and creative productions.
6. The use of a pedagogical attitude to the perception and selection of the main thing in the image of the portrayed.
7. Using the method of questions and answers in the work on the drawing.
8. The use in teaching practice of special sketching tasks aimed at the formation of artistic and imaginative thinking of students.
9. Purposeful formation of students' ability to correlate the expressive possibilities of the selected material with the tasks of the figurative characteristics of the portrayed.
10. Active use of drawing from memory, representation, imagination.
11. The use of an individual approach in teaching portrait drawing.

It is important for a teacher to combine the emotional, intellectual and spiritual spheres most vividly and holistically when working with students.

The methodology of implementing the process of forming an artistic image in a portrait of students is carried out according to the principle of visibility. The methodology is implemented through a step-by-step acquaintance with the concept of an artistic image. In addition, the use of digital technologies in education is relevant today (Lerner, 2016). As the authors note in their study, the digital educational environment contributes to obtaining a better education with the help of digital technologies, ensures the realization of the educational needs of students, increases their cognitive activity and is a favorable condition for self-regulating educational activities (Samerkhanova & Balakin, 2020).

## 5 Conclusion

In the course of the study, it was revealed that the application of an integrated approach to teaching portrait drawing involves purposeful work on the formation of artistic and imaginative thinking. Thus, from the point of view of pedagogy, it is necessary not only to look for an individual approach to each student, where their personal and psychological characteristics

are taken into account, but also to improve their communication skills through training (the Internet can be used, any additional resources). Students are responsible for organizing these events, thereby determining what they may be interested in and self-organizing each other. Also, in the process of work, the student should be active, if there is no such thing, then you need to work on development. Self-determination and self-education are a subjective part of the learning process here.

In order to explain the new topic, the teacher first verbally explains to the students what operations are to be performed, and then clearly shows the implementation process. Explaining the topic, the teacher directly shows each student how to do it correctly, explaining the actions verbally. They are aimed both at developing a confident command of the reception of work, and at developing the student's creative thinking, ingenuity, initiative. Such classes are held in the format of an artistic and educational lesson, where the teacher introduces students to the topic of the lesson, its problems, relevance, and also tells about the authors, the features of their creativity and contribution to art.

Thus, it can be concluded that the development of an artistic image leads to the development of the world artistic heritage, the development of horizons, the attitude of the individual, his perception, as well as knowledge about the world (here also thinking, imagination, fantasy, etc.). The main pedagogical lever of influence on the formation of an artistic image among students of any age is an individual approach to learning, where it is necessary to take into account mental abilities, temperament, attitude, etc. It is the right pedagogical approach that will lead to high results.

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**Primary Paper Section: A**

**Secondary Paper Section: AL, AM**

## PATRIOTIC EDUCATION OF STUDENTS OF CADET CLASSES ON THE EXAMPLE OF STUDYING THE PERSONALITY OF ADMIRAL F. F. USHAKOV

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**Abstract:** The article deals with the problem of patriotic education of cadet classes on the example of studying the personality of Admiral F. F. Ushakov. The authors present an analysis of an empirical study conducted on the basis of Municipal Budgetary Educational Institution "Temnikovskaya Secondary School No. 2" (Russia, Republic of Mordovia, Temnikov). In the course of the study, an additional educational program "Admiral F. F. Ushakov: life and feats of arms" was used. The approbation of this program contributes to solving urgent problems of patriotic education of students of cadet classes. The authors come to the conclusion that in order to achieve the effectiveness of patriotic education, a comprehensive application of various methods and means is necessary.

**Keywords:** patriotism, patriotic education, students, cadets, Ushakovites, Admiral F. F. Ushakov, Mordovia.

### 1 Introduction

The issues of education of patriotism remain in the focus of public policy in most countries of the world. Thus, patriotic values are at the center of UNESCO's attention, since these values are the basis of education, science and culture of all countries. And the Russian Federation is no exception.

In Russia, patriotic education of children and youth is one of the priorities of state policy in the field of education. This is evidenced by the Strategy for the Development of Education of students in the Russian Federation for the period up to 2025, approved by the Decree of the Government of the Russian Federation dated May 29, 2015 No. 996-r (2015), the Federal Law "On Education in the Russian Federation" (item 2 as amended by Federal Law of 31.07.2020 N 304-FZ) (2012); The State program "Development of Education", approved by Decree of the Government of the Russian Federation No. 1642 of December 26, 2017 (Federal project "Patriotic Education of citizens of the Russian Federation", 2021), which is aimed at ensuring the functioning of the system of patriotic education of citizens of the Russian Federation. Within the framework of the latest project, work is underway on the development of educational work in educational organizations of general and vocational education, holding patriotic events.

The relevance of the study is due to the fact that the problem of patriotic education of the younger generation is gaining special significance today. The building of a civil society and the dynamic development of Russia depends on the efforts of capable and responsible people who love their homeland, are able to defend its interests, and take care of it. The upbringing of a patriot citizen today is the key to a guaranteed future for every country.

### 2 Literature Review

Currently, there is a large number of studies devoted to the patriotic education of the younger generation. The solution of the problem of patriotic education of schoolchildren was carried out by researchers through the teaching of humanities, in the process of leisure activities and tourist and local history work, through familiarization with folk customs and traditions, etc.

According to V. A. Slastenin (2012), the most effective in solving the problem of patriotic education in a comprehensive school are system-activity, axiological and cultural approaches.

N. A. Ivanova (2016) in the article "Axiological guidelines for the formation of patriotism" notes that society now needs to rely on traditional values that give strength to the country: it is necessary to look for them in the thousand-year history of our country.

Here we can consider patriotism as a result of mastering the traditional values of one's people, which leads to the necessity to use a culturological approach based on the uniqueness and self-worth of each culture.

According to G. N. Mousse (2015), it would be appropriate to consider the issue of education of patriotism among schoolchildren from the point of view of a synergetic approach. This approach is associated with the recognition of the dual nature of education. On the one hand, the education of patriotism is connected with goal-setting and with the management of personal development, on the other hand, it is a self-organization of activities that ensure "nonviolent and voluntary inclusion of the individual in the process of becoming its subjectivity.

M. A. Abdulayeva (2015), by patriotic education means systematic, purposeful and coordinated activities of state bodies, public associations and organizations to form a high patriotic consciousness among young people, an exalted sense of loyalty to their Homeland.

According to I. A. Savinov (2018), patriotic education is impossible to imagine without active forms of work, game design, game elements.

M. S. Golub (2018) notes the importance of the process of patriotic education in preschool childhood, since "during this period, the formation of cultural and value orientations of the spiritual and moral basis of the child's personality takes place." For I. I. Burlakova (2015), it is a complex managed system designed to perform the functions of forming citizenship, patriotism and readiness for worthy service to the Homeland.

Researchers I. L. Nesterovich (2018) and I. K. Zueva (2020), in their works, reveal methods of forming civil-humanistic patriotism.

V. A. Vazleev (2016), P. A. Fedorov, (2017) and V. V. Pyzh (2017) come to the conclusion that the patriotic education of a modern cadet is a systematic and purposeful activity to form a high patriotic consciousness among pupils, a sense of loyalty to their country, readiness to fulfill civic duty and constitutional duties to protect the interests of the country.

Researchers R. N. Kaukina (2021) and A. V. Loginov (2021) in their article consider the problem of civil and patriotic education of the individual by the example of studying the charitable activities of Admiral F. F. Ushakov in the Mordovian Region.

Various aspects of patriotic education are considered in their works by researchers A. N. Gamajunova (2018), N. G. Spirenkova (2018), O. V. Kudashkina (2018), S. Golunov, A. Rapoport (2009), D. M. Omelchenko (2015).

The article also used foreign works devoted to the peculiarities of patriotism and patriotic education in the USA, Germany and China, by such authors as S. D. Broocfield (1991), J. S. Coleman (1988), G. Borger (2005), M. Adler (2015), E. Trelch (1995), Ch. Xiaohuan (2016).

Based on all of the above, it can be concluded that the problem of patriotic education is currently relevant and requires careful consideration, since underestimating patriotism as the most important component of public consciousness leads to a

weakening of the socio-economic, spiritual and cultural foundations of the development of society and the state.

### 3 Research Methodological Framework

The purpose of this article is to identify pedagogical conditions conducive to patriotic education of cadets based on the study of the historical personality of Admiral F. F. Ushakov.

The goal led to the solution of the following tasks:

1. to summarize pedagogical experience in patriotic education of cadet classes (Municipal Budgetary Educational Institution "Temnikovskaya Secondary school named after the Hero of the Soviet Union A. I. Semikov" Republic of Mordovia).
2. to identify the initial level of knowledge of cadets about the life and work of Admiral F. F. Ushakov.
3. to develop and experimentally test the system of work on patriotic education of cadet classes based on the study of the personality of Admiral F. F. Ushakov.

The following research methods were used in the work on the article: general scientific: comparison, generalization, abstraction, concretization, analogy; hermeneutic: textual analysis of pedagogical literature and normative legal documents.

The survey, observation, pedagogical experiment, study and generalization of pedagogical experience were chosen as empirical research methods.

The results of the study were obtained based on the results of monitoring Municipal Budgetary Educational Institution "Temnikovskaya Secondary school named after the Hero of the Soviet Union A. I. Semikov" Republic of Mordovia. 54 cadets of grades 6-A and 6-B took part in the monitoring.

The experiment was conducted in the period from September 2020 to May 2021 and included the ascertaining, forming and control stages. The questionnaire developed by the authors of the article and aimed at identifying the level of knowledge of cadets about the historical personality of F. F. Ushakov served as a working tool of the experiment.

### 4 Results and Discussion

To solve the first task, conversations were held with the school administration, with classroom teachers, with history teachers; the plans of educational work of cadet classes, the Charter of the Cadet movement (2020) were analyzed. In the course of this work, it was found that patriotic education activities are carried out systematically using various methods and means.

Since 2002, "Ushakov. Russia. Fleet" project has been implemented in the Republic of Mordovia, dedicated to anniversaries in the history of the Russian Navy, significant events in the combat naval activity of Admiral F. F. Ushakov. The activities of this project are included in the plans of educational institutions of Mordovia. Students of the schools of the republic take an active part in the "Ushakov gatherings", in the republican "Gathering of young Ushakovites", in the military sports game "Ushakovites - forward!", the expedition-hike "In my river is the beginning of the ocean".

In Municipal Budgetary Educational Institution "Temnikovskaya Secondary school named after the Hero of the Soviet Union A. I. Semikov" Republic of Mordovia in 2009, two cadet classes were opened, in which 54 people studied.

The main purpose of education in cadet classes is the intellectual, cultural, physical and moral development of cadets, their adaptation to life in the society, preparation for serving the Homeland in the civil and military fields, orientation to admission to Suvorov and Nakhimov colleges, secondary and higher educational institutions that train officers for the Russian Army and Navy, the FSB and the Ministry of Emergency Situations (The Charter of the Cadet Class..., 2020).

The authors of the article conducted a pedagogical experiment, which consisted of three stages: ascertaining, forming and control.

The purpose of the first (ascertaining) stage of the study was to identify the initial level of knowledge about the life and military exploits of Admiral F. F. Ushakov; about the role of the admiral in the system of patriotic values and public consciousness of the student respondents. To do this, we conducted a survey (questionnaire) of 54 students of grades 6 A and 6 B of Municipal Budgetary Educational Institution "Temnikovskaya Secondary school named after the Hero of the Soviet Union A. I. Semikov" Republic of Mordovia. The questionnaire consisted of 20 questions, which were aimed at identifying the level of knowledge of cadets about the life and famous naval battles of Admiral F. F. Ushakov, about his charitable activities in Temnikov after his retirement; about the awards of the Soviet state in honor of the merits of F. F. Ushakov; about films and books dedicated to the great naval commander; about the attitude to the great naval commander as a true hero and patriot of the Homeland.

Students were offered three possible answers. For the correct answer, the student received 1 point, for the wrong answer – 0 points. The results were calculated and the sum of points for the answers of each participant of the experiment was calculated (the maximum number of points was 20). The results obtained were converted into percentages, which determined the level of knowledge of the life and combat exploits of Admiral F. F. Ushakov:

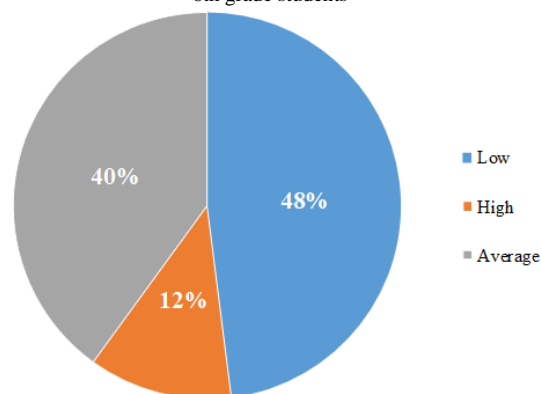
\*85-100% - high level: shows a high sense of patriotism, a high level of knowledge of the main dates of the life and combat path of the great naval commander, knowledge of his charitable activities; students consider the admiral a true hero from whom you can learn patriotism, courage, mercy;

\*50-84% - average level: the vector of patriotism is expressed implicitly, shows a sufficient level of knowledge of the life and activities of F. Ushakov, however, there are small gaps in knowledge, inaccuracies, mistakes; students consider the admiral a real hero, from whom you can learn courage, love for the Homeland;

\*0-49% - low level: the concept of patriotism has not been formed; shows ignorance of the main milestones in the life of the admiral's combat path, no interest in the personality of Admiral F. Ushakov.

As the survey showed, the majority of students have a low level of knowledge about the life and naval battles of Admiral F. F. Ushakov (53% of the total number of respondents), only 12% have a high level of knowledge and an average level of 35%. The data of the survey are presented in Figure 1.

Figure 1 The results of diagnostics of the initial level of knowledge about the life and work of Admiral F. F. Ushakov of 6th grade students



Source: compiled by the authors

Thus, conducting a survey of students in order to find out the level of knowledge about the life and combat path of the famous naval commander, we came to the conclusion that it is necessary to develop a program of additional education of cadets, which will contribute to the patriotic education of cadets and increase the level of knowledge about the personality of Admiral F. F. Ushakov.

The purpose of the second (formative) stage of the study was the development and implementation of an additional educational program "Admiral F. F. Ushakov: life and feats of arm". This program is aimed at the development of patriotic feelings of students; the formation of cadets' sustained interest in the life and feats of Fyodor Ushakov; encouraging cadets to self-education based on the image ("ideal hero", saint); the development of cadets' desire for joint creative and project activities.

The thematic plan of this program consists of three sections: "Introduction. The life and work of Admiral F. F. Ushakov", "The Glorious Victories of F. F. Ushakov", "Admiral Fyodor Ushakov in the history and culture of Mordovia". The final lesson includes the defence of research projects at a school conference.

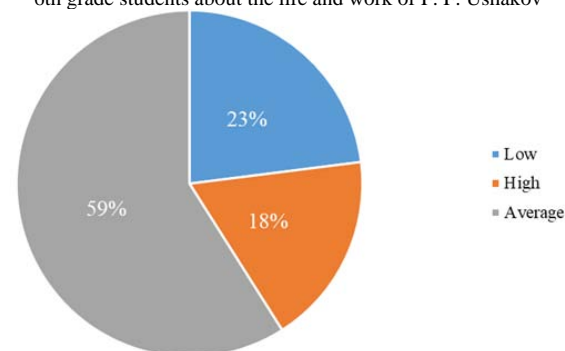
At the next stage of the formative experiment, an additional educational program "Admiral F. F. Ushakov: Life and Feats of Arm" was introduced into the educational process. As part of the experimental work with the cadets of the 6th grades, various events were held: information hours dedicated to memorable dates of Russia, laying flowers at the monument to Ushakov F. F. in the days of his victories (victory at the island of Corfu, Tendra, Kaliakria), The Day of Homeland Defender's Day, military sports games, meetings with veterans and active officers of the Armed Forces of the Russian Federation, students of higher military institutions, veterans and homefront workers of the Great Patriotic War, active participation in the celebration of the 20th anniversary of the canonization of F. F. Ushakov, planting trees at the monument to the Admiral, participation in planting an apple orchard on the site of his estate, participation in the campaign "St. George Ribbon" and "Victory Windows", etc.

The program presupposes research and project activities of students. As topics for the implementation of research projects, the results of which were presented at the school conference, reports emphasized personal qualities of Fyodor Ushakov. The following projects were defended with great interest at the school conference: "Innovator of naval combat", "Glorious victories of the invincible naval commander", "Admiral Fyodor Ushakov in the Mordovian Region", "A.V. Suvorov about Admiral F. F. Ushakov", "Sanaksar Monastery and its shrines".

The purpose of the third (control) stage of the study was to identify the dynamics of the development of the level of knowledge about the combat path and the main battles of Admiral F. F. Ushakov, after testing the program developed by us. Repeated diagnostics was carried out according to the same method as the original one. The students were asked to answer the questionnaire questions. The repeated survey showed that the number of students with a high level of knowledge increased by 8%, with an average level increased by 19%, with a low level decreased by 25%. The data of the repeated survey are presented in Figure 2.

Thus, in comparison with the results of the initial diagnosis, after the main stage of the study, the high level of knowledge about the life and work of Admiral F. Ushakov increased by 6%, the average level increased by 19%, and the low level decreased by 25% (see Table 3), thanks to which the effectiveness of the developed program was confirmed.

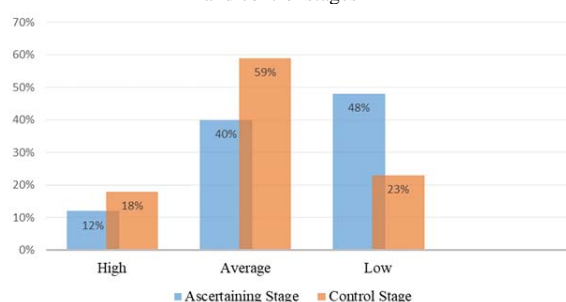
Figure 2 The results of repeated diagnostics of the knowledge of 6th grade students about the life and work of F. F. Ushakov



Source: compiled by the authors

After repeated diagnostics, we compared the level of knowledge about the life and work of Admiral F. Ushakov of the 6th grade cadets before and after the experiment. A comparative analysis of the results of the ascertaining and control stages of the questionnaire is presented in the table in Figure 3.

Figure 3 Comparative analysis of the results of the ascertaining and control stages



Source: compiled by the authors

The results obtained by us are consistent with the data of G. Ya. Grevtseva (2019) that the most effective means and forms of civic and patriotic education of students are the following: state symbols, traditions, excursions and trips to places of military glory; meetings with war and labour veterans. That is why an extensive set of military-patriotic activities was introduced into the system of educational work of cadet classes, part of which was the program for cadets presented by the authors of the article, tested at the Temnikovskaya school.

## 5 Conclusion

After carrying out all the stages of the study, we came to the following results. With the general positive attitude of the younger generation to the personality of Admiral Ushakov, a rather low level of knowledge about his life and work was revealed. In part, this gap was eliminated by an additional program developed by the authors of the article, tested in these cadet classes and confirmed its effectiveness.

The approbation of the author's supplementary program has shown that in order to achieve the effectiveness of patriotic education, a comprehensive application of various methods and means is necessary. In this case, the authors of the article proceeded from the fact that the variety of events and the information saturation of the presented additional program, figuratively speaking, "expands the horizons" of students, contributes to the development of the erudition of cadets, which also strengthens the patriotic potential of this creative work.

In this regard, an additional educational program on patriotic education of cadets on the example of studying the personality of Admiral F. F. Ushakov contributes to solving urgent problems of patriotic education of students of cadet classes.



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**Primary Paper Section: A****Secondary Paper Section: AM, AN**

## ADDITIONAL PROFESSIONAL RETRAINING OF LAWYERS AT A PEDAGOGICAL UNIVERSITY

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Abstract: Today, a comprehensive school has an acute problem about the demand for a teacher who has legal literacy, understands the social significance of law, the importance of law enforcement in the state, who is able to organize legal education and training. The practice of training future teachers shows that graduates of pedagogical universities have gaps in knowledge of the theory of law, legal education of students, do not have the skills of practical application of legal knowledge, professional legal skills and sufficient level of legal literacy. The authors focus on the issue of the necessity to provide additional professional training for law students at a pedagogical university. As an option for use, the experience of implementing an additional professional retraining program "Legal Education" is offered.

Keywords: educational environment, law, legal education, legal literacy, professional activity, professional retraining.

### 1 Introduction

The formation of a civil society is unthinkable without ensuring the rights and freedoms of the individual in the country. Legal literacy of the population is a necessary condition for the existence of the rule of law. In this regard, universities face the task of training specialists capable of providing legal education to young people at a high professional level as one of the priorities. Modern society needs a socially active, creative teacher who has legal literacy, understands the social value of the law, has a positive attitude to the rights of the child and the person, observes the legal norms of the state.

In Russia, legal education is currently in the spotlight of the pedagogical community. A distinctive feature of Russian legal education is the diversity of approaches to its content. Its essence lies in the fact that the content of all school subjects forms a human citizen. Legal education in this sense is an education aimed at the formation of a person - a citizen, a person who has legal qualities.

Teaching law forms an integral complex of general academic skills and abilities that enables students to master important ways of activity. The study of law is aimed at forming the foundations of legal literacy, ideas and attitudes based on democratic legal values, the ability and readiness for conscious and responsible action in the field of relations regulated by law, independent legal decision-making related to the protection of rights, freedoms and laws of the interests of the individual necessary for the effective performance of basic social roles in society. The additional professional retraining program "Legal Education" is aimed at the formation of the necessary competencies for the successful implementation of professional activities in the field of general education as a law teacher.

In general, the need for such work is dictated by the current state of legal education, which has become an important factor in the development of personality, the formation of civil society and a democratic rule of law in modern Russia. Thus, the relevance of the topic of this article is largely due to the fact that for the Russian Federation, the formation of the necessary competencies for the successful implementation of professional activities in the field of general education is an important task.

### 2 Literature Review

The problem of improving legal education in the jurisprudential literature was put forward in the late 50s of our century. In the following years, attention to this problem increased. There are scientific studies in this field, which are presented by such authors as M.M. Galimov, O.F. Muramets (1983), I.F. Ryabko (1973) and others.

Such prominent theorists of Soviet and Russian law as S.S. Alekseev (1999), V.N. Kudryavtsev (2016), A.S. Pigolkin (1976) and others contributed to the development of general problems of legal education.

Recently, there has been an increasing interest in the problems of the legal education process, the teaching of legal disciplines in non-legal higher educational institutions, sociological research is being conducted on legal education, legal consciousness, legal culture.

The problem of the formation of the legal culture of the future teacher, the main component of which is legal training, is considered in the works of E.L. Bolotova (2006a, 2006b, 2012), P.A. Musinov (2000), L.N. Nikolaeva (2005), V.N. Tsyganash (2000), etc. The studies of G.P. Davydov (2000), V.P. Ponomareva (1991), and others indicate that the legal education of students largely depends on the legal competence of the teacher.

The issues of improving the professional training of future teachers are considered in sufficient detail in the psychological and pedagogical literature. In particular, O.A. Abdullina (1990), A.I. Piskunov (1995), etc. in their research, highlight the theoretical and methodological aspects of teacher training, reveal the goals, content and structure of higher pedagogical education, show ways, means and forms of training that contribute to the formation of a professional teacher.

Legal training as part of the professional training of a future teacher was also considered in their works by S. V. Bolonina (2000), E. A. Pevtsova (2003), V. P. Ponomareva (1991), etc. Therefore, the works of M. A. Ageeva (2009), L. N. Bogolyubov (2013), M. R. Moskalenko (2016), E. N. Chekushkina (Chekushkina et al., 2020), M. V. Alaeva and colleagues (2020) and others are of great importance for the analysis of sources on the topic of research, where the problems of professional training of specialists, the formation of their professional qualities are discussed. Analysis of the works of E. L. Bolotova (2006a, 2006b, 2012), A. R. Zhusupov and A. A. Khasenova (2017), A.S. Kindyashova and N. R. Volkova (2017), devoted to various aspects of legal training of teaching staff, shows that there is an objective necessity to find ways to intensify it.

### 3 Research Methodological Framework

The purpose of the article is a theoretical justification and practical verification of the conditions for effective legal training of students of a pedagogical university. In accordance with the goal, the following research objectives were identified: to reveal the importance of legal education for bachelor's degree training; to analyze the state of legal training of pedagogical university students; to specify the content and methods of legal training of pedagogical university students within the framework of an additional professional retraining program "Legal Education".

The methodological basis of the research is the anthropological, ontological, epistemological, social, axiological principles of modern philosophy of education in determining the essence of scientific knowledge of legal training of teachers; historical and logical methods of theoretical knowledge. The historical analysis of the problem made it possible to ensure the selection of descriptions of various pedagogical factors of the formation of the problem of legal training of teaching staff, and the logical analysis of the collected material made it possible to structure and build the components of legal training into a certain system.

#### 4 Results and Discussion

The current stage of higher education development is characterized by an increase in qualification requirements for future specialists, which can be fully said about the training of future teachers. The general professional section of education is focused on the formation of theoretical knowledge and practical skills in the process of mastering humanitarian and socio-economic disciplines. The main requirements for the level of training of a specialist include knowledge of legal and moral and ethical norms in the field of professional activity. The importance of studying law in educational institutions of pedagogical profile lies precisely in the fact that it contributes to the solution of state, public and, in fact, educational tasks, such as: building a rule-of-law state; the formation of civil society; education of a responsible citizen and patriot. It is also intended to serve for the purposes of cultural development, assimilation of civil rights and duties; determination of their place and role in society.

The teaching of legal disciplines for students of pedagogical specialties has its own specifics, primarily related to the peculiarities of their professional training for work in a secondary school.

The analysis of the available pedagogical experience confirms that the school course of social studies, enabling to get some fragmentary knowledge about the basic legal institutions of society, the rights and duties of a citizen, does not provide sufficient knowledge about the basics of law, the formation of skills of legal behavior and culture of secondary schools' leavers. They do not possess not only a certain amount of legal knowledge, but also formed critical thinking, the ability to act in real social conditions, build their own life trajectory, have experience of independent activity and personal responsibility, including in the legal field. Therefore, at present, the importance of legal education is increased manifold. A modern specialist needs detailed knowledge about legal norms, as well as about the mechanism of protection of legal interests. In this regard, it is extremely importance to improve the legal training and legal culture of all citizens of our society (state and municipal employees, managers, managers, including in the education system, and others), who solve legal issues every day, one way or another, without having any legal training.

The purpose of legal education and training of future specialists in a pedagogical educational institution is not only to obtain certain amounts of knowledge about law, but also to form an active life position in the legal sphere, in the field of education and in everyday life. The competent participation of specialists and managers of the education system in solving educational policy issues, managing educational institutions, resolving economic and personnel disputes, ensuring clear and well-coordinated work of all parts of the system, preventing violations of laws and infringement of the rights of students largely depends on how strong their legal knowledge is. Legal training of specialists should be considered as a necessary condition for improving their professional qualifications.

As practice shows, today, law and its humanistic principles do not occupy a proper place in the spiritual imperative of the individual, in the motivations of everyday behavior of people. Legal infantilism, nihilism and other forms of legal consciousness deformation are manifested in the behavior of modern youth. Negative phenomena are also observed in the spiritual and moral sphere. This creates certain difficulties in the formation of a competent, civilized personality of a future specialist of a legal educator. The behavior of a teacher in pedagogical activity, his system of value orientations undoubtedly has a significant impact on the system of value orientations of the individual-personal manifestation of the trainees themselves. In this regard, the formation of legal awareness of future teachers is of key importance for their further professional activities. Today, it is important to train law teachers who are called upon to implement not only the teaching component of law, but also the educational one. The essential importance here is played by the legal competence of the

teacher, the level of his legal literacy, achievable as a result of special legal training. The content of this training is reflected in the standards. For example, in the general requirements for graduates, a mandatory element of teacher training is defined by their knowledge of such regulatory legal documents, the laws of the Russian Federation, including The Law of the Russian Federation "On Education" (2012), the Convention on the Rights of the Child (1989), documents of the Government of the Russian Federation and educational authorities on education, Sanitary norms and Rules, Safety and Fire Protection Regulations. At the same time, practice shows that such a minimum level of requirements does not contribute to the formation of a future teacher's need to improve legal competence. In this context, professional retraining programs are of particular importance, one of which is the program "Legal Education" successfully implemented at Mordovian State Pedagogical University named after M. E. Evseev.

The program involves the formation of the necessary competencies for the successful implementation of professional activities in the field of general education as a law teacher.

The content of the program includes the necessary theoretical material and methodological foundations for the formation of readiness and ability to organize regular and extracurricular work of students in law.

The purpose of this program is the formation of students' professional competencies to perform professional activities in the field of general education as a law teacher.

Students who have mastered the program, in accordance with the types of professional activities that the program is focused on, are ready to solve the following professional tasks:

- implementation of training and education in the field of general education in accordance with the requirements of educational standards;
- the use of technologies that correspond to the age characteristics of students and reflect the specifics of the subject area;
- provision of educational activities taking into account the special educational needs of students;
- ensuring the protection of life and health of students during the educational process;
- designing the content of educational programs and modern pedagogical technologies, taking into account the peculiarities of the educational process, the tasks of education and personal development through the subjects taught, including the online format.

The program is aimed at the formation of professional competencies corresponding to the types of professional activity of the professional standard "Teacher (pedagogical activity in the field of preschool, primary general, basic general, secondary general education) (educator, teacher)".

The achievement of the set goal and objectives is reached by the implementation of a number of competencies. Educational activity (hereinafter referred to as EA-1). General pedagogical function.

Training Professional competence (hereinafter referred to as PC-1.1). Development and implementation of programs of academic disciplines within the framework of the basic general education program. PC-1.2 Implementation of professional activity in accordance with the requirements of federal state educational standards (2015). PC-1.3 Planning and conducting training sessions. PC-1.4 Systematic analysis of the effectiveness of training sessions and approaches to learning. PC-1.5 Organization, monitoring and evaluation of educational achievements, current and final results of mastering the basic educational program by students.

EA-2. Educational activities. PC-2.1 Implementation of modern, including interactive, forms and methods of educational work in the classroom and in extracurricular activities.

EA-3. Developing activities. PC-3.1 Mastering and applying psychological and pedagogical technologies (including inclusive ones) necessary for targeted work with various contingents of students: gifted children, socially vulnerable children, children in difficult life situations, migrant children, orphans, children with special educational needs, children with disabilities, children with behavioral deviations, children with addiction. PC-3.2 The development of students' cognitive activity, independence, initiative, creative abilities, the formation of a civic position, the ability to work and live in the modern world, the formation of students' culture of a healthy and safe lifestyle. EA - 4. Pedagogical activity for the implementation of programs of basic and secondary general education. PC-4.1 Determination based on the analysis of the student's educational activity of optimal (in a particular subject educational context) methods of its training and development. PC-4.2 Determination together with the student, his parents (legal representatives), other participants in the educational process (teacher-psychologist, teacher-defectologist, methodologist, etc.) of the zone of his immediate development, development and implementation (if necessary) of an individual educational route and an individual program for the development of students. PC-4.3 Planning of a specialized educational process for a group, class and/or individual contingents of students with outstanding abilities and/or special educational needs based on existing standard programs and own developments, taking into account the specifics of the composition of students, clarification and modification of planning.

This program consists of the following modules "Methods of teaching law in the context of the implementation of the Federal State Educational Standard", "Actual problems of the theory of state and law", "Basic issues of constitutional law of the Russian Federation", "Actual problems of modern civil law", "Actual problems of administrative law", "Actual problems of criminal law" designed to comprehensively disclose the content of the main branches of law and prepare law teachers.

The implementation of this program involves various forms of students' work from traditional teaching methods to interactive (using ICT technologies). The main concept that reveals the meaning of interactive learning technology is "interaction". The term "interaction" is understood as direct interpersonal communication, the most important feature of which is the student's ability to imagine how a communication partner or group perceives him, "accept the role of another", and accordingly analyze the situation and develop their own actions. Pedagogical interaction is an exchange of activities between a teacher and students, where the activity of one determines the activity of others.

It is important to note that the final exam includes a number of tasks from theoretical to practical, aimed at preparing practical teachers who are able to conduct not only teaching activities, but also educational and developmental ones. A special place in this exam is played by a group of practice-oriented questions, the main purpose of which is the practical implementation of the training of law teachers. For example, in the task "To present a fragment of the lesson of studying new material on law on the topic: "Offense and legal responsibility", for the 10th grade of the profile level" it is necessary to use a set of sources allowed on the exam (the Criminal Code of the Russian Federation) to simulate a law lesson.

## 5 Conclusion

The implementation of the professional retraining program "Legal Education" revealed some features of the training of law teachers.

A special type of information technology is computer reference legal systems, which occupy an important place in the teaching of legal disciplines. It is difficult for a layman to understand the array of regulations, especially given the systemic nature of law, when ignorance of the nuances of the legal mechanism for regulating public relations can lead to a misunderstanding of the law.

The Department of Legal Disciplines of Mordovian State Pedagogical University named after M.E. Evseviev has been cooperating with the "Garant" firm for more than ten years and widely uses the legal reference system of the same name in the educational process. In addition to the "Garant" system, the library of the Mordovian State Pedagogical University named after M.E. Evseviev provides access to the "Consultant" legal system.

For graduates of Mordovian State Pedagogical University named after M.E. Evseviev, knowledge of such systems is a mandatory component of professional training.

Choosing the right model of legal education enables to solve a number of educational problems: it forms the skill and ability of students to dialogue, the ability to exercise their rights, practically apply the knowledge gained, search for the necessary legal information, draw up basic documents (contracts, appeals), build a step-by-step "algorithm" of legal actions in a real situation.

Currently, there is a shortage of teachers of law, specialists in the field of training "Jurisprudence" are not able to fill this gap for various reasons. The resources of the "Legal Education" program provide opportunities for high-quality training of law teachers with educational competencies and the competencies of a legal specialist.

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**Primary Paper Section: A**

**Secondary Paper Section: AG, AM**

## BASIC DEPARTMENT OF THE PEDAGOGICAL UNIVERSITY IN THE CONDITIONS OF RESEARCH-ORIENTED TRAINING

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**Abstract:** The article presents the results of a study of the activities of the basic departments of the pedagogical university at the sites of educational organizations. The possibility of a basic department for the implementation of research-oriented learning and improving the quality of practical training of students is substantiated. The authors have revealed the mechanism of practical training in the conditions of the basic department, which consists in the consistent solution of a set of methodological tasks. The results of the study show that the organization of research-oriented learning based on contextual activity and research approaches in the conditions of the basic department contributes to the strengthening of interdisciplinary connections, integration of theoretical knowledge and pedagogical practice.

**Keywords:** basic department, research-oriented training, research approach, research competence, context-activity approach, practice-oriented training, pedagogical university, educational organization.

### 1 Introduction

The relevance of the research is due to the steady tendency to strengthen the role of the research component in the structure of professional training of a student of a pedagogical university. The research competence of a teacher, on the one hand, makes it possible to adapt more successfully to a changing professional environment, and on the other, to work more effectively in the mode of innovative development of educational practice. This makes it necessary to design an educational environment at the university that would facilitate the active and motivated inclusion of students in practice-oriented research work. The authors of this study rely on the theoretical and methodological position that the training of students of a pedagogical university who are able to effectively solve professional problems in the conditions of dynamic and profound changes in educational practice can be carried out on the basis of the synergy of two approaches – context-activity and research ones.

The context-activity approach involves the use of professionally contextual situations in the educational process that ensure the student's immersion in the actual problems of educational practice, the formation of professionally significant personal qualities and competencies. This approach makes it possible to strengthen practice-oriented training, which seems especially important today in the light of the existing contradictions between the dynamic processes of technological and methodological renewal of school education, on the one hand, and a certain desynchronization of the content of university education and modernization processes in school, insufficient readiness of a graduate of a pedagogical university for the practical application of acquired knowledge, mastering new means and methods of pedagogical activity, their flexible use in changing conditions, on the other.

One of the effective tools for improving the quality of future teacher training and achieving high educational results is the implementation of research-oriented training at the university within the framework of a research approach to professional training. A research student takes a more active, author's position in the educational process. The inclusion of students in professional contextual research activities within the framework of classroom and extracurricular work, various types of pedagogical practices has significant opportunities for the formation of qualities that ensure the competitiveness of a

university graduate in a professional environment, such as research skills, the ability to work with information sources, professional reflection, self-organization and independence, developed divergent thinking abilities, i.e. the ability to see various solutions to the problem and choose the optimal ones, etc. The teacher-researcher is better prepared for professional activity in changing conditions, for pedagogical creativity and innovation, for continuous education and self-education.

It is of scientific interest to search for effective organizational forms and pedagogical technologies that allow integrating the possibilities of contextual activity and research approaches in the process of university teacher training. To achieve this purpose, the research team of Mordovian State Pedagogical University named after M. E. Evseviev is implementing a project to create basic departments of the university in educational organizations of the region in a search and experimental mode.

### 2 Literature Review

At present, the necessary theoretical and methodological basis for practice-oriented and research-based education at the university has been accumulated. The development of the problem of practice-oriented learning is associated with the strengthening of those aspects of the content of education and the introduction of such pedagogical technologies that are aimed at the functional component of the teacher's professional activity, the formation of applied skills and practical experience of students through their contextual immersion in educational and professional activities (Bermous, 2020; Verbitsky, 2015; Bondarenko & Latkin, 2012; Schneuwyly & Vollmer, 2018; Tatur, 2004; Brockbank & McGill, 1998; Mayer, 2016; Moira, 2007; Shukshina & Movsesyan, 2018; Shukshina et al., 2018; Zamkin et al., 2014). The implementation of a practice-oriented campaign involves the consistent and progressive formation of professional competence of a pedagogical university student from basic professional actions to creative activity in search mode (Petrova, 2010; Brunnet & Portugal, 2016; Zamkin et al., 2018; Buyanova et al., 2019; Kuzmina & Rean, 1993).

The interrelation of research activity in the process of professional training at the university and the key characteristics of the university graduate's readiness to study, professional reflection and innovative transformation of pedagogical practice is an urgent and interdisciplinary problem. The inclusion of students in practice-oriented research activities in the learning process ensures the integrity and interrelation of their theoretical knowledge and professional skills (Lijnse, 2004; DeMilo, 2011; Ligozat & Almqvist, 2018). Thus, one of the key factors of the effectiveness of practice-oriented teaching at a pedagogical university is the formation of professional experience of students in the process of their research immersion in a professional environment (Mamontova et al., 2016; Biggs & Tang, 2011; Yorke, 2003; Onushkin et al., 1987). As the analysis of scientific literature and educational practice shows, such an approach in higher education is possible when creating basic departments at a pedagogical university (Orkibi, 2012; Afonina & Shukshina, 2020; Shukshina & Movsesyan, 2018; Shukshina et al., 2018). The basic departments enable students to organize the development of an educational program in real conditions in the process of performing practical tasks. At the same time, practical activities in the mastered training profile are carried out with the participation of professionals in this activity (Andreev, 2005; Clanche & Sarrazy, 2006; Mayer, 2017).

### 3 Research Methodological Framework

The purpose of the article is to substantiate the capabilities of the basic department of the pedagogical university for the implementation of research-oriented training and improving the quality of practical training of students of a pedagogical university. Research objectives: to reveal the peculiarities of the activities of basic departments; to consider the possibilities of

basic departments in the implementation of research-oriented learning in the process of practical training of students. The research was carried out using theoretical methods (analysis of psychological and pedagogical literature, synthesis, systematization of material on the research problem), as well as the method of generalization of pedagogical experience. The methodological guidelines of the study were contextual activity and research approaches. The study was conducted during 2020-2021. 26 scientists and 115 students of 8 faculties of Mordovian State Pedagogical University named after M. E. Evseev (physics and mathematics, natural technology, philology, history and law, pedagogical and art education, foreign languages, psychology and defectology, physical culture), 65 teaching staff (administrative and managerial staff, subject teachers, classroom teachers) from 12 educational organizations of general secondary educational institutions of the Republic of Mordovia (Municipal Budgetary Institution "Secondary school with in-depth study of individual subjects No. 24", Municipal Budgetary Institution "Gymnasium No. 23", Municipal Budgetary Institution "Secondary school with in-depth study of individual subjects No. 38", Municipal Budgetary Institution "Secondary school No. 40", Municipal Budgetary Institution "Lyceum No. 26", Municipal Budgetary Institution "Lyceum No. 26", Municipal Budgetary Institution "Education Center "Tavla" - Secondary school No. 17", Municipal Budgetary Institution "Secondary school with in-depth study of individual subjects No. 24", Municipal Budgetary Institution "Gymnasium No. 20 named after the Hero of the Soviet Union V. B. Mironov", Municipal Budgetary Institution "Secondary school No. 8", Municipal Budgetary Institution "Secondary School No. 5", Municipal Autonomous Preschool Educational Institution "Center of child development-kindergarten No. 2", Public Educational Institution "Saransk comprehensive school for children with disabilities") took part in the research.

#### 4 Results and Discussion

At the first stage of work at Mordovian State Pedagogical University named after M. E. Evseev, a model of the basic department of the university at a general education organization was developed, as well as a local regulatory framework regulating their activities (regulations on the basic department, staff schedule, job descriptions of employees, activity plans, reporting forms, a page was created on the university's website covering the activities of the basic departments). At the second stage of work, in order to strengthen the practical orientation of pedagogical education, the development of integration ties between the pedagogical university and the regional education system, 12 basic departments of the university were created in educational organizations of the Saransk city district: the Department of Innovative Methods of Teaching Foreign Languages (Municipal Budgetary Institution "Secondary School with in-depth study of individual subjects No. 24"); the Department of Social Science and Legal Education (Municipal Budgetary Institution "Gymnasium No. 23"); Department of Historical Education (Municipal Budgetary Institution "Secondary school with in-depth study of individual subjects No. 38"); Department of Russian Language and Literature (Municipal Budgetary Institution "Secondary School No. 40"); Department of Native Language and National Culture (Municipal Budgetary Institution "Lyceum No. 26"); Department of Natural Science Education (Municipal Budgetary Institution "Center of Education "Tavla" - Secondary School No. 17"); Department of Methods of Teaching Physical Culture and Life Safety (Municipal Budgetary Institution "Secondary School with in-depth study of individual subjects No. 24"); Department of Pedagogical Technologies (Municipal Budgetary Institution "Gymnasium No. 20 named after the Hero of the Soviet Union V. B. Mironov"); Department of Physical Education (Municipal Budgetary Institution "Secondary school No. 8"); Department of Mathematical Education (Municipal Budgetary Institution "Secondary School No. 5"); Department of Innovative Practices of Preschool Education (Municipal Autonomous Preschool Educational Institution "Child development center-kindergarten No. 2"); Department of Special and Inclusive Education (Public

Educational Institution "Saransk comprehensive school for children with disabilities").

The basic department is a structural subdivision of the university, created jointly with a general education organization and functioning on its site. The analysis of the activities of the basic departments in the experimental mode during 2020-2021 revealed the following possibilities of this form of organization of the scientific and educational process for the pedagogical university:

- strengthening the practical orientation of the training of the future teacher based on the orientation of the content of education on the functional component of the professional activity of the teacher, attracting highly qualified practitioners to the educational process;
- improving the quality of students' training by improving the technologies of the educational process, ensuring the cyclical nature of educational, cognitive and practical activities, the unity and integrity of the process of mastering theoretical knowledge through their practical application in typical and non-standard professional situations;
- development, testing and promotion of scientific and educational products and services, both for students, their parents, and teaching staff, based on the analysis of requests and needs of real practice and the market of educational services;
- early professionalization of students and subsequent employment of graduates of the pedagogical university;
- professional orientation of high school students to psychological and pedagogical specialties.

The organization of practical training at the site of the basic department was carried out in the conditions of research-oriented training. The implementation of practice-oriented research cases by students, the content of which was constructed on the basis of the contextual principle, took place both within the framework of tasks received during the study of the main and elective disciplines of the university educational program, various types of practices (pedagogical, research, etc.), and in the process of extracurricular research work of student research groups. Thanks to this, the connection between research work, the educational process at the university and future professional and pedagogical activities was ensured. The subjects of educational interaction were university teachers of the basic department, teaching staff of the educational organization, students. The educational organization represented the basis for the experimental part of students' scientific research. The result of such research is scientific and methodological manuals aimed at improving the forms, technologies, techniques and methods of teaching and educating schoolchildren. Effective, as practice has shown, is the creation of research teams with the involvement of young scientists (students, postgraduates, undergraduates and teachers) for the implementation of joint research projects of the basic department staff and practice-teachers.

In the process of practice-oriented research, the student gained the skill and experience of substantiating, verifying and evaluating the effectiveness of scientific and practical developments, their relevance and implementation potential for the transformation and improvement of practice. Approbation and examination of research results was carried out within the framework of scientific and practical seminars, conferences, master classes, project scientific schools for students.

The mechanism of practical training through research-oriented training in the conditions of the basic department requires solving the following methodological tasks: decomposition of educational goals, step-by-step design of ways to achieve specified educational results; development and implementation of practice-oriented and flexible educational programs with modular organization and providing students with the opportunity to master them according to individual educational trajectories; development and implementation of training courses of the basic and variable parts of the educational program based on practice-oriented content, forms, technologies and teaching

methods; development of organizational and managerial mechanisms, regulatory, resource and software-methodological support for various types of students' practices (integrated, dispersed and long-term), organized at the sites of basic departments; providing conditions for the development of theoretical knowledge through their practical application in educational-professional and professional situations; formation of applied research competencies, experience in research, search and experimental activities; introduction of a system for diagnosing educational achievements, an independent system for assessing the quality of education, including with the involvement of employers and socio-professional organizations.

It should be noted that the students who participated in the study and were trained in educational organizations where the basic departments function demonstrated the ability to a deeper and holistic analysis of pedagogical phenomena and facts, current problems in educational practice and the development of optimal solutions in a real pedagogical situation. It is important to form students' value attitude to the phenomena and objects of pedagogical reality. We believe this is due to the fact that research activities in the conditions of real educational practice include, to one degree or another, an evaluative component. Evaluation is implicitly inherent in various stages of solving contextual research problems, in particular, in a situation requiring the correlation of a pedagogical phenomenon recorded in practice, a fact with some theoretical provisions, norms, standards. At the same time, the act of correlation is not a mechanical overlay, but is a process of problematization in the mode of dialogue with the supervisor, with different points of view and approaches presented in the scientific literature. The evaluative and reflexive experience acquired in this case serves as a kind of "prism" through which a value attitude to pedagogical reality and future pedagogical activity is formed.

Thus, the practical training implemented by the basic department in the process of research-oriented training of pedagogical university students contributes to changes that characterize the increase in the level of formation of their professional competence.

## 5 Conclusion

The results of the study showed that the basic department is a completely successful form of practical training of a teacher-researcher in the conditions of research-oriented education at a university. To ensure the effective operation of the basic departments, it is necessary to develop an appropriate regulatory framework, form a staff of university teachers and teaching staff of general education organizations, determine the content of students' research activities through the development of practice-oriented research cases and assignments within a separate academic discipline or several academic disciplines and modules of the educational program, various types of practices, as well as extracurricular research work of students. Such an organization of the scientific and educational process at the university has significant didactic and developmental opportunities in expanding and strengthening interdisciplinary ties, contributes to the problematization and dialogization of the content and process of pedagogical education, the establishment of links between research and educational activities, universal, general professional and professional competencies, promotes orientation in modern problems of educational practice, readiness to use research skills in solving educational, professional and professional tasks.

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**Primary Paper Section:** A

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## FUNCTIONAL AND TECHNOLOGICAL PROPERTIES OF THE SIMULATOR DESIGN OPTIMALLY SUITABLE FOR TRAINING THE HANDS OF SAMBO WRESTLERS AND JUDOISTS

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**Abstract:** The modern training process involves the use of various types of simulators. At the same time, the most effective are those simulators that allow you to create increased physical activity by simulating the real movements of an athlete, taking into account their trajectory and amplitude. In such types of martial arts as wrestling "sambo" and "judo" fights are conducted with the capture of the opponent's jackets, which requires strong muscles responsible for the work of the hands. The aim of the work is to create such a design of a wrist expander that would provide effective training of the hands of a "sambo wrestler", "judoist", taking into account the specifics of the movements performed by him with his hands during combats.

**Keywords:** wrist expander, simulator, sambo, judo, wrestling.

### 1 Introduction

The success of an athlete's performance in any sport is determined by his physical fitness, skills and abilities to perform certain technical actions.

N. A. Kislova (2017) notes that all people have different hands in shape and size. By the appearance of the hands, it is impossible to assume who will have a stronger hand and who will have a weaker one. The true strength of the hand does not depend on the size of the hand and the weight of a person, but on the training of the muscles and tendons of the forearm and on how well the strength in the ligaments of the hand and fingers is developed.

To improve the physical training of athletes, including increasing the strength of the hand, various types of simulators are widely used. Currently, there is a large variety of them, providing training for various muscle groups.

Among many types of simulators, a separate group stands out, aimed at strengthening the muscles of the hands and forearms of athletes. At the same time, the choice of a particular design is determined by the loads that the athlete experiences during training sessions. Examples of such loads can be the following cases:

- it is required to ensure the retention of a sports equipment clamped in the hand, for example, when performing an exercise consisting in spreading the arms to the sides with dumbbells clamped in them or when "pulling" a barbell;
- it is necessary to overcome great dynamic efforts, for example, in lawn tennis, striking a ball moving at high speed in the opposite direction with a racket in your hand;
- it is necessary to overcome static loads, for example, during push-ups, when the exercise is performed in a stand with support not on the palm, but on the fingers;
- it is required to strike with the hand with the fingers spread out on the ball, as for example, in volleyball;
- it is required to bend the wrist of the hand, while overcoming resistance from the opponent, such as in arm wrestling;
- and other situations.

Such a variety of training efforts led to the development of a large number of different specialized simulators for various muscle groups, including wrist expanders.

As A. O. Tsyganok (2020) notes the success of performing a particular technical action during a combat is determined by the interrelation of physiological processes occurring in the body due to a specific physical activity. At the same time, the higher the consistency of these processes, the lower the energy consumption and the greater the efficiency of the technical action carried out by the athlete. It is also noted in this work that the level of development of coordination and physical qualities

of an athlete as one of the most important factors affecting the accuracy of the execution of a technical action is largely determined by the spatial, temporal and power parameters of this action.

The peculiarity of such sports as "sambo" and "judo" is that many technical actions are associated with the necessity to bring the opponent out of balance by grabbing the opponent's jacket with one hand by the sleeve and the other by its lapel. At the same time, the athlete with one hand in which the sleeve of the opponent's jacket is captured makes a pulling force, and with the other hand with the captured lapel of the opponent's jacket, takes him out of balance, giving the desired trajectory of movement by twisting the lapel of the opponent's jacket on his fist and creating traction in the right direction.

Thus, for effective training of "sambo wrestlers" and "judoists" it is necessary to use simulators that provide training of the hands. At the same time, the fingers and the hand of one hand must ensure the capture of the opponent's jacket and its reliable retention in the grip, overcoming the resistance aimed at pulling the jacket out of the grip and creating a longitudinal thrust to shift the center of gravity of the opponent. The hand of the other hand must ensure the capture of the lapel of the opponent's jacket and its winding on the fist by turning the hand in the wrist, overcoming resistance from the opponent and at the same time providing a pulling force aimed at changing the center of gravity of the opponent with the hand with the lapel of the opponent's jacket wound on the wrist.

Based on the peculiarity of the technical actions of "sambo wrestlers" and "judoists" in the training process, it is required to use a wrist expander of such a design that would ensure the creation of loads close to the real situation when the hands experience different loads. One hand ensures the retention of the opponent's jacket clamped in her fingers, overcoming the effort to pull the jacket out of the grip, and the other makes a rotational movement in the wrist with the lapel of the opponent's jacket clamped in her fingers, overcoming the resistance to its rotation.

As the sports practice of monitoring the development of martial artists, including sambo wrestlers and judoists, shows, athletes are primarily required to improve speed and strength qualities, strength and functional endurance. Therefore, it is necessary to search for new methods and improve the technical means used in the preparation of athletes, which are aimed at the development of these physical qualities of athletes (Chevychev, 2013).

Due to a wide variety of simulators aimed at training the hands of athletes, taking into account specific power loads, the search for their optimal designs for specific conditions of the training process seems to be an urgent task. All the above-stated indicates the relevance of the topic of this article.

### 2 Literature Review

During the study of scientific and technical information regarding the designs of wrist expanders and the conditions of their use, information was collected that made it possible to classify known designs and establish the technical level of these devices and their functionality. Information was also studied regarding the peculiarities of the training of athletes of "sambo wrestlers" and "judoists", taking into account the peculiarities of their performance of technical actions during duels.

Zh. K. Kholodov and V. S. Kuznetsov (2003) note that the athlete's strength abilities begin to manifest when performing exercises with extreme (or near-limit) weights for the athlete. Such weights aimed at training certain muscle groups in the training process can be created by using specialized simulators.

At the same time, the improvement of strength abilities can be aimed at the development of maximum strength, the general

strengthening of a certain group of muscles, the formation of muscle relief (Shustin, 1975).

The training process of a wrestler consists of training both on the carpet and off the carpet. On the carpet, athletes practice techniques in general, and outside the carpet, parts of the techniques: approaches and preparation for throws, as well as grapples, strength and functional training.

According to the classification given by R. M. Baymukhametov and V. I. Petrova (2011), simulators are divided into weight simulators, work with which involve the movement of loads, and is aimed at strengthening general physical fitness and positional - specific devices that enable to take a certain body position from which movements are performed by an athlete. The use of positional simulators enables to strengthen those specific muscle groups that are involved in carrying out a certain technical action by an athlete.

Grip training can be trained using specialized simulators called expanders. They can be classified by design into the following groups:

- using rubber elastic elements;
- using spring elastic elements;
- gyroscopic;
- with adjustable force;
- with constant (not adjustable) force;
- installed on a portable or stationary platform;
- manual.

V. M. Zatsiorsky (1976) notes that the use of simulators with variable load resistance, in contrast to simulators with a constant load, enables to create a given amount of load during the exercise, providing such a shift in the emphasis of the manifestation of strength and speed of muscle contraction, which most corresponds to the successful solution of the training tasks.

Yu.A. Melnikov and Yu.T. Voroshilova (2019), all the design features of rubber expanders, as well as various exercises and muscle groups that these exercises are aimed at training, are considered in detail (pp. 8-15). It is noted that the advantages of using expanders include: "simplicity of classes, ease of mastering new workouts, the ability to practice anywhere (in the gym, at home, in transport, while walking)" (Melnikov & Voroshilova, 2019, pp. 10-11).

Choosing exercises with an expander, the degree of stretching and the number of repetitions, the athlete works out the muscles, develops joints and spine, and loads the heart, blood vessels and lungs (Rubber Expander, 2013). When practicing with an expander, the fingers and hand become stronger, the dexterity of the hand increases, the muscles of the forearm are pumped due to the fact that they also participate in palm compression.

E.V. Koshkin, R.A. Solonitsin, A.A. Smirnov, K.S. Kruchinina (2020) note that one of the promising ways to improve the physical capabilities of martial artists is the use of specialized simulators. The design of a throwing simulator device aimed at improving the level of technical and special training is described. This simulator is a mannequin with a sambo jacket on it and tightly tied with a wrestling belt from above and below. The mannequin is suspended on rubber shock absorbers between two pillars standing on the same line and a Swedish wall located at a distance behind the mannequin. Dosing of the load is carried out by tension and loosening of rubber shock absorbers.

N. S. Sverkunova, O. V. Vinogradov (2015) described a pedagogical experiment on training athletes "sambo wrestlers" to perform a throw "front footboard". The conduct of this experiment involved the use of rubber expanders through which the explosive force of hand traction was developed when performing a throw; individual elements of the technique of hand work and coordination of movements were fixed. This study showed that in the experimental group, in which hand expanders were used, among other things, the indicators of the technique of performing the "front footboard" throw were one

and a half times higher than in the control group, in which there was no use of hand expanders.

As the analysis of existing expander designs has shown, the vast majority of them are aimed at training only the compressive force of the fingers of the hand.

Among the expanders aimed at training the rotational movement of the hand, a number of designs were identified, for example, the following. Simulator (2020), which provides alternate rotation of the hands of a round handle, which, depending on the direction of rotation, rises or falls along the vertical rack. Another design of the simulator for training the muscles of the forearms (2013) provides for the presence of a crossbar mounted on racks, with the possibility of rotation, in the middle part of which there is a section for winding a cable with a load suspended at its free end. During training, the athlete simultaneously or alternately rotates the crossbar. At the same time, a cable is wound on the crossbar, at the free end of which a load is suspended. By changing the weight of the load, the athlete selects the optimal force of resistance to rotation for muscle training.

### 3 Research Methodological Framework

The purpose of the article is to search for such a design of a wrist expander that would provide effective training of the hands of a "sambo wrestler", "judoist", taking into account the specifics of the movements performed by his hands during combats.

Achieving this goal required solving a number of tasks:

- study of the peculiarities of the training process of "sambo wrestlers" and "judoists";
- study of the technical level of existing designs of simulators that provide training of fingers, hands and wrists;
- development of the design of the wrist expander, which ensures successful training of the hands of athletes of wrestlers, taking into account the specific movements performed by them during fights.

To achieve this goal, the method of functional-structural-technological analysis was used. According to this method, the object of research was selected and considered from various points of view: functional, structural, technological.

A wrist expander was chosen as the object of the study, which provides the creation of a load closest in nature to that experienced by a wrestler athlete ("sambo wrestler", "judoist") during a technical action with an opponent's jacket captured in the hands.

### 4 Results and Discussion

It is known that in order to increase the level of technical skill and successfully carry out technical actions during fights, all athletes, including wrestlers, need to develop those muscle groups that are necessary to perform techniques from their arsenal.

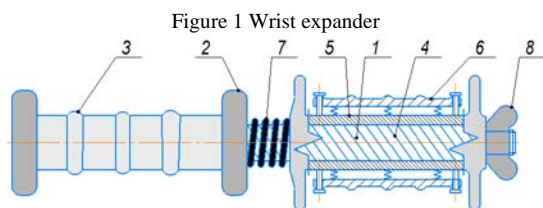
Analysis of known expander designs has shown that the vast majority of them are aimed at training the compressive force of the fingers. But such expanders enable to strengthen the grip strength of the opponent's jacket with your fingers, but do not provide training for the rotational movement of the hand when the athlete needs to overcome resistance from the opponent by twisting the armhole of the opponent's jacket on his fist to unbalance him.

During the patent information search, a number of simulator designs were found aimed at training the muscles of the arm, providing rotational movement of the hand. Technological analysis has shown that not all of them are convenient to use, since many structures are stationary and bulky, which makes them inconvenient when used at home and outside the sports ground on which they are mounted.

A functional analysis of the athlete's actions during the performance of a technical action with the capture of the opponent's jacket showed that the expander should provide simultaneous training of both hands of the athlete. At the same time, the fingers of the hand of one hand must firmly hold the object captured in it (without rotating the wrist), the muscles of the other hand must ensure the rotation of the wrist with the object clamped in its fingers.

During the structural analysis of known structures and the level of technology development, an original design of the wrist expander was developed, which has the required functional and technological properties.

The design of the wrist expander (see Figure 1) is a rod with a thrust step in the middle. The thrust stage serves to create a support surface for the compression spring, therefore it is made with an outer diameter exceeding the outer diameter of the compression spring. A handle is fixed on one side, which serves to grip it with the fingers of one hand. On the other side of it, a screw thread is made. A wrist grip with a similar screw thread is also installed here. Thanks to the screw thread, the movement of the wrist grip (when it rotates) along the side of the rod is ensured. The handle and wrist grip are equipped with spring-loaded clamping straps to increase the load on the fingers when gripping. A compression spring is installed between the end of the wrist grip and the thrust stage. The expander is equipped with an adjustment device that provides the ability to set the pre-compression force of the spring and thereby set the required effort in accordance with the athlete's power capabilities.



Notes: 1 - rod; 2 - thrust rung; 3 - handle; 4 - screw thread; 5 - hand grip; 6 - clamping straps; 7 - compression spring; 8 - adjusting device

Source: compiled by the author

In this design, a metal spring is used as a force elastic element, due to which the wrist expander has stable elastic properties and compact design. In addition, thanks to the possibility of setting the pre-compression of the spring, it is possible to adjust the training effort. Also, the training force can be set by replacing the spring with another one made of wire of a different diameter and a different stiffness characteristic.

## 5 Conclusion

Taking into account the comprehensive analysis of the object of research, the article proposes its design, which enables achieving the goal of effective training of the hands of athletes-wrestlers.

In this design, the training force is created due to the spring elasticity, which does not require the use of bulky and heavy loads, as with many analogues aimed at training the rotational movement of the brush. Thus, this design will be compact and lightweight, which will allow the athlete to carry it with him and use it not only in the training hall, but also in other places, for example, at home, in the countryside, on the outdoor sports field.

The wrist expander has an unpretentious design and is easy to manufacture. It has the ability to adjust the compression ratio of the spring, which will allow both beginners with a low level of physical fitness and professionals with a high level of physical fitness to use this simulator. In relation to this expander design, an application for a utility model patent was submitted to the Federal Institute of Industrial Property of the Russian Federation in 2021.

Another advantage of this expander is the approximation of the nature of the movement of the hands during training with it to

the movements of the athlete's hands during technical actions during training or a combat with an opponent, which will significantly increase the effectiveness of the training process of "sambo wrestlers", "judoists" and wrestlers of other sports performing technical actions with the capture of the opponent's jacket.

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## Primary Paper Section: A

## Secondary Paper Section: AK, AQ

## APPLIED MATHEMATICAL DISCIPLINES IN THE CONTEXT OF INTERDISCIPLINARY CONNECTIONS

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**Abstract:** The article is devoted to the role of interdisciplinary connections in the process of improving the quality of mathematical education in an economic university. Due to the transition of the Russian economy to market relations and the expansion of the use of mathematical methods in various fields of economics, the requirements for the level of mathematical training of graduates have increased. The author analyzes the role of applied economic and mathematical disciplines in the education of an economist using the example of a specific discipline. The author's main conclusion is that applied economic and mathematical disciplines developed on the basis of an interdisciplinary approach actually continue the mathematical education of an economist and meet modern requirements for the competencies of graduates of economic universities.

**Keywords:** mathematics, economics, education, disciplines, interdisciplinary.

### 1 Introduction

The topic of the quality of mathematical education at the university before the country's transition to a market economy was relevant mainly for technical universities. In connection with the transition of the Russian economy to market relations in the 90s of the twentieth century, the role of mathematical methods and economic and mathematical modeling in economic analysis increased, which, in turn, caused an increase in the requirements for the level of mathematical training of graduates of economic universities. Proposals to improve mathematical education have also become relevant for economic universities. In principle, all these proposals imply the achievement of the goal of teaching mathematics, formulated as follows: "Its level after completing studies at a higher educational institution should provide the ability to understand mathematical methods necessary for work in the specialty, but not studied at the university, the ability to read the literature necessary for this, the ability to independently continue mathematical education" (Kudryavtsev, 1985, p. 114). This statement was formulated in 1985 in relation to teaching mathematics at a technical university. Currently, it has become relevant for graduates of economic universities, as well as the statement formulated much later, which actually confirms the previous statement: "In recent years, among the tasks of higher education, the task of acquiring skills of constant self-education by young specialists throughout their working life has been put forward among the priorities. The pace of intellectual re-equipment of science and technology today is such that a student in his future activity will encounter laws, processes and technologies that he could not get acquainted with in principle at the university" (Knyazeva, 2009, p. 17).

The interest of specialists in the problem of improving the quality of mathematical education in an economic university is obviously due not only to the increased requirements for the level of mathematical training of graduates, but also to the fact that, as formulated by A. N. Ilchenko and B. Ya. Solon (2010), "mathematics is a fundamental component in the system of higher professional education in the Russian Federation" (p. 119). In this regard (Kudryavtsev, 1985; Podoprigora, 2004) argue about the necessity for continuous mathematical education, including in an economic university.

A. N. Ilchenko and B. Ya. Solon (2010) draw attention to the connection between the quality of basic mathematical training and the assimilation of economic and mathematical disciplines: "Without a full-scale study of mathematics, without knowledge of the basics of abstract logical thinking, mathematical economics is not assimilated, there is no need to talk about the practical application of its methods in production management" (p. 125). This statement is consistent with the conclusion of I. E. Denezhkina and colleagues (2012) "high requirements for the quality of mathematical training are becoming an urgent problem

of economic education" (p. 101). As you can see, almost all the authors come to the conclusion that there is currently a need for high-quality mathematical training at an economic university.

However, there are difficulties in solving this problem. The main difficulties are connected both with teaching mathematics to students and its applications in economics, and with the joint work of teachers of mathematical and economic departments.

A. N. Ilchenko and B. Ya. Solon (2010) emphasize: "Our authorities have realized the necessity to strengthen fundamental training in the curricula of economists" (p. 124). However, despite the awareness of the problem at the state level, in practice there are serious problems in the field of teaching mathematics and its applications in economics. One of the problems is connected with the established practice of teaching mathematics at an economic university, according to which a limited number of hours are allocated for the study of higher mathematics, which does not allow achieving the required level of training. L. V. Dobrova (2014) formulated the problems arising in this regard: "At the present stage of the development of higher professional education, there is a serious problem associated with the low level of mathematical training of students of economic specialties. ... The problem is caused by contradictions between: the intensive flow of accumulation of mathematical knowledge and the limited possibilities of their assimilation by a person with an insufficient level of mathematical competence formation; between the increased requirements of employers to the level of mathematical training of economists-managers and the level of mathematical competence of graduates of economic specialties of universities" (p. 288). The tendency to reduce the number of hours for studying mathematics in some economic universities in recent years has contributed to the superficial study of mathematics with a predominance of applied orientation in teaching from the very beginning. A. N. Ilchenko and B. Ya. Solon (2010) write about the undesirability of such training: "Specialists who have received mathematical knowledge in the form of a set of formulas and algorithms may be powerless in solving many problems that require developed abstract thinking" (p. 125). Thus, teaching mathematics in economic universities is in contradictory circumstances – increased requirements for the level of mathematical training of graduates on the one hand, and a decrease in the number of hours to study mathematics with an "insufficient level of mathematical competence" of students, on the other one. These circumstances require their consideration in the organization of mathematical education at the university (Ilchenko & Solon, 2010, p. 125).

### 2 Literature Review

As already noted, modern requirements for the training of graduates of economic universities assume a level of mathematical training sufficient for the construction, analysis and forecasting based on economic and mathematical models.

To solve the problem of the quality of mathematical education in economic universities in the conditions of contradictions and difficulties mentioned above, the authors propose various approaches to teaching mathematics.

It is obvious that the fundamental mathematical training that students receive in junior courses is crucial for the quality of the graduate's mathematical training. Kudryavtsev L.D. (1985) talking about the necessary changes in the formulation of mathematical education as a result of new requirements, argues that this is primarily an increase in the level of fundamental mathematical training and, on this basis, strengthening the applied orientation of the mathematics course.

A. N. Ilchenko and B. Ya. Solon (2010) assign a special role to the fundamental mathematical training of a graduate. According to the authors, "the main goal of teaching mathematics is the

development of intelligence based on fundamental mathematical training acquired in the 1-2 courses. It is the full-scale study of mathematics, and not shortened and cut courses, which can ensure formation of an intellectual level of a graduate sufficient for self-improvement of his qualifications and competitiveness in the new economy" (p. 128). There is no doubt about the validity of the statements about the importance of increasing the level of fundamental mathematical training. However, a full-scale study of mathematics in an economic university seems unrealistic due to the tendency to reduce the number of hours for studying mathematics in such universities, as mentioned above.

One of the solutions to the problem is to take into account the needs of special departments in mathematical courses. L. D. Kudryavtsev (1985) speaks about the necessity to build a mathematical education that takes into account the needs of special disciplines: "Teaching applied problems by mathematical methods is not the task of mathematical courses, but is the task of specialty courses. ... The correct organization of the training of mathematical models is possible only with good coordination of the efforts of mathematicians and specialists in the relevant fields" (p. 161). O. G. Knyazeva (2009) emphasizes that "the implementation of the requirements of the professional orientation of the mathematics course involves the interaction of mathematics teachers and teachers of special disciplines. For a full-fledged mathematical education, it is necessary to build mathematical courses taking into account the requirements of these disciplines" (p. 17).

I. E. Denezhkina and colleagues (2012) are sure that "the mathematical component of professional training of students is a joint matter of mathematical and "graduating" economic departments. The specificity of mathematics in universities of economic orientation is that mathematics cannot exist here without its demand from the "graduating" departments" (p. 102). However, as already noted, it is in this part of the formulation of education in an economic university that there are difficulties "what is not a problem in the case of "mathematics- physics" is a problem that requires discussion in the case of "mathematics-economics" (Denezhkina, 2012, p. 104). The approach in accordance with the principle of professional orientation of teaching mathematics is considered in a number of works (Kudryavtsev, 1981; Knyazeva, 2009; Baigusheva, 2014a; Baigusheva, 2014b). A competence-based approach to teaching mathematics is being developed by many specialists (Dobrova, 2014; Drobysheva & Drobyshev, 2018; Pirogova & Kulikova, 2017; Nikitina, 2013; Burmistrova et al., 2013; Anisova, 2018). The concept of fundamentalization of education is consistent with this approach, which also assumes an orientation towards personal development in the learning process (Popov, 2009). These are modern approaches proposed in research on this problem. However, the interdisciplinary approach seems to be the most promising. The role and significance of this approach is profoundly and comprehensively formulated by L. N. Sinelnikova (2016) who is sure that "modern science defines the concept of interdisciplinarity as the main direction in the development of scientific knowledge and, accordingly, in the formation of educational policy. ... It is necessary to pay attention to the importance of interdisciplinary connections in the educational process that can improve the quality of education, ensure the integrity of the competence approach in teaching, the possibility of mobility and adaptability in practice" (p. 101-102).

As an example of the successful application of an interdisciplinary approach, we can cite a project-oriented teaching method, the introduction of which is reported at Nizhny Novgorod University (Kuznetsov, 2011; Kuznetsov & Semenov, 2012). This technology has been used very successfully for quite a long time in a number of European and American universities. However, it is emphasized that this method is effective only at the final stage of training and is actually unacceptable in junior courses when teaching mathematical and natural sciences disciplines to students. Another positive example is given by Zasyadko O.V., Moroz O.V. (2016) and report on an electronic resource developed at the Kuban State University, in which the

study of mathematics is accompanied by tasks in economic disciplines studied in parallel with mathematics. Applied economic and mathematical disciplines, the object of study of this article, can be considered as the result of interdisciplinary interaction. According to their purpose, economic and mathematical disciplines cannot be purely mathematical. Their content requires an interdisciplinary approach. N. V. Popova (2018a, 2018b) considers the role of applied mathematical disciplines in the education of an economist. I. E. Denezhkina and her colleagues (2012) speak about the need for such disciplines in economic universities: "Teaching mathematics in junior courses should have a logical continuation.... The methodological potential of mathematics can be provided only by mathematicians with sufficient erudition in the relevant special field. Students can be taught to apply mathematics in economics either by economists with sufficient erudition in quantitative methods, or by the above-mentioned mathematicians. At the economic departments, painstaking work is needed to introduce applied mathematical methods into the teaching of special subjects with the involvement of mathematicians" (p. 110). It should be noted that the interdisciplinary approach in teaching mathematics to undergraduate students attracts the attention of many specialists, and not only in economic universities. The interdisciplinary approach has become widespread both in science and in education (Calvo & D'mello, 2010; Chojak, 2018; Cornelius-White et al., 2013; Karunan et al., 2017; Lattuca, 2001; Repko & Sostak, 2011; Reynolds & Dacre, 2021; Szostak, 2007; Sostak, 2012; Wagner et al., 2011).

### 3 Research Methodological Framework

The purpose of this study is to generalize the experience of applying an interdisciplinary approach on the example of an applied economic and mathematical discipline. The objectives of the research are the following: to analyze the process of studying the economic discipline using mathematical methods; to characterize the results of training both in terms of the economic content of the discipline and in terms of the role of mathematical methods in the assimilation of the discipline. Among research methods used were analysis, synthesis, generalization.

### 4 Results and Discussion

The results of the study were obtained on the basis of the development and application of an educational and methodological complex of applied economic and mathematical discipline, taking into account the level of basic mathematical training of students. The discipline "Mathematical methods of financial analysis" was developed at Plekhanov Russian University of Economics at the Department of Higher Mathematics for students of economic specialties. The discipline "Mathematical Methods of Financial Analysis" was developed under a grant from the National Foundation for Personnel Training as a part of an innovative educational project under the program "Support for Innovations in Higher Education" for students of economic specialties. The work program of the discipline primarily takes into account the volume and content of mathematical disciplines studied by students in junior courses, as well as the content of economic disciplines related to finance. It was necessary to make sure that the economic content of the discipline being developed allows the student to gain new knowledge in the field of finance and investment. The discipline is devoted to one of the most important issues of modern economics – the analysis of investments in terms of certainty. To study the discipline, knowledge of mathematical analysis and other branches of mathematics is required. In the presentation of the discipline, such concepts of mathematical analysis as the exact bound of numerical sets, the limit and convergence of numerical sequences, continuity of functions, theorems of differential calculus, elements of convex analysis are used. The main object of study is fixed income financial investments.

The first part of the discipline contains the mathematical foundations of financial analysis in terms of certainty. The main attention here is paid to the definition of fundamental concepts and the derivation of formulas, which is necessary to understand

the processes of increasing and discounting monetary amounts. Based on the decomposition of functions into power series, a comparative analysis of the methods of accrual and discounting is carried out, some important concepts of the theory of interest rates and their applications are considered.

The theory of financial flows and its applications are considered to the extent necessary for the study of production and financial investments in conditions of certainty. In particular, on the basis of the theorem on intermediate values of a continuous function, the theorem on the existence of a solution to the equation of profitability of the financial flow is proved.

In the second part of the discipline, methods of evaluating investment projects with a classical investment scheme are given, the economic meaning and properties of project performance indicators are considered in detail. On the basis of the theorems on continuous and differentiable functions, the dependences of efficiency indicators on the parameters of the investment project are studied. The latter is particularly important, since the correct evaluation of the project is determined not only by the values of performance indicators, but also by their behavior when changing project parameters.

The third part of the discipline is devoted to fixed income financial investments. Here we study in detail the factors influencing the valuation of an investment in a bond, such as the time structure of interest rates, internal yield, coupon rate, maturity, duration and convexity index of the bond, as well as the characteristics of the bond portfolio without credit risk, strategies for managing the bond portfolio. Special attention is paid to the immunization strategy. The study of the discipline is accompanied by the solution of a large number of tasks. The numerical result obtained as a result of solving problems, as a rule, requires economic analysis. According to the presentation, the discipline is mathematical, according to the content economic.

As a result of studying the discipline, students acquire the skills of applying mathematical methods in financial analysis and gain the knowledge necessary for a modern specialist in the field of investment. The use of mathematical methods in the course of studying the discipline contributes to a better understanding of financial instruments and transactions by students. Based on the experience of conducting the discipline, it can be argued that applied economic and mathematical disciplines can be considered as a continuation of mathematical education received by students in junior courses. In conditions of increased requirements to the level of training and simultaneous reduction of time for studying mathematics, applied mathematical disciplines to some extent compensate for this decrease, thereby improving the quality of mathematical education and, in general, economic education. It can be said that applied mathematical disciplines are one of the forms of implementation of the principle of continuous mathematical education (Kudryavtsev, 1985; Podoprigrora, 2004). One more aspect of such disciplines can be mentioned – their ability to bring both students and teachers closer to scientific activity, since mathematics is the language of science. A teacher of an applied discipline can contribute to the development of this field of knowledge. In this case, the logic of the presentation of the discipline required proof of new theorems that are missing in investment textbooks.

## 5 Conclusion

There are difficulties in solving the problem of improving the quality of mathematical education and teaching students to use mathematical methods in an economic university. The interdisciplinary approach, which results in applied economic and mathematical disciplines, seems to be real and has significant potential in improving the level of mathematical training of graduates. Applied economic and mathematical disciplines developed with the participation of teachers of mathematical departments or mathematicians with knowledge in a special field can be considered as a continuation of mathematical education received by students in junior courses. Disciplines contribute to the consolidation of mathematical

knowledge, which means improving the quality of mathematical training, and the assimilation of mathematical methods used in solving economic problems. Being mathematical by the method of presentation, the disciplines have an economic content, are practice-oriented and have scientific potential.

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## DESIGNING REMEDIAL AND DEVELOPING WORK ON THE ENHANCEMENT OF THE EMOTIONAL-VOLITIONAL SPHERE IN MENTALLY RETARDED PRESCHOOLERS WITH AUTISM SPECTRUM DISORDERS

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**Abstract:** The article discusses the scientific, theoretical and practical foundations of the design of remedial and developing work aimed at overcoming the shortcomings in the development of the emotional-volitional sphere in mentally retarded children with autism spectrum disorders. The authors consider the approaches of scientists in Russian and foreign literature to this issue, analyze the most effective modern practices for overcoming disorders of the emotional-volitional sphere of children. The results of the experimental study presented in the article characterize the specific features of the emotional-volitional sphere. The authors designed a remedial and developing program for the enhancement of the emotional-volitional sphere of mentally retarded preschoolers with autism spectrum disorders and revealed the results of the extrapolation experience in the context of socialization of this category of children.

**Keywords:** design, emotional-volitional sphere, correction, remedial and developing program, children with special educational needs, mentally retarded preschoolers, autism spectrum disorders.

### 1 Introduction

In general, the current stage of development of Russian defectology and the service of psychological and pedagogical support for mentally retarded preschoolers with autism spectrum disorders is characterized by the urgent need to increase research attention to the study of the specifics of their emotional-volitional sphere as a determinant factor of mental development and social adaptation of children, and, as a consequence, the relevance of the development and implementation of resource support for the process of its development, directly focused on the category of "special" childhood under consideration. One of the ways to solve the existing needs can be the analysis of the experience of the professional community, where the available "focus" scientific research and the use of similar resources are supported by methodological justification and methodological developments.

Mental retardation, complicated by autism spectrum disorders, is one of the types of "multiple" disorders in dysontogenesis. According to E. R. Baenskaya, M. M. Liebling, O. S. Nikolskaya (2019) and other authors, autism and mental retardation in most cases occur together, forming a so-called complex defect that requires special approaches in remedial work.

Children with organic brain damage are characterized by emotional discomfort in contacts with people around them, even the closest ones, scarcity of emotional manifestations, insufficient use of facial expressions and gestures in communication. The combination of two defects greatly aggravates the typical personality characteristics of the considered category of children and, in general, hinders the full process of their social adaptation. Therefore, the socialization of a child with development disorders depends on the early onset of remedial action, in which various specialists of psychological and pedagogical support are involved with an active participation of parents. The complexity, integrity and consistency of remedial and developing work provide positive results in the cognitive and socio-personal spheres and social adaptation of children with disabilities.

The combination of autism spectrum disorders with mental retardation is not a mechanical summation of the signs of each of the disorders, but a qualitatively new phenomenon that requires a

completely different approach and other methodological solutions. There is a tendency to increase the number of mentally retarded children who have a concomitant defect in the form of autism spectrum disorder, which emphasizes the need to find ways to improve their psychological and pedagogical support and indicates the relevance and timeliness of the research results presented in this article.

### 2 Literature Review

The term emotional-volitional sphere is used mainly in applied research when studying the regulation of particular types of activities in specific conditions and is defined as human properties that characterize the content, quality and dynamics of his emotions and feelings, including the ways of their regulation (Karpushkina & Vasyutina, 2019; Cibralic et al., 2019; etc.). The results of research indicate the exceptional importance of emotions and will with their identification with the key factors of mental development and adaptation of children in society (Joseph & Ittyerah, 2015; Lakhani, 2013; Matson & Shoemaker, 2009; Ogundele, 2018; Sturmeijer, 2002; etc.).

The ways of forming the emotional-volitional sphere of children in the Russian education system are presented in separate systems, programs, methodological complexes and are implemented in psychological, pedagogical and psychological-pedagogical contexts. The analysis of these contexts of the formation of the emotional-volitional sphere of the child allows us to differentiate a number of approaches: the first one is determined by the requirements of the state and society for the upbringing and education of children – educational programs are formed as programs of psychological and pedagogical support for positive socialization and individualization, personality development of preschool children, which is impossible without purposeful formation of emotional-volitional processes of children (including remedial work and/or inclusive education of children with disabilities and handicapped children, mastering the educational program in groups of combined and compensating orientation take into account the peculiarities of development and specific educational needs of each category of children); within the framework of the second one, partial programs of psychological, pedagogical and psychological-pedagogical orientation are implemented, where game, relaxation, psycho-gymnastic, musical-meditative, emotional-symbolic, art-therapeutic methods are used as resources; The third is represented by programs aimed at enriching the emotional sphere with the help of aesthetic, artistic, musical and theatrical means of influencing the child (Lebedinsky et al., 1990; Shipitsyna, 2005; Chaidi & Drigas, 2020; Sturmeijer, 2002; etc.).

### 3 Research Methodological Framework

The purpose of the study was to extrapolate the existing experience in the context of correction of the emotional-volitional sphere of mentally retarded preschoolers with autism spectrum disorders and to establish its pedagogical potential within the framework of purposeful remedial work in the designated area:

1. to determine the degree of elaboration of the problem of the formation of the emotional-volitional sphere in modern research by means of a cluster study of publications;
2. to study the features of the formation of the emotional-volitional sphere in mentally retarded children with autism spectrum disorders;
3. to develop a program of remedial and developing work on the formation of the emotional-volitional sphere in mentally retarded preschoolers with autism spectrum disorders;
4. to prove experimentally the effectiveness of the proposed program of remedial and developing work on the formation

of the emotional-volitional sphere in mentally retarded preschoolers with autism spectrum disorders in practice.

The research activity was based on the following methods: theoretical - analysis of scientific literature and pedagogical phenomena reflecting various aspects within the framework of correction of the emotional-volitional sphere of mentally retarded preschoolers with autism spectrum disorders; empirical - generalization, systematization and interpretation of pedagogical experience in this field (both their own and the pedagogical community as a whole); pedagogical design; comparative analysis and synthesis of empirical data based on the results of approbation. The study was conducted on the basis of municipal preschool educational institution "Kindergarten No. 91 of compensating type", Saransk. Eleven children aged five to six years took part in it, four of whom were medically reported of having intellectual underdevelopment and early childhood autism, seven children - intellectual underdevelopment with autistic symptoms. All children who took part in the ascertaining experiment had the main defect "mental retardation" (F-70 according to ICD-10) (2019) complicated by disorders in the emotional-volitional sphere.

#### 4 Results and Discussion

The specificity of emotional-volitional disorders in children with development disorders predetermined the allocation of a special approach to the formation of the emotional-volitional sphere. Within the framework of this study, a systematic search was carried out for publications of a scientific, scientific-methodical and educational-methodical nature, and which are primary reports on the development of the emotional-volitional sphere of children with special needs over the past ten years.

The query strings were entered into the Scopus bibliographic database, which provides continuous coverage of most international peer-reviewed journals in the field of special education and rehabilitation. The quoting records obtained in the second step were read into the program VOSviewer 1.6.10 (Van Eck & Waltman, 2014) for the construction and visualization of bibliographic networks. This software projects "nodes", such as publications, authors, or terms, in a two-dimensional space based on a normalized index of bibliographic similarity (i.e. the strength of references), such as the number of joint citations of two publications by a third, publications, or the number of times two terms occur together in one publication (Van Eck and Waltman, 2014). In addition, the program performs a weighted and parameterized clustering option based on modularity in channel strength in order to identify additional differences beyond those that can be obtained from two-dimensional scaling (Van Eck and Waltman, 2014). In order to reflect the subject under study in longitudinal studies of early development, a network of joint appearance of terms extracted as a result of processing titles and abstracts in natural language for nouns and combinations of adjectives and nouns was created. In addition, only terms that occur five or more times were included. The algorithm of the program ranks the found terms depending on the degree of systematicity or randomness of their coincidence, leaving only 60% of the most relevant terms. Terms were excluded if they related to longitudinal research, young children or mental retardation (since publications were already selected on this basis), if these terms described research methods (taking into account interest in the subject area) or if the terms seemed trivial (for example, the type of publication, statistical terms or the country of the study). The problems of these publications were extracted from the titles and annotations and subjected to multidimensional clustering (see Figure 1).

The green cluster consisted of 39 terms, and it was dominated by the terms "syndrome", as well as, although to a lesser extent, "disorder", "abilities" and "individual", which reflects the emphasis on the diagnosis of individual children. Early development was represented in this cluster by cognitive ("cognitive", "memory") and sensory-motor ("motor") areas. When searching for terms related to intervention and support,

only "patient", "identification" and "treatment" were found. Terms related to education are not found in this cluster.

Figure 1 The results of a cluster analysis of publications on the development of the emotional-volitional sphere of children with special needs over the past ten years in the Scopus database



Source: compiled by the authors

The blue cluster consisted of 32 terms dominated by the terms "autism", "autism spectrum disorder", and "skills", focusing on people with autism spectrum disorders and their skills. Early development was represented in this cluster by the spheres of cognition ("joint attention", "cognitive development", "learning"), communication ("language", "language development", "speech", "gesture", "vocabulary", "Word", "expressive language", "communication") and socio-emotional skills ("social interaction"). Terms related to intervention or support, or to education did not belong to this cluster.

The red cluster consisted of 44 terms, in which the terms "disability", "family", "parent" and "mother" prevailed, which reflected the family orientation. In this cluster, early development was represented only by socio-emotional skills ("friendship", "peer", "social competence", "social skills"). Searches for terms related to the areas of "intervention" and "support" have also been included in this cluster. For example, "effectiveness", "efficiency", "practice", "professional", "program", "services" and "support". The red cluster included terms related to education, such as "education", "school", "student", "special needs" and "teacher".

As a result of the analysis of the received request, priority was given to the works available in the National Bibliographic Database of Scientific Citation (Elibrary). The problems of these publications were extracted from the titles and annotations and subjected to multidimensional clustering. The topic of the development of the emotional-volitional sphere has the greatest representation in the field of studying children with special needs of primary school age. Some studies in the period of preschool childhood reflect the problems of blind and visually impaired children, children with mental retardation. Despite the worldwide trend of increasing research on the problems of complex developmental disorders in children, including combined defects - mental retardation and autism spectrum disorders, these clusters of research do not reflect any significant growth. The cluster of publications devoted to the study of emotions and will of mentally retarded children includes 44 works. Cluster of publications reflecting the problems of autism spectrum disorders - 45. The cluster of publications focused on the study of combined defects - mental retardation and autism spectrum disorders - 27. The number of dissertation studies, that is, works with a dominant focus of scientific research, is also small: on the problems of children with mental retardation - 18, on the problems of children with autism spectrum disorders - 10. Children with combined defects - mental retardation and autism spectrum disorders were not studied in the framework of "focus" studies.

The results of the cluster analysis allow us to generalize the opinion of numerous authors about the peculiarity of the development of mentally retarded preschoolers with autism spectrum disorders, which manifests itself, first of all, in the emotional-volitional sphere disorders, which is the main obstacle to the formation of a full-fledged, harmoniously developed personality capable of interacting with the outside world, successfully socializing in it.

Mentally retarded children with autism spectrum disorders have specific features of the emotional-volitional sphere due to the combination of two "nuclear" defects. This category of children is characterized by the scarcity of their own intentions, motives, great suggestibility - distinctive features in the "launch" of their volitional efforts. In general, the lack of arbitrary regulation of behavioral acts, rapid satiety, impulsivity are typical for activity. Emotions are characterized by superficiality, diffuseness, weakness, and they do not always correspond to real situations. As a rule, the emotional reactions and behavior of the child are unpredictable even in familiar everyday situations.

The feelings of mentally retarded preschoolers with autism spectrum disorders are unvaried, characterized by two extreme states of pleasure and dissatisfaction, characterized by instability, low differentiation, arise under the influence of a strong stimulus, their actions acquire an imitative, formulaic character. In most cases, the studied category of children is dominated by egocentric emotions, showing high appreciation only of significant and pleasant people for the child.

The volitional sphere of mentally retarded preschoolers with autism spectrum disorders is at a low stage of development. In this regard, they have difficulties in exercising control over their behavior, committed actions, actions are impulsive. Children of this category do not show initiative, cannot subordinate their actions to the requirements of adults, the community in which they are, do not set goals for themselves and do not strive to achieve them.

It should be noted that even with the general type of mental development disorder, each child with autism spectrum disorders has significant individual differences, also in emotional reactions. The complexity of violations of the emotional-volitional sphere of the category of children under consideration requires special approaches to the correction process from the subjects of psychological and pedagogical support. To identify the specifics of the emotional-volitional sphere of mentally retarded preschoolers with autism spectrum disorders at the preliminary stage of experimental research, the following methods were used: observation method, methods "Emotional faces" and "Study of understanding the emotional states of people depicted in the picture" (Semago, 2017), adapted taking into account the typological and individual characteristics of the subjects.

The experimental study took place from March to April 2021. The analysis of the data obtained enabled us to establish significant deviations in the formation of the emotional-volitional sphere of mentally retarded preschoolers with autism spectrum disorders. Most of the children had difficulties in expressing their emotions, feelings in relation to what was happening, their superficiality, insufficient differentiation was observed. Self-aggression, negativism, increased anxiety, and suspiciousness were traced in the behavior of children. In preschoolers, a decrease in the sense of self-preservation, the threshold of emotional discomfort in the relationship with the outside world was revealed. In the play activity of children, along with the manifestation of activity, difficulties arose in understanding the instructions of an adult, distinguishing the emotional state of people around them by their gestures, body movements, facial expressions, which is the main reason for the manifestation of inertia, inadequacy of emotional reactions. All this has a significant impact on the emotional state, the violation of which is associated with increased excitability and irritability. Children have a low level of motivation for play activities, insufficient volitional regulation, which leads to lack of

initiative, suggestibility, and passivity in the process of performing productive activities.

When starting to perform diagnostic tasks of the above-mentioned methods, 54.5% of mentally retarded preschoolers with autism spectrum disorders freely made contact; the rest of the children needed a preparatory conversation aimed at preparing children for the process of completing the task. It was found that some preschoolers (36.4%) had great difficulties in recognizing emotions, up to the complete inability to identify them, despite the fact that bright realistic images were offered. Some preschoolers (36.4%) had an inadequate reaction to the proposed images, manifested in self-aggression, prolonged fixation on certain parts of the face, mainly teeth. Preschoolers rated such a face as evil, even if it was a smile. In the process of completing the task, 9% of children were characterized by increased distraction, restlessness; they then walked aimlessly around the room, and then started the task again. Qualitative characteristic: mentally retarded preschoolers with autism spectrum disorders are characterized by increased anxiety, a low level of imagination development, in most cases they cannot adequately determine the emotional state, difficulties arise in recognizing human emotions. Some subjects could differentiate emotions only with the help of an adult. It was especially difficult for them to recreate the emotions depicted in the photographs, most of them could not cope with this task.

The complexity of disorders of the emotional and volitional sphere of the category of children under consideration requires special approaches to the correction process from the subjects of psychological and pedagogical support. Remedial work with this category of children is based on complete individualization with a constant restructuring of the educational trajectory. In order to perform any task, to perform a certain type of activity, preschoolers need constant support from an adult, guiding help, motivating the child to achieve the final result, bringing what has been started to the end.

Researchers (Morozov et al., 2016; Gordeeva, 2018; Evlampieva, 2017; Kisova & Komkova, 2019; etc.) emphasize that the lag in the development of the cognitive sphere, difficulties in assimilation of socially accepted forms of expression of emotions, lack of formation of behavior motives in mentally retarded preschoolers with autism spectrum disorders significantly complicate their independent mastery of emotions and volitional regulation of behavior. As a result, there is a need for special remedial and developing work with this category of children. In the case of a combination of mental retardation and autism spectrum disorders, the pedagogical problems of each of the components of a complex disorder reinforce the problems of the other. Autism spectrum disorders do not allow the full use of traditional methods of oligophrenopedagogy, such as imitation training and personality-oriented motivation, and the presence of mental retardation, in turn, greatly complicates the formation of the affective meaning of surrounding objects and phenomena, and also limits the possibility of using emotionally oriented methodological approaches to the correction of autism. The combination of autism spectrum disorders with mental retardation is not a mechanical summation of the signs of each of the disorders, but a qualitatively new phenomenon that requires a completely different approach and other methodological solutions (Lebedinsky et al., 1990, p. 14).

To level out the developmental disorders presented above, we have designed a program of remedial and developing work. At the same time, under the technology of pedagogical design, we understand a certain algorithm of sequential and continuous movement of interrelated elements or stages of the educational process, a program of actions of its participants. It consists of three stages: modeling, design, construction (Lebedinsky et al., 1990, p. 153).

The program of remedial and developing work on the formation of the emotional-volitional sphere in mentally retarded preschoolers with autism spectrum disorders. Remedial work was carried out taking into account the principles of consistency, complexity and integrity. The system principle was implemented

in the course of providing psychological and pedagogical assistance to children, specialists of preschool educational organizations (educators, speech therapist, psychologist, defectologist) and parents. The assistance was implemented simultaneously, the efforts of significant adults were coordinated and coordinated with the special needs of the child.

The complex nature of the remedial and developing work consisted in the fact that the specialists of the educational organization (psychologist, speech therapist, defectologist, educators), parents provided the child with joint assistance, covering all areas of his activity. Remedial and pedagogical assistance extended to the emotional-volitional, cognitive, motor spheres, optimizing social ties and relationships of subjects of correctional work. The child received the necessary help, was involved in various activities, the success of his education, development, and interpersonal relationships is monitored.

The principle of integrity was used in the work, since it was supposed to include various forms, methods, means, didactic and psychotherapeutic techniques.

The implementation of these principles was carried out in close interrelation of all specialists of the preschool educational organization in working with mentally retarded children with autism spectrum disorders.

All the work carried out can be divided into three blocks: diagnostic (conducting a psychological and diagnostic examination using various methods and techniques), remedial and developing (conducting group correctional and developmental classes) and analytical (evaluating the results of classes conducted through repeated diagnostic examination). The program includes the correction of anxiety, fears, aggressiveness, and purposefully forms the "language of emotions" in preschoolers: expands the understanding of basic emotions, develops the ability to convey emotional states through the use of various expressive means (verbal and non-verbal). As part of the program, it is planned to conduct subgroup (individual) classes on the development of the emotional sphere of children once or several times a week. The content of the program is based on the use of elements of sand therapy, game therapy, art therapy, music therapy, etc. This approach contributes to the enrichment of emotional experience, harmonizes the emotional and moral sphere, actualizes the "zone of immediate development" of a preschooler. The emotional background that an adult creates when reading a fairy tale, the change of the characters' voices, the reflection on the teacher's face of the emotional states of the fairy tale characters - all this contributes to the fact that the child unconsciously begins to "reflect" on his face the feelings that he experiences when listening to a fairy tale. During the lessons, techniques of analyzing fairy tales, telling fairy tales, preparing a fairy tale with the help of dolls, playing fairy tales by roles, creating illustrations for a fairy tale are used. These techniques are a good means of expanding the emotional experience of mentally retarded preschoolers with autism spectrum disorders and a way to form the regulation of their behavior. The originality of this program lies in the author's transformation of the resource provision of work on the formation of an emotional-volitional sphere with a direct focus on the category of "special" childhood under consideration, as well as in the inclusion of innovative resources that were not previously used in working with mentally retarded preschoolers with autism spectrum disorders.

At the end of the formative experiment, a control experiment was conducted. We needed to find out to what extent the proposed guidelines influenced the level of formation of the emotional-volitional sphere in mentally retarded preschoolers with autism spectrum disorders. To do this, the results obtained before and after the experimental training were compared.

The control experiment included two experimental series. The first one involved the registration and collection of data on the emotional-volitional manifestations of the subjects, the second series provided for an assessment of the formation of an understanding of people's emotional states.

Analysis of the results of the first series of experimental research showed that the identification of pictorial images of emotional states: "Joy", "Grief", "Anger" do not cause special difficulties in children. The most difficult to perceive were pictorial images of emotional states: "Fear", "Sadness", "Happiness". Thus, out of the entire sample of subjects, 63.6% perceive pictorial images of emotional states, 36.4% do not perceive them. The results of a study of awareness of their own emotions of the subjects can be represented as follows: from the total sample of subjects 72.7 per cent are aware of their emotions, 27.3 per cent are not.

The empirical data analysis of the second series of experimental studies showed that 45.5% of children understand the emotional state of adults and peers, and 54.5 % of the subjects in this understanding was not available, or were perceived to a lesser degree.

Summarizing the data obtained in the control experiment, we, similarly to the ascertaining experiment, conditionally divided the entire composition of mentally retarded preschoolers with autism spectrum disorders into three groups according to the levels of formation of the ability to differentiate emotional states. A positive result of the study is the redistribution of mentally retarded preschoolers with autism spectrum disorders according to the levels of development of skills to differentiate emotional states.

Thus, the results of the control experiment showed that preschoolers, after conducting targeted training, coped more successfully with the performance of experimental tasks. As evidenced by noticeably higher quantitative and qualitative indicators of the performance of these tasks.

Within the framework of the study, the following approaches were identified to the logic of the activity of designing remedial and developing work on the development of the emotional-volitional sphere in mentally retarded preschoolers with autism spectrum disorders (allowing to reveal its essence taking into account the target, substantive, organizational-procedural and evaluative-effective components, as well as to justify the pedagogical conditions for the effective implementation of this work):

- diagnostics of reality is based on the consideration of a practical problem - a set of contradictions that should be resolved, which implies the definition of a strategy and a way to solve the problem, the establishment of a final goal and its achievement;
- development / transformation of reality - definition of the concept of the program of remedial and developing work, that is, the establishment of design goals in certain criteria, the formation of an algorithm with hypotheses of achievability / unattainability, modeling, creation and analysis of alternatives to solutions, the choice of effective design methods;
- development of ways to manage the implementation of the project; - planning the implementation of the strategy, that is, tactical programming of activities: detailing goals with the establishment of a stage, confirmation of conditions and resources, development of directions and methods of necessary internal and external interactions;
- implementation of the project based on feedback, analysis of the implementation process, interchange, regulation and adjustment of planned operations in the communication process, etc.;
- comprehensive examination of the results of the project, the establishment of subsequent remedial actions for the development of the project.

Remedial and developing work with this category of children is based on full individualization in accordance with the needs of the child himself and the requests of his parents with a constant restructuring of the trajectory of movement for the development of the program, therefore, when designing, it is assumed to take into account such factors as: the peculiarities of the individual psychological sphere of children; the degree of formation of

social and cognitive motives; individual pace and speed of progress; the potential for transformation of resource provision.

The novelty of the proposed approaches is justified by the proposal of those design resources that can potentially improve the designated process.

## 5 Conclusion

Pedagogical design of any process or phenomenon provides a holistic, systematic representation of the object under study, taking into account systemic and activity approaches; its application in pedagogical research enables theoretically substantiating the essence of the process under consideration, structuring it, substantiating the connections between the components and presenting it in a generalized form.

The value and significance of the data presented in the article is determined by the fact that the authors summarized and interpreted the results of an experimental study of the emotional-volitional sphere of mentally retarded preschoolers with autism spectrum disorder, and characterized the theoretical aspects of the study of this problem. The data obtained during the experimental work provide an opportunity to determine the scientific, theoretical and practical foundations of remedial and developing work aimed at overcoming shortcomings in the development of the emotional-volitional sphere in mentally retarded children with autism spectrum disorders.

The author's materials can be used in research and practice-oriented activities of subjects of psychological and pedagogical support of preschoolers of this category of "special" childhood.

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**Primary Paper Section:** A, F

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## THE INFLUENCE OF CULTURAL AND ETHNIC FACTOR ON THE FORMATION OF INDEPENDENCE OR PERSONAL HELPLESSNESS (BASED ON THE STUDY OF YOUNG MIGRANTS FROM CENTRAL ASIA)

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**Abstract:** The article substantiates the cultural and ethnic factors of the formation of personal helplessness and independence based on the study of migrants from Central Asia. The factors are indicators of cultural values and ethnic identity of migrants. Personal characteristics, determining the behavior, activities and relationships of a migrant, can contribute to or hinder the process of adaptation and integration into the host community. As a result of the conducted research, it was found that the features of cultural values and ethnic identity act as a risk factor for the formation of personal helplessness. The data obtained form the basis for the development and testing of programs of psychoprophylaxis and psychological correction of personal helplessness, programs to support the adaptation process in migrants.

**Keywords:** personal helplessness, independence, cultural and ethnic factor, ethnic identity, cultural values, migrants, adaptation.

### 1 Introduction

The dynamism of social processes taking place in the life of modern society, the unstable socio-economic situation of recent decades have an unpredictable and uncontrollable impact for most people, the programs of modernization of social and economic spheres carried out by the state cause difficulties not only of a financial nature, but also psychological. The necessity to be involved in the innovation processes being implemented requires, in addition to material, financial costs, stress resistance of people, their psychological readiness for changes and innovations.

Human behavior in a difficult life situation is complicated and has ambiguous effects and consequences. When a stressful event occurs, homeostasis, the internal balance of the subject is disturbed. The choice of resources for effective stress management is influenced by the personal characteristics of the subject and environmental factors. The ability of a person to resist the forces that disrupt his internal balance is an extremely important characteristic of his life activity. Everyday observations show a clear connection between personal formations, characteristics of the subject (stability, features of attributive style, self-esteem, level of anxiety, potential resources, features of coping behavior, etc.), and how the subject realizes himself, achieves his goals, overcomes various kinds of difficulties. Uncontrolled social, economic and political events that are traumatic for the subject can act as a predictor of the formation of personal helplessness in the latter (Tsiring, 2010).

Despite the achievements in the development of the psychology of personal helplessness, the genesis of research on this phenomenon indicates that only some aspects of personal helplessness are in the attention of scientists. The main factor in the formation of personal helplessness are violations in the style of family relationships, in addition, as the causes of personal helplessness may be traumatic events beyond the control of the individual's influence, a number of social indicators: the level of material security, the completeness of the family, external serious social, economic, political incidents. In addition, we assume that there are cultural and ethnic factors in the formation of personal helplessness. The revealed fragmentary nature of research on personal helplessness hinders the holistic study of the subject, the representation of the psyche in the unity of its organization, the study of behavior, activity as mediated by the

inner world of a person. Therefore, for a more holistic and in-depth understanding of the nature of the phenomenon of personal helplessness, a systematic view of environmental, namely cultural and ethnic factors of the formation of this characteristic is necessary. The study of cultural and ethnic determinants of personal helplessness will enable not only to develop the concept of personal helplessness, discovering new data on the nature of personal helplessness, but also to create a theoretical basis for solving applied problems related to the correction of the phenomenon under study, the question of which also remains open today.

Thus, further development of the psychology of personal helplessness in the context of a detailed study of the factors of its formation can answer a number of questions concerning the nature of personal helplessness, its possible prevention and correction.

### 2 Literature Review

Personal helplessness, understood as a set of psychological and behavioral characteristics of an individual, affects the behavior and activity of the latter, leaving an imprint on his relationship with other people, on his self-attitude. In the concept of personal helplessness, actively developed in the national school of Psychology (Tsiring, 2010; Zabelina et al., 2018; Evstafyeva, 2013; Ponomareva, 2013; Klimova & Tsiring, 2017; Tsiring & Sizova, 2018) within the framework of the subject-activity approach, personal helplessness is defined as "the quality of the subject, which is the unity of certain personal characteristics arising from the interaction of internal conditions with external ones, determining the low level of subjectivity, that is, the low ability of a person to transform reality, manage the events of his own life, set and achieve goals, overcoming various difficulties" (Tsiring, 2010, p. 195). Personal helplessness allows the subject to reduce the traumatic impact of a difficult life situation, providing an adaptive effect due to the perception of events as beyond his control. Studies on personal helplessness (Zabelina et al., 2018; Ponomareva, 2013; Evstafyeva, 2013; Klimova & Tsiring, 2017) describe the content of the phenomenon under study, structural components are identified, the family is studied as the main factor in the formation of personal helplessness, the relationship with some aspects of life, various types of personal helplessness in adolescents are identified.

It should be noted that D. A. Tsiring (2010), the author of the concept of personal helplessness, proved the continuity of the nature of personal helplessness, the opposite characteristic of which is the independence of the subject, which determines a high level of subjectivity (Tsiring, 2010). Independence, as a characteristic of the subject that is opposite in its content, determines the peculiarities of an individual's life activity in such a way that his behavior, activity and relationships turn out to be a manifestation of a high ability to transform reality, to act as an active beginning of his own life position (Tsiring, 2010).

The cultural and ethnic factor includes the traditional way of life, features of human reproduction and everyday life, characteristics of the worldview, methods of socialization of children and adolescents, beliefs, various cultural traditions, socio-legal and moral and ethical norms, and others (Kharitonov et al., 2004; Safarova, 2020). The culture of society and peculiarities of a particular ethnic group are extremely important factors in the formation of a subject (Warikoo & Carter, 2009), they influence the behavior and activity of an individual, starting from the nature of solving everyday issues and ending with the peculiarities of personal, family and professional activities. The influence of ethnic factors on the formation of personal helplessness can also be considered from the point of view of cultural characteristics (collectivism-individualism) of the family's region of residence. By dividing cultures into collectivist and individualist, differences in the behavior of

representatives of different cultures are explained (Schwartz et al., 2012a, 2012b; Vietze et al., 2019).

Consideration of ethnic factors in relation to the ethnic identity of subjects, in our opinion, will provide valuable data on the factors contributing to the formation of personal helplessness. Ethnic identity as awareness of belonging to a certain ethnic community enables a child to realize, on the one hand, his identity with the group, and on the other– his own uniqueness (Stefanenko, 1999). Belonging to a certain group creates a sense of security, satisfies the need for belonging, and sets common life values. The level of ethnic identity affects the attitude towards oneself as a whole: the higher the level of ethnic identity, the more positive the self-attitude (Mironov, 2012). Positive ethnic identity, which consists in the subject's awareness of belonging to his ethnic group, assessing the significance of ethnicity, showing interest in the history and culture of his people, a sense of national pride, forms the basis of effective socialization and professionalization, contribute to successful productive personal and professional development (Stefanenko, 1999). Therefore, it is important to study ethnic identity in individuals with personal helplessness, to identify the main guidelines that it sets. In addition, we assume that through the development and change of ethnic identity, through the formation of a positive ethnic identity, it is possible to correct personal helplessness.

### 3 Research Methodological Framework

The purpose of this work is to assess the influence of the cultural and ethnic factor on the formation of independence and personal helplessness on the material of migrants from Central Asia (Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan). In accordance with the purpose, the objectives of the study were put forward: to diagnose the phenomena under study (personal helplessness/independence, ethnic identity, cultural values) in migrants of Central Asia and, based on the results obtained, to conduct a discriminant analysis; to interpret the data obtained.

The general scheme of empirical research was determined by the purpose of the work. In accordance with the purpose of the study, the sample consisted of two groups of respondents: migrants from Central Asia (N=222, average age 20.84, median 20). The survey of respondents was conducted using Google Forms.

The research methods were questionnaire survey, testing method, methods of mathematical data processing. The testing and questionnaire survey were conducted in an individual form. The questionnaire allowed us to collect data on socio-demographic indicators. The following research methods were used: the questionnaire of personal helplessness (Klimova & Tsiring, 2017), the questionnaire "Types of ethnic identity" (Soldatova & Ryzhova, 1998), the method of G. Hofstede (2015) "Value survey module", the method of studying cultural values S. Schwartz (Schwartz et al., 2012a, 2012b). Mathematical methods of statistical data processing are presented by methods of descriptive statistics, discriminant analysis. Discriminant analysis is used to decide which variables distinguish (discriminate) two or more emerging aggregates (groups). In this study, discriminant analysis is used to determine the cultural and ethnic determinants of personal helplessness and independence of youth from neighboring countries.

### 4 Results and Discussion

To study the cultural and ethnic factors of personal helplessness and independence, two groups of respondents were formed based on the results of the diagnosis (questionnaire of personal helplessness (Klimova & Tsiring, 2017)): subjects with personal helplessness (N=56) and subjects with independence (N=94). Subjects with intermediate indicators were not included in the further study (N=72). In order to determine the totality of cultural and ethnic factors of the formation of personal helplessness, we conducted a discriminant analysis, based on the obtained indicators of ethnic identity and cultural values, in

groups of subjects with personal helplessness and subjects with independence. The results are shown in tables 1-4. As a method, the Wilks method was used, referring to step-by-step methods. Table 1 shows the coefficient  $\lambda$  (Wilks Lambda), the F -criterion and the level of significance that characterize significant differences in average values for the studied groups of youth with personal helplessness and independence from Central Asia.

Table 1 Average values, Wilks lambda coefficients, F-criteria and significance levels of cultural and ethnic factor indicators among Central Asian youth with personal helplessness and independence

Discriminant variables	The average values of the cultural and ethnic factor indicators among the youth of Central Asia		$\lambda$	F	P
	with personal helplessness	with independence			
Indicators of cultural values (Schwartz et al., 2012a, 2012b)					
Conformity	3,53036	<b>4,18617</b>	0,947	8,293	<b>0,005</b>
Traditions	3,19464	<b>4,07660</b>	0,907	15,258	<b>0,000</b>
Kindness	4,06607	<b>5,19043</b>	0,876	20,994	<b>0,000</b>
Universalism	3,79643	<b>4,75213</b>	0,902	16,147	<b>0,000</b>
Independence	3,74286	<b>5,07872</b>	0,831	30,115	<b>0,000</b>
Stimulation	3,54643	<b>4,46064</b>	0,900	16,431	<b>0,000</b>
Hedonism	3,95179	<b>4,76170</b>	0,925	11,934	<b>0,001</b>
Power	2,83929	<b>3,40638</b>	0,954	7,088	<b>0,009</b>
Safety	3,76071	<b>4,87872</b>	0,869	22,330	<b>0,000</b>
Achievements	3,68214	<b>4,84362</b>	0,846	27,011	<b>0,000</b>
Value survey module (Hofstede, 2015)					
Power Distance (PDI)	<b>3,31250</b>	3,12234	0,968	4,863	<b>0,029</b>
Individualism (IDV)	2,82143	2,78191	0,998	,273	0,602
Masculinity (MAS)	3,07589	<b>3,27660</b>	0,960	6,236	<b>0,014</b>
Uncertainty Avoidance (UAI)	<b>3,34375</b>	3,17553	0,979	3,140	<b>0,078</b>
Types of ethnic identity (Soldatova, Рызгова, 1998)					
Ethnonigilism	13,62500	<b>16,43617</b>	0,924	12,222	<b>0,001</b>
Ethnic indifference	8,66071	8,27660	0,997	0,482	0,489
Positive ethnic identity	<b>6,16071</b>	4,11702	0,960	6,189	<b>0,014</b>
Ethno - egoism	14,51786	<b>16,53191</b>	0,966	5,216	<b>0,024</b>
Ethno - isolationism	14,35714	<b>16,59574</b>	0,956	6,800	<b>0,010</b>
Ethno - phanatism	14,19643	<b>15,24468</b>	0,987	1,877	<b>0,017</b>

Source: authors' own processing

Further, we carried out the interpretation of the data obtained. According to the results of the discriminant analysis, indicators of cultural values, ethnic identity and learned helplessness are associated with the fact of the formation of personal helplessness/independence. Cultural and ethnic characteristics, acting as discriminant variables, indicated in Table 1, act as variables, the differences in which between groups of migrant youth with personal helplessness and independence are statistically significant, except for indicators of ethnic indifference and individualism (IDV). Turning to the average values, it can be noted that the formation of cultural values acts as a factor preventing the development of personal helplessness. Values and value orientations, acting as a guideline, form the independence of the subject. The distance of power, according to the results obtained, is more pronounced in respondents with personal helplessness. "The power distance is the degree to which people who have no power or have little power agree that power is unevenly distributed in society" (Hofstede, 2015, p.

32). The indicators of the distance of power are different depending on the country of residence and its cultural characteristics. Hofstede notes that at the cultural level there is a "collective programming" of consciousness, which includes as stages the experience of relationships in the family, school, university (or other educational institution) and at work, as well as the peculiarities of state power and the ideology of the country. In families from countries with a long distance of power, the need for a respectful and dutiful attitude towards adults is conveyed to the child, and independent behavior and independence are not encouraged. Parents remain throughout their lives an authority for their child, who makes all important decisions only with their approval. In families of countries with a small distance of power, the child is perceived by parents as a partner, relationships are built on equal rights from an early age, the child is taught to make independent decisions and be responsible for them. Thus, according to the results obtained, a large distance of power acts as a factor that increases the risk of personal helplessness.

Analyzing the indicator of masculinity (MAS), we can note that it is more characteristic of subjects with independence. According to Hofstede, the cultural stereotypes accepted in society regarding masculinity and femininity begin to be transmitted to the child in the family. So, in countries with a masculinity culture, children are taught ambition, rivalry, ambition, the ability to assert themselves, form leadership qualities and the desire for success. In feminine cultures, children are taught values such as modesty, obedience, respect for the elders, the priority of harmonious relationships with others over personal success, form the ability to find a compromise in controversial situations, as well as adapt to society. Children brought up in a culture of femininity do not strive to achieve high results. Masculinity, acting as a cultural value, prevents the formation of personal helplessness and is typical of young people with independence.

The next indicator of national culture – avoidance of uncertainty (UAI) – is more characteristic of respondents with personal helplessness. A high level of uncertainty avoidance implies a clearer adherence to rules and regulations, defining the boundaries of what are possible and available, dangerous and non-dangerous, which helps to reduce anxiety, fear, ambiguity and unpredictability. In countries with a high degree of uncertainty avoidance, people feel the need for formalized clear guidelines and norms of behavior, a strict distinction between "bad" and "good". In cultures with a low level of uncertainty avoidance, people are characterized by calmness, tolerance and carelessness. The norms of relationships in these countries are also present, but residents understand that depending on the situation, they can behave differently, be more flexible, adaptive and tolerant to new and uncertain situations, experiences, people or ideas. The high degree of avoidance of uncertainty, characteristic of both the culture in which a person lives and subsequently himself, acts as a predictor determining the risk of personal helplessness.

In addition to indicators of cultural values, we studied the ethnic identity of respondents from Central Asia. Thus, the predicative marker of the formation of personal helplessness was the indicator of positive ethnic identity. Positive identity implies a tolerant attitude towards one's own ethnicity, as well as tolerant views towards other ethnic groups. The data obtained on the relationship between personal helplessness and positive ethnic identity allow us to conclude that the combination of a positive attitude towards one's own people with a positive attitude towards other peoples is more typical of young people from Central Asia with personal helplessness. The indicators of ethnonihilism, ethno-egoism, ethno-isolationism and ethno-fanaticism are more pronounced in subjects with independence. Ethnonihilism implies the search by the subject for socio-psychological options to unite with other people, while an ethnic trait does not act as a significant indicator for building relationships. It is easier for people with independence to build harmonious relationships with others at the expense of common interests, their own uniqueness, without resorting to ethnic

criteria. Types of ethnic identity, assuming to varying degrees the expression of the belief in the superiority of "their" people over others, are also more pronounced in subjects with independence and act as a factor in the formation of independence. These types of identity include ethno-egoism, ethno-isolationism, and ethno-fanaticism. Migrants from Central Asian countries, who distinguish "in-group" and "out-group" among the inhabitants according to ethnic criteria, recognize the priority of ethnic rights of the people over human rights, and are also ready to justify the presence of victims in the struggle for the well-being of their people. The severity of the ethnic orientation sets a clearer understanding of one's own ideals, allows one to realize one's ethnic superiority, to understand who is "friend" and who is "foe". All these aspects can act as a life guideline, allowing the subject to be more self-confident and independent. However, the severity of the types of ethnic identity listed above may pose a threat to national security and provoke interethnic conflicts. These results require additional empirical verification, but, nevertheless, open to us a different understanding of the phenomenon of independence in the context of the study of ethnic factors of the formation of personal helplessness and independence.

Table 2 shows the values of the discriminant function.

Table 2 Basic statistics of the canonical discriminant function

Function	Proper value	% of variance	Total %	Canonical correlation	$\lambda$	Chi square	p
1	2,195	100,0	100,0	0,829	0,313	169,598	0,0001

Source: authors' own processing

Based on the data obtained, we can say that the canonical discriminant function is informative and explains 100% of the variance, and also with a Wilks value of 0.313 and a statistical significance of  $p=0.0001$ , indicates that the set of discriminant variables has a good discriminative ability. However, not all variables were included in the discriminant equation, which is due to taking into account not only their discriminative ability, but also their unique contribution to the aggregate with the rest of the variables.

Table 3 shows the coefficients of the canonical discriminant function.

Table 3 Coefficients of the canonical discriminant function

Function	Masculinity (MAS)	Ethno-isolationism	Ethno-fanaticism
1	-0,236	-0,493	0,354

Source: authors' own processing

The coefficients of the canonical discriminant function indicated in Table 3 characterize the contribution of each variable to the value of the discriminant function, taking into account the influence of the other variables. Thus, the indicators of masculinity (MAS), ethno-isolationism and ethno-fanaticism make the greatest contribution to the value of the discriminant function that divides migrants into independent and personally helpless.

Table 4 shows the combined intra-group correlations between discriminant variables and the standardized canonical discriminant function.

Table 4 Structural matrix

Characteristic	Function
Ethno-isolationism	-0,145
Masculinity (MAS)	-0,139
Ethno-phanatism	-0,076

Source: authors' own processing

The variables presented in Table 4 are ordered by the absolute value of the correlation in the function. Thus, the greatest absolute correlation is observed between the discriminant function and the indicator of ethno-isolationism. According to the data obtained, the discriminant equation includes indicators of ethno-isolationism, ethno-fanaticism and masculinity, which contribute to the differentiation of respondents – migrants from



Central Asian countries – into personally helpless and independent. The severity of these indicators contributes to the formation of independence. With a low level of severity, these indicators act as risk factors for the formation of personal helplessness.

## 5 Conclusion

The process of adaptation requires the individual to mobilize personal resources. The success of adaptation depends not so much on external factors as on the internal characteristics of the subject. Personal characteristics, determining the behavior, activities and relationships of a migrant, can contribute to or hinder the process of adaptation and integration into the host community. The study of cultural and ethnic factors of the formation of personal helplessness includes the study of the ethnic living conditions of the individual, the system of cultural values, as well as the ethnic identity of the subject. This study opens up the possibility of a holistic and deep understanding of the studied phenomena - personal helplessness and independence, enables to create a basis for the development and testing of programs of psychoprophylaxis and psychological correction of personal helplessness, programs to support the adaptation process in migrants.

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## PSYCHOLOGICAL FACTORS OF ONCOLOGICAL MORBIDITY IN WOMEN LIVING IN AN INDUSTRIAL METROPOLIS

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**Abstract:** In the structure of oncological morbidity among women, breast cancer occupies a leading position both in Russia and around the world. This study aims to study the contribution of psychological and environmental factors to the risk of breast cancer in women living in an industrial metropolis. During the study, it was found that the following psychological risk factors can be considered: reduced indicators of the worldview, rare use of the coping strategy "Escape-avoidance", reduced indicators of quality of life, external locus of control in the field of failures, family and interpersonal relationships, general internality, as well as a reduced indicator of resilience. The results obtained can be included in the development of personalized breast cancer screening protocols.

**Keywords:** breast cancer, basic beliefs, coping behavior, resilience, locus of control, life orientation, quality of life, oncopsychology, oncological morbidity.

### 1 Introduction

Malignant neoplasms are one of the main causes of death, disability, deterioration of the quality of life and an important obstacle to increasing life expectancy in every country in the world. According to the World Health Organization estimates in 2019, malignant neoplasms occupied leading positions in the structure of causes of death under the age of 70 (Ferlay et al., 2020). Every year, more than one million (in our country more than 70 thousand) primary breast tumors are registered in the world. Mortality from this disease does not exceed mortality from cardiovascular diseases, or lung cancer in women. But the proportion of deaths from breast cancer in women aged 35-55 years is significantly higher than the mortality of women from cardiovascular diseases and lung cancer, which falls on the average age of women 60-85 years (Ferlay et al., 2020). These data emphasize the necessity to search for risk factors for both the disease and the course of breast cancer, the description of risk models for their inclusion in breast cancer control programs. Women at high risk of breast cancer should be offered more intensive monitoring and preventive measures. An accurate and individual assessment of the risk of the disease is central to decision-making regarding the prevention strategy. This requires testing prognostic models at the population level that can classify women into risk groups for breast cancer. However, this requires the identification and study of risk factors that could be included in these predictive models. In studies, scientists have noted the mediated morbidity and survival of individuals with cancer diagnosis by the social and psychological characteristics of the latter (Bahrami et al., 2018; Bray, 2021; Carver et al., 1994). However, scientists have not yet been able to identify specific social mechanisms and factors leading to the development of malignant neoplasms, the results obtained are ambiguous and sometimes contradict each other.

### 2 Literature Review

According to global cancer statistics (Ferlay et al., 2020), genetic factors (including the main susceptibility genes (BRCA1, BRCA2)) account for about 10% of breast cancer cases in developed countries, but their prevalence among the population is too small to explain most of the differences in the risk of morbidity among women. Consequently, differences in the risk of morbidity may be the result of different environmental, social and psychological factors. In medical sociology, social models of disease are described that link health status and socio-economic indicators of life on a large scale. According to sociological research, the urban population is more prone to cancer than the rural population. A person's place of residence can affect health, the course of illness due to such indicators as air and water quality, solar activity in the region, proximity to industrial facilities that produce or store hazardous substances, accessibility of social facilities (medical institutions, including the quality of services, sports facilities). The impact of carcinogenic and man-made environmental factors in an industrial metropolis, the processes of urbanization that change the lifestyle, the increasing pace of life and the information load have an impact on the increase in morbidity among residents of megacities (Kiku et al., 2017; Radkevich et al., 2018). Oncological diseases are considered as an indicator of the ecological disadvantage of the territory. In Chelyabinsk region of the Russian Federation, with a nuclear catastrophe in its history and with specific environmental problems, an unfavorable situation has developed over the past decades for the spread of oncological diseases.

Investigating the population aspect of breast cancer risk factors, N. E. Kosykh and S. Z. Savin (2009) note that in some cases territorial differences in the incidence of breast cancer within one country are explained by the unequal ethnic composition in its different territories, differences in lifestyle, eating habits, the state of reproductive function of different nationalities. The state of health can also be mediated by the peculiarities of social relationships, the presence/absence of external support. In addition, the availability and quality of medical services and employment opportunities depend on the place of residence, which can also affect the state of health, mediating the need for residents to earn a living. The economic characteristics of the regions of residence can create and strengthen socio-economic differences, peculiarities of behavior in the situation of illness.

In addition to the social prerequisites for the development of malignant neoplasms, a number of studies have described psychological factors of breast cancer in women (Revidi, 1983; Tsiring et al., 2019; Tarabrina, 2014; and many others). As psychological risk factors for breast cancer, the authors identify restraint in the manifestation of emotions, a pronounced sense of guilt and self-doubt, an external locus of control and low importance of the value of health (Gibek & Sacha, 2019), unproductive coping strategies, feelings of hopelessness and helplessness, rigidity of attitudes (Carver et al., 1994), feelings of despair and depression (Zenger et al., 2011) and others.

This study is aimed at studying the contribution of psychological and environmental factors to the risk of breast cancer in women. As psychological predictors, such as basic beliefs, life orientations, locus of control, coping behavior strategies and subjective assessment of quality of life, indicator of subjective age, personal helplessness-independence, resilience are identified. The place of residence of women with breast cancer is considered as an environmental factor – an urban area.

### 3 Research Methodological Framework

In this regard, the aim of this study was an empirical analysis of the contribution of predicative markers determining the morbidity of women with luminal breast cancer living in an industrial metropolis. Research objectives: to conduct

discriminant analysis in order to determine psychological predicative markers of cancer; to carry out quantitative and qualitative interpretation of the data obtained.

The methods of diagnosis of psychological predictors of morbidity were: the scale of basic beliefs (Padun & Kotelnikova, 2008), the questionnaire "Methods of coping behavior" (Kryukova, 2010); the methodology of the level of subjective control (Bazhin et al., 1984); the test of life orientation (Tsiring & Evnina, 2013), the test of resilience (Leontiev & Rasskazova, 2006), Quality of Life Questionnaire (SF-36), (Ware et al., 1993). Methods of quantitative processing of empirical data: methods of descriptive statistics, discriminant analysis (Nasledov, 2012). The design of the study involves an analysis of the psychological characteristics of women with breast cancer at various stages of the disease (N=138), who first applied for professional medical care at the Chelyabinsk Regional Clinical Center of Oncology and Nuclear Medicine. The study was conducted between March 2020 and September 2020.

#### 4 Results and Discussion

In order to determine the totality of psychological predictors that are associated with the risk of breast cancer in women living in a megalopolis, we conducted a discriminant analysis, the results of which are shown in Tables 1-4. As a method, Wilks method was used, referring to the step-by-step method. Table 1 shows the average values of psychological variables, the coefficient (Wilks Lambda), the F-criterion and the level of significance, characterizing significant differences in each of the presented variables for groups of women living in urban areas, diagnosed with breast cancer, as well as healthy.

Table 1 Average values, lambda Wilks coefficients, F-criteria and significance levels

Discriminant variables	M <sub>1</sub>	M <sub>2</sub>	λ	F	P
The scale of basic beliefs (Padun & Kotelnikova, 2008)					
Self-image	29,19	31,3	0,954	8,114	0,005
Luck	32,4	34,9	0,956	7,862	0,006
The belief about control	25,83	27,1	0,976	4,665	0,03
Questionnaire "Methods of coping behavior" (Kryukova, 2010)					
Escape-avoidance	11,56	13,3	0,960	6,998	0,009
Planning	11,69	12,6	0,968	5,524	0,02
Positive reevaluation	12,62	14,17	0,956	7,830	0,006
Quality of Life Questionnaire (SF-36), (Ware et al., 1993)					
PF	63,93	87,76	0,718	66,524	0,001
RP	39,5	75,44	0,834	38,39	0,001
BP	59,53	70,78	0,947	9,429	0,002
GH	52,95	65,57	0,914	15,945	0,001
VT	50,04	61,47	0,920	14,628	0,001
SF	61,7	74,77	0,923	14,172	0,001
RE	41,08	65,47	0,914	15,866	0,001
MH	47,58	64,25	0,849	29,959	0,001
The methodology of the level of subjective control (Bazhin et al., 1984)					
General internality	11,4	20,68	0,948	9,325	0,003
Internality in the sphere of failures	0,77	3,87	0,954	8,066	0,005
Internality in family relationships	-0,65	2,03	0,948	9,271	0,003
Internality in the sphere of interpersonal communication	1,25	2,42	0,971	4,996	0,027
The test of resilience (Leontiev & Rasskazova, 2006)					
Risk taking	14,97	13,09	0,975	4,282	0,04
M1 – average values of indicators of psychological characteristics of women with breast cancer living in the city. M2 – average values of indicators of psychological characteristics of women without cancer diagnosis living in the city.					

Source: authors' own processing

According to the results of the diagnosis of life orientations (the test of life orientations (Tsiring & Evnina, 2013)), no significant

differences were found among women with and without an oncological diagnosis.

Let's move on to the interpretation of the data obtained in the course of discriminant analysis. The results show that indicators of the worldview (basic beliefs), coping strategies, indicators of quality of life, indicators of the locus of control, as well as an indicator of resilience - risk acceptance are associated with the fact of breast cancer. Psychological characteristics acting as discriminant variables, indicated in Table 1, act as variables for which differences between groups of healthy women and women with breast cancer living in urban areas are statistically significant.

Referring to the average values of psychological characteristics of women with cancer and conditionally healthy, it can be argued that a more positive picture of the world is a kind of protector that prevents breast cancer: healthy women have indicators of basic beliefs about their own value and significance, luck and ability to control the events of their own lives statistically higher than women with cancer.

A number of coping strategies act as a preventive factor and reduce the risk of breast cancer. We are talking about such coping strategies as escape-avoidance, planning and positive reassessment. These coping strategies are more pronounced in healthy women living in an urban environment. The escape-avoidance strategy, which consists in avoiding the individual from solving difficulties independently, is interpreted by most researchers as maladaptive, but it has some positive effect, in particular, it is able to quickly reduce emotional tension in a stress situation, which allows a woman not to accumulate negative experiences for a long time. Problem-solving planning, which is more typical for healthy women than for women with breast cancer, manifests itself in attempts to overcome problems through a purposeful analysis of the situation, women belonging to a healthy sample develop strategies for solving the problem, plan their own actions, taking into account objective conditions, past experience and available resources. Positive reassessment is also more typical for healthy women, and involves overcoming negative experiences through a positive rethinking of the problem, considering a difficult situation as an incentive for personal growth. These positive effects from the use of these coping strategies, apparently, allow women to maintain psychological well-being and somatic health.

The subjective assessment of the quality of life is significantly higher in women without an oncological diagnosis. It follows from this that reduced physical and psychological components of health are risk factors for breast cancer in women living in a megalopolis. The subjective locus of control as the degree of readiness of an individual to take responsibility for what is happening around him also significantly differs in women with breast cancer and healthy women. However, it should be noted that despite the significant differences in the indicators of the level of subjective control, most indicators correlate with externality in accordance with the norms of the methodology. Thus, women with an oncological diagnosis are more likely to have an external locus of control in the field of failures, family relationships, and also, in general, women do not see a connection between their actions and significant events in their lives, do not consider themselves able to control their development and believe that most events are the result of an accident or the actions of other people. In the field of interpersonal relations, healthy women are characterized by an internal locus of control, whereas women with breast cancer are characterized by an external one, that is, the latter do not consider themselves capable of actively forming their social circle and tend to consider their relationships the result of the actions of their partners.

Considering the indicators of resilience, we state that in healthy women, risk acceptance is significantly higher (M=17) than in women with a fatal diagnosis of breast cancer (M=15.2). Risk-taking manifests itself as a conviction that it is possible to gain important knowledge and experience from everything that

happens in life, women are active, ready to act in the absence of guarantees of success (Leontiev, 2010).

Table 2 shows the values of the discriminant function, which is informative and explains 100% of the variance, and also with a value of  $\alpha=0.641$  and a statistical significance of  $p=0.001$ , indicates that the set of discriminant variables has a good discriminative ability.

Table 2 Basic statistics of the canonical discriminant function

Function	Proper value	% of the explained variance	Total %	Canonical correlation	$\lambda$	Chi-square	p
1	0,559	100	100	0,599	0,641	74,2	0,001

Source: authors' own processing

According to the data obtained, the risk of women living in urban areas with breast cancer depends on their worldview (Self-image, Luck, Belief about control), coping strategies used in difficult life situations (Escape-avoidance, Planning, Positive Reassessment), quality of life indicators, indicators of the locus of control, as well as risk acceptance. However, not all of the above variables were included in the discriminant equation, which is due to taking into account not only their discriminative ability, but also their unique contribution to the aggregate with the rest of the variables. Table 3 shows the coefficients of the canonical discriminant function.

Table 3 Coefficients of the canonical discriminant function

Function	Escape-avoidance	RP	MH	PF
1	0,418	0,332	0,374	0,554

Source: authors' own processing

The coefficients of the canonical discriminant function indicated in Table 3 characterize the contribution of each variable to the value of the discriminant function, taking into account the influence of the other variables. Thus, the greatest contribution to the value of the discriminant function that divides women into healthy and women with cancer diagnosis is made by the quality of life indicator "Physical functioning" (PF), the coping strategy "Escape-avoidance", quality of life indicators "Mental health" (MH), and "Role functioning due to physical condition" (RP) (variables are ordered by absolute value).

Table 4 shows the combined intra-group correlations between discriminant variables and the standardized canonical discriminant function.

Table 4 Structural matrix

Indicator	Function
PF	0,839
RP	0,637
MH	0,563
Escape-избегание	0,272

Source: authors' own processing

The variables are ordered by the absolute value of the correlation in the function. Thus, the greatest absolute correlation is observed between the discriminant function and the quality of life indicator "Physical functioning", which contributes to the differentiation of women into sick and healthy (0.554), and is also associated with the discriminant function (0.839).

The discriminant equation includes coping strategies such as escape-avoidance (0.392) and distancing (0.284). As already described above, the escape-avoidance strategy manifests itself in behavior as a person's avoidance of self-solving difficulties, decision-making. Healthy women use this strategy more often, quickly reducing their emotional stress. The reduced indicators of this coping strategy can be regarded as a risk factor for breast cancer for women living in an urban environment.

The indicators of quality of life "Mental health" (-0.394) and "Role functioning due to physical condition" (-0.192) were reduced in women with breast cancer. Low indicators of mental health indicate the presence of depressive, anxious experiences,

mental distress, and low indicators of role functioning due to physical condition indicate a significant restriction of daily activities by physical condition, in addition, their low indicators can be regarded as risk factors for breast cancer.

As the classification results show, with this set of discriminant variables, the classification accuracy is 77.1%, which is quite effective for classifying two classes of objects.

## 5 Conclusion

During the study of psychological risk factors for breast cancer of women living in an industrial metropolis, a number of data were obtained indicating that the following psychological characteristics of a person can be considered as psychological risk factors: reduced indicators of the worldview (Self-image, Luck, Belief about control), rare use of the coping strategy "Escape-avoidance", reduced indicators of quality of life, external locus of control in the sphere of failures, family and interpersonal relationships, general internality, as well as a reduced indicator of resilience - risk taking. The greatest contribution to the differentiation of healthy women and women with breast cancer is made by indicators of quality of life - Physical functioning, Role-based functioning due to physical condition, Mental health and coping strategy "escape-avoidance". Physical functioning and Role-based functioning due to physical condition are physical components of health. This is the scope of the efforts of oncologists aimed at the effectiveness of treatment. Mental health, being a psychological component of health related to mood, the presence of depression, anxiety, as well as the use of coping through the "Escape-avoidance" strategy, are subject to correction by psychological service specialists. The results obtained can be included in the development of personalized breast cancer screening protocols, as well as taken into account in risk assessment, when classifying women into risk groups for breast cancer. However, this requires the development and verification of predictive models.

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**Primary Paper Section:** A, F

**Secondary Paper Section:** AN, FD



## **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
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JP	INDUSTRIAL PROCESSES AND PROCESSING
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JY	FIREARMS, AMMUNITION, EXPLOSIVES, COMBAT VEHICLES

## ON PROCESSING WOOD IN THE CENTRIFUGAL FORCE FIELD

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**Abstract:** Dehydration and impregnation with subsequent dehydration of wood are integral operations in manufacturing engineering and construction timber. Searching for energy-efficient methods of performance of these operations is a task of great current interest. The objective of this work is to study the potential of impregnation and dehydration of engineering and construction sawn wood in the centrifugal field. The experiment conducted has shown the efficiency of processing small-section timber in one and the same centrifugal plant, first for the purpose of impregnation, and next – dehydration up to the 30% humidity. The obtained data have allowed establishing dependencies between the duration of processing, humidity, and weight change of the samples under study.

**Keywords:** dehydration, impregnation, wood, timber, centrifugal method.

### 1 Introduction

Impregnation of wood is one of the important stages in the added-value conversion of wood raw material. Owing to impregnation, one can modify the physical and mechanical characteristics and properties of wood, thus expanding the application range of items made of it.

According to GOST 20022.6-93 (1994), the quality of impregnation is characterized by general absorption of the protective agent and the depth of impregnation. For impregnation to be effective, saturation of the internal pore space of the wood with special chemical elements has to be ensured. The elements are introduced into the interporous space of the wood by dissolving them in the impregnating compound body (water, oil, alkyd, acryl, and so on), with the latter to be subsequently removed from the interporous space of the wood.

For deeper penetration of the impregnating compound and a faster impregnation process, forces ensuring this effect have to be created artificially. There are numerous wood impregnation technologies differing in the method of putting the pressure to ensure penetration of the impregnating compound into the interporous space of the wood, for example, high pressure steam impregnation, static impregnation, etc.

During impregnation of wood, its humidity is increased; in particular, the relative humidity turns out to be much higher than that of green wood and even higher than the humidity which engineering wood must have. For example, the required humidity of sawn wood amounts to  $12 \pm 3\%$  for the timber used in indoor construction (boards and bars for the floor, rafters, siding, framework, etc.) and  $15 \pm 3\%$  – for the outdoor construction timber (GOST 8242-88, 2008). For the timber used in making containers, the humidity is around 22% (GOST 10131-93, 2008), and it ranges within  $8 \pm 2\%$  for the wood designed for manufacturing furniture (GOST 16371-93, 2008).

The sawn timber impregnation and dehydration operations are performed using different specialized equipment: as a rule, impregnation is carried out in pressure chambers or by steeping while dehydration is achieved in drying chambers. With the known impregnation methods, the timber humidity must not exceed 30% to achieve quality impregnation (Grigoriev et al., 2015). Meanwhile, green wood has the humidity of 50% and more (Vesnina et al., 2020), therefore, it needs pre-dehydration. Given the above, after impregnation of wood, the question of its subsequent dehydration becomes essential.

The efficiency of impregnation and dehydration depends in a substantial way on the physical phenomena involved in this process, first of all, and second – on the way the production process is organized. One of the least power-consuming processes of dehydration and impregnation of wood is processing of wood in the centrifugal field. There is a number of

studies confirming the efficiency of each of these processes considered individually when processing sawn timber of various sizes and sections. Meanwhile, this wood processing method has not won extensive use, which is associated with imperfection of the existing equipment and technologies of its performance. With regard to this, the lack of studies can be traced concerning the combination of the said operations by carrying them out in one and the same plant without repositioning the blanks, which is a task of great current interest. If the additional transport operation is excluded, coupled with the fact that two operations are performed with one piece of equipment, and the rational processing time is selected for each production stage, this will allow ensuring the high efficiency of the impregnation process with the subsequent dehydration. It will also contribute to creation of the equipment and energy-efficient technologies for implementing the centrifugal method into the operating procedure of sawn wood processing. The relevance of this work is associated with all the above.

### 2 Literature Review

When studying the scientific technical literature on impregnation of wood by the centrifugal method, the authors have selected the following works to be noted. In their paper the scientists O. A. Kunitskaya, I. V. Kostin, and S. S. Burmistrova (2012) point out that impregnation of wood in the centrifugal field is distinguished by the relatively low power consumption, and it allows achieving the high extent of wood saturation with liquid within a short time span. The works by G. V. Grigoriev (2013) and by S. V. Kucher, G. V. Grigoriev, and V. A. Ivanov (2018) substantiate rational modes of the process of centrifugal impregnation for timber of the soft-wooded broadleaf species (birch, asp), with the non-linear impregnating liquid filtration law considered. The scientists give the mathematical model to represent wood saturation kinetics for the impregnating liquid as influenced by the non-linear filtration law and to take into account the microstructure of wood when calculating the speed of centrifugal impregnation. V. A. Katsadze and D. V. Vinogradov (2007) cite results of experimental studies of impregnation of wood by the centrifugal method in their paper. They have shown that the drier the wood is, the less impregnated it can be; nevertheless, volumetric impregnation by the centrifugal method can be conducted with any initial humidity of the wood.

Information on the physical bases of hydrothermal processing of wood, with the characteristics of wood which are important for dehydration specified, and properties of various drying agents and heat media described, are presented by E. S. Bogdanov, V. A. Kozlov, V. B. Kuntys, and V. I. Melekhov (1990) in their book. The paper by the scientists O. A. Kizina, A. L. Adamovich, and Yu. G. Grozberg (2011) discusses the most widespread wood dehydration methods describing the operating principle for each of them, particularities of practical performance, with advantages and disadvantages of each of them noted. The opinion about the current situation associated with drying of broadleaf wood in Europe is given by G. Milić (2019) in work; the scientist also suggests potential lines of research from the viewpoint of improving the energy efficiency of this process. In his paper, Jarl-Gunnar Salin (2010) outlines the history of modeling the wood drying process for the latest 30 years and discusses some questions associated with modeling the behavior of free moisture in the capillary system of wood during dehydration.

When studying the scientific published works concerning the process of dehydration based on the use of centrifugal forces, the authors have selected the following works to be noted. In his thesis, Oti Moto Paul Maxime (2008) suggests theoretical models of removal of the free moisture from the capillary-porous structure of wood. He also describes regularities of moisture distribution along the length of timber pieces being dehydrated and the effect of moisture accumulation in the butt end of samples dehydrated by the centrifugal method on the quality of

wood during storage. V. V. Orlov's thesis (2016) discusses questions associated with dehydration of wood chips under the effect of centrifugal forces for enhancing its operational capacities, namely, the calorific capacity. In this work, the mathematical model of dehydration of wood chips placed as a layer on the internal surface of the centrifuge is presented which allows calculating the dehydration process parameters, with the specific structure of the wood pore space taken into account. With regard to this, the scientist considers both hardwood and coniferous species. In his paper, D. M. Bogdanov (2014) demonstrates the prospects of using the centrifugal method of dehydration for sawn timber in terms of enhancing its energy efficiency. Kostin I. V. (2011) presents the mathematical model of dehydration and impregnation of small-diameter timber of soft-wooded broadleaf species (asp, alder, birch, poplar, willow, lime tree) in his work; the model allows forecasting the principal indicators of the said processes. He has also studied regularities of moisture distribution along the length of samples being dehydrated, taking into account specific effects the impregnating liquid has on the blanks.

As the review of known impregnation and dehydration methods has shown, centrifugal forces can be used efficiently in both cases. In particular, both operations can be carried out using one and the same piece of equipment – a centrifugal plant representing a rotating rotor, with timber to be treated placed on its surface. During the impregnation operation, the rotating rotor together with timber pieces placed on it is dipped into the impregnating compound, and it runs in such a submerged condition. For the dehydration operation, the rotor is taken out of the impregnating compound to further run freely.

### 3 Research Methodological Framework

The objective of the paper consists in studying the potential of impregnation and dehydration of engineering and construction sawn timber in the centrifugal force field.

Achievement of the set objective required completing a number of tasks:

- developing the design of the plant for performing the impregnation and dehydration operations in the centrifugal field in one and the same plant without repositioning the test pieces of wood;
- conducting experimental studies of the impregnation process in the centrifugal field;
- conducting experimental studies of the dehydration process in the centrifugal field;
- elaborating the recommendations on organizing a more profound research of the potential of combining the impregnation and dehydration operations in one plant.

For achieving the set objective, the authors used the method of functional, structural, and technological analysis which implies selecting the research object, considering its particularities in terms of design, technology, and functions, and carrying out the statistical processing of the experimental data.

### 4 Results and Discussion

The use of centrifugal method involves rotation of the sawn timber, which requires placing the blanks into a rotary drum. To ensure the possibility of dipping the sawn timber into the impregnating compound, the rotary drum with the timber attached to it has to be placed into a sealed shell provided with a pipeline. The latter serves for supplying the impregnating compound, removing it later, as well as removing any moisture separated during dehydration. Such a design of the plant implies the simplicity of its structural embodiment and saving of the impregnating compound used in the process.

Thus, in the study, the timber to be impregnated was placed on the internal surface of the drum located in the sealed shell. After that, the impregnating compound was supplied into the shell and the drum, accordingly. Next, the drum was set to rotation at the speed of 1950 RPM<sup>1</sup>. During rotation, the impregnating

compound was pushed back to the drum periphery and distributed over its internal surface under the action of centrifugal forces while interacting with the timber attached to this surface. With such a design, the internal volume of the shell has to be filled up only partially and not completely, for the impregnating compound to cover the sawn timber distributed along the periphery of the drum, which results in lowering the used volume of the impregnating compound. Meanwhile, reduction of the duration of saturation of the timber with the impregnating compound was observed owing to centrifugal forces intensifying this process. The impregnating compound was then drained from the drum and shell. This operation can be performed without stopping the drum rotation. Under the effect of centrifugal forces and due to the absence of any external moisture sources, the reverse process was observed – dehydration, during which the moisture remaining in the porous space of the timber was brought out.

When studying the process of impregnation with test pieces sized 253\*102\*28 cm, it has been found that in 35 min. after the start of rotation of the centrifuge loaded with wood samples and impregnating liquid, the weight of the samples went 12% up. However, rotation of the centrifuge at the same parameters for 15 min. more did not lead to any essential change in the weight of the test pieces under study. Control of the studied samples has shown that in 15 min. after the rotation start, they achieved the 60% humidity on their surface, and in 25 min. after the rotation start, humidity was 64%, remaining at the same level during rotation for 25 min. more.

When studying the test pieces sized 250\*51\*52 mm, it has been noted that in 50 min. of rotation, their weight went 8,5% down. Humidity control has shown that the surface humidity reached the value of 45% in 35 min. At rotation of the samples in the centrifuge with the impregnating compound for further 15 min., the value of the humidity indicator remained at almost the same level but the increase of weight of the test pieces was observed. Higher weight of the blanks is indicative of their saturation with the impregnating compound.

Control of the impregnation depth has also shown that with the course of time, the depth at which the impregnating compound penetrates into the studied wood samples increases. In particular, it is mainly into the sap portion of the wood that the impregnating liquid penetrates, as this portion has big curvature radii of annual rings, and it does not matter at which side of the board face sap is located – closer to the centrifuge rotation axis or further from it, closer to the internal surface of the centrifuge. So, after 50 min. of rotation, in the test pieces sized 250\*51\*52 mm, the impregnating compound penetration depth amounted to 10 mm on the board face side having large curvature radii of annual rings, measured at the distance of 5 cm from the end. Meanwhile, in the samples sized 253\*102\*28 mm, the impregnating compound penetration depth measured at the distance of 5 cm from the end was 6 mm after 50 min. of rotation.

The study of wood samples in terms of their dehydration has shown the following results. During research, it has been found that the test pieces sized 250\*60\*20 mm and having the average initial humidity of 80% were dehydrated up to the 30,2% average humidity in 90 min., i. e., the moisture loss was 49,8%. The average initial weight of the samples amounted to 174,5 g while their average weight as of the end of the experiment was 146 g. Thus, there was the weight loss of 28,5 g, which corresponds to 16% of the initial weight. In this case, the dehydration speed was 0,32 g/min.

When studying the test pieces sized 250\*40\*30 mm and having the average initial humidity of 54,5%, the following findings have been obtained. Within 75 min. of the drum rotation, the samples were dehydrated up to the average humidity of 30%, i. e., the loss of moisture made 24,5%. Initially, the average weight of the samples amounted to 174 g while it was 163 g as of the experiment end. Thus, the weight loss equaled 11 g, which amounts to 6% of the initial weight. In this case, the dehydration speed was 0,15 g/min.



When studying the test pieces sized 250\*40\*15 mm and having the 53,5% average initial humidity, the findings have been as follows. According to the results of the experiment, the humidity of 30% was achieved in 55 min. Further rotation of the samples in the drum did not yield any significant change of humidity. Within this time span, weight of the samples being dehydrated changed from 92 g to 83 g. Thus, there was the 9 g weight loss, which amounts to 9,7% of the initial weight. Meanwhile, it was noted that in the last 20 min. of rotation of the test pieces in the centrifuge, their humidity kept close to the 30% value but reduction of their weight was observed. By minute 55 of the experiment, the average weight of the samples reached 83 g, and it was 82 g at minute 75 of the experiment. In this case, the dehydration speed was 0,17 g/min. The authors have also noted that in all test pieces, the humidity of the external board face was slightly higher than of the one closer toward the rotation center. All the above is indicative of the fact that moisture is extracted from timber under the effect of centrifugal forces; it moves in the radial direction to the rotation axis and is removed through the board face located at the maximum distance away from the rotation center. Hence, the board face which is external in relation to the rotation center remains more moisturized.

When studying the test pieces sized 250\*40\*10 mm and having the average initial humidity of 65%, the following data have been obtained. According to the experiment results, the 30% humidity was achieved in 70 min. Further rotation of the samples in the drum did not lead to any essential change in humidity. During this time span, the weight of the test pieces being dehydrated changed from 65 g to 53 g. Thus, the weight loss was 12 g, which amounts to 18% of the initial weight. In this case, the dehydration speed was 0,17 g/min.

According to the preliminary experiment findings, the conclusion has been made that humidity indicators have to be controlled not as soon as the centrifuge rotation is stopped but after a while. During rotation under the action of centrifugal forces, moisture moves through the wood porous space toward the external board face, as a result of which it remains constantly moisturized. So, for leveling out moisture within the volume of the sample under study, a waiting time span has to be allowed.

The research has shown that more intensive dehydration occurs in samples with a larger board face area and smaller thickness than in narrower samples having a greater thickness. As for the test pieces with equal face width, dehydration occurs at a slightly more intensive rate in samples having a smaller thickness in the radial direction in relation to the rotation center.

The experimental study conducted has shown the centrifugal method to be promising both for impregnation of wood by special modifying compounds and for dehydration of timber up to 30%. If required, further dehydration up to lower humidity values can be performed by the conventional method, for example, in a drying chamber.

First of all, the suggested method allows reducing consumption of the impregnating compound because the impregnating compound which has not penetrated into the wood porous space and the one to be extracted from the wood during dehydration is scavenged completely and can be re-used. Secondly, impregnation and dehydration are performed in one and the same plant, and no further operations to reposition the timber being treated are required in the process. Thirdly, this method is energy-efficient because considerably less power is needed for rotating the drum as compared to the conventional thermal dehydration method in which the drying chamber is heated by a heat medium.

## 5 Conclusion

Research shows that at present, in spite of numerous and many-year studies and developments, the operations of wood drying and impregnation remain quite power-consuming, and both the equipment and technologies used in the operations need improving.

Wood is known to contain two kinds of moisture: the first one, the free moisture, is that found in spaces between cells and their cavities; the second kind is the bound moisture, the one sitting in the cell walls.

When dehydrating up to the humidity of  $12 \pm 3\%$ , both free and bound moisture have to be taken out from the sawn wood. Removal of the bound moisture is significantly more challenging; using the centrifugal dehydration method to remove the bound moisture is not expedient due to the long duration of this process.

As for the free moisture removal, the centrifugal method has demonstrated its high efficiency, and it is expedient to use for dehydrating the hyper-humid timber, e. g., green or saturated with the impregnating compound. Meanwhile, the energy-efficient method of impregnation of wood is impregnation in centrifugal plants with the subsequent dehydration to the humidity of 30% in the centrifugal force field.

The conducted study of the impregnation and dehydration processes using the described design plant which allows carrying out the said two processes without repositioning the blanks has shown the promising outlook of the use of centrifugal method for these two operations in processing the construction and engineering sawn timber of small cross-sections.

Impregnating and subsequently dehydrating wood in centrifugal plants without repositioning the blanks allows enhancing the impregnation process efficiency by reducing the labor consumption of the process, as well as the equipment idle time associated with repositioning operations.

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