

AGE AND LEVEL OF EDUCATION AS DETERMINANTS OF INTEREST IN INFORMATION/COMMUNICATION TECHNOLOGIES AND COMPUTER SKILLS IN THE CONTEXT OF SENIOR EDUCATION

^aADRIANA RÉCKA

*Constantine the Philosopher University, Faculty of Education,
Department of Creative Arts and Art Education, Dražovská 4,
949 74 Nitra, Slovakia
email: ^aarecka@ukf.sk*

Abstract: The paper deals with the digital literacy of students attending the University of the Third Age in Nitra. It brings together partial results of the research the author conducted in the summer semester of the academic year 2012-2013 and focuses on the aspects of age and the degree of education as determinants of interest in ICT and computer skills in the context of the education of seniors. The research sample consisted of participants of two study programmes supervised by the Faculty of Education of Constantine the Philosopher University in Nitra: 40 students in the History of Fine Arts and Creative Art activities study programme under the Department of Creative Arts and Art Education and 34 students enrolled in the Folk Crafts study programme carried out by the Department of Technology and Information Technologies.

Keywords: digital literacy, age, level of education, seniors

1 Introduction

Digital literacy is an indispensable competence of contemporary man. The importance of this issue is, inter alia, illustrated by the fact that since 2005, the Institute for Public Affairs in Bratislava has regularly monitored the topic of digital literacy and informatization of society through sociological surveys which are representative of the entire population of the Slovak Republic over 14 years old in terms of gender, age, education, nationality, size of cities and regions of the Slovak Republic. The research was conducted in 2005, 2007, 2009, 2011 and March 2013. Other research results were published in the publication Velšic, Marián: *Digitálna gramotnosť na Slovensku 2013. Správa z výskumu* (eng. *Digital Literacy in Slovakia 2013. Research report*). Bratislava : Inštitút pre verejné otázky, 2013. 15 pgs. ISBN 978-80-89345-40-3. This publication defines digital literacy as "the ability to understand and use information in different formats from different sources presented by modern information and communication technologies (ICT)" (Velšic, M., 2013, p. 2). Digital literacy is a competence which is also considered relevant within the "Recommendation of the European Parliament and of the Council" of 18 December 2006 on key competences for lifelong learning (2006/962/EC). The appended document "Key Competences for Lifelong Learning – A European Reference Framework" sets out eight key competences, including the development of digital competence. We consider the development of digital competence to be of paramount importance in the context of the education of seniors within the University of the Third Age at Constantine the Philosopher University in Nitra. There is a wide variety of possibilities for using ICT in the implementation of the History of Fine Arts and Creative Art Activities study programme. It can be incorporated into the field of visual education in a theoretical as well as a practical and creative context.

1.1 Theoretical background

The theoretical basis for us were the documents Velšic, Marián: *Digitálna gramotnosť na Slovensku 2013. Správa z výskumu* (eng. *Digital Literacy in Slovakia 2013. Research report*). Bratislava : Inštitút pre verejné otázky, 2013. 15 pgs. ISBN 978-80-89345-40-3 and the document "Recommendation of the European Parliament and of the Council" of 18 December 2006 on key competences for lifelong learning (2006/962/EC). (Available at: <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2006:394:0010:0018:sk:PDF>).

2 Age and level of education as determinants of interest in information/communication technologies and computer skills in the context of senior education

2.1 Research objectives

The research objectives were to find out which competences the students of the University of the Third Age have in ICT via their self-assessment and to find out how they have developed their digital literacy. Our aim was also to find out whether they use computers in their free time or jobs and what they use computers for. The findings were analyzed from the aspects of age and the level of education of the respondents, searching for the relations between these indicators and the respondents' interest in ICT and computer skills. We also wanted to identify the study participants' interest in educational activities in which computer or digital technologies are used.

2.2 Research hypotheses

We assumed that in our respondent group:

1. There would be more students who acquired their ICT skills informally or recreationally than those who acquired their digital literacy institutionally and formally.
2. There would be more students who use computers in their spare time or jobs than those who do not use computers.

2.3 Research plan and research sample

Our research sample consisted of 74 respondents. 40 study in the History of Fine Arts and Creative Art Activities study programme taking place within the University of the Third Age in Nitra in the Department of Creative Arts and Art Education at the Faculty of Education of Constantine the Philosopher University in Nitra. The other 34 students fall under the Folk Crafts study programme offered by the Department of Technology and Information Technologies at the Faculty of Education of Constantine the Philosopher University in Nitra in the academic year 2012-2013. Of the total number of the respondents (74), 68 (92 %) were women and 6 (8 %) were men.

2.4 Research methods

The data collection method we used was an anonymous questionnaire with closed questions and scaling options in each item as well as open questions with the possibility to develop responses. The questionnaire included 10 items on general information about the respondents in reference to their age, sex, residence district, level of educational attainment and employment status. Our main aim was, of course, to find out how our respondents – students at the University of the Third Age – evaluate their own computer skills, how they acquired these skills, how they use them and what their attitude is towards further education using ICT. The questionnaire consisted of single as well as multiple choice questions. The research was carried out during the summer semester of the academic year 2012-2013. The method of data processing was a quantitative and qualitative analysis of the responses from the questionnaire reflected in the table or verbal interpretation of responses as well as verification and evaluation of hypotheses. Although the results of the findings are presented in tabular form separately for each of the study programmes, our goal was not to examine the differences between the respondents of the two programmes. We analyze the research sample mainly as a whole and only when we find striking differences in quantitative aspects do we compare the study programmes between themselves.

3 Research results

Our research results have some interesting findings. Given the limited scope of this paper, we analyze the results only partially, indirectly referring to some of the findings of the items that are not detailed herein. The results in tabular form are also presented only partially due to the limited scope of this paper. Abbreviations are used in the text and the tables in order to designate the study programmes – HFA for the History of Fine Arts and Creative Art Activities and FC for Folk Crafts.

Table 1
Characteristics of the research sample in terms of age

Students' age	HFA group	FC group	Total
a) Between 40 and 44 years	1 (2.5 %)	1 (2.9 %)	2 (2.7 %)
b) between 45 and 49 years	3 (7.5 %)	3 (8.8 %)	6 (8.1 %)
c) between 50 and 54 years	5 (12.5 %)	6 (17.7 %)	11 (14.9 %)
d) between 55 and 59 years	5 (12.5 %)	3 (8.8 %)	8 (10.8 %)
e) between 60 and 64 years	14 (35.0 %)	11 (32.4 %)	25 (33.8 %)
f) between 65 and 69 years	8 (20.0 %)	7 (20.7 %)	15 (20.3 %)
g) between 70 and 74 years	4 (10.0 %)	1 (2.9 %)	5 (6.8 %)
h) between 75 and 79 years	0	1 (2.9 %)	1 (1.3 %)
i) between 80 and 84 years	0	0	0
j) between 85 and 89 years	0	1 (2.9 %)	1 (1.3 %)
Total	40 (100 %)	34 (100 %)	74 (100 %)

Source: Own arrangements

The age of our respondents is between 40-89 years. Taking into account the general interpretation of the "third age" as a period of post-productive age, the functioning of the "University of the Third Age" in Slovakia appears to be in conflict with the name of the educational institution. The age limit of candidates (as well as the tuition fee) is different in each Slovak university. The aim of this paper is not to examine the differences in the age limit for applicants to study at the University of the Third Age, but still we find interesting facts in a cursory comparison of the conditions for admission to study at the universities in the Czech Republic and Slovakia from the viewpoint of the applicants' age. Applicants to the majority of Czech universities have the following as conditions for studying at the University of the Third Age: reaching the retirement age within the meaning of retirement pension (e.g. Charles University in Prague, Masaryk University in Brno, and others), being on a disability pension before reaching senior status (e.g. the University of Economics in Prague) or applying upon reaching the age limit of 55 years (e.g. Jan Evangelista Purkyně University in Ústí nad Labem) or

50 years (e.g. Palacký University in Olomouc, Silesian University in Opava). Compared to the Czech Republic, Slovakia's age limit is extremely low. To illustrate, let us quote a few examples: the minimum age was ascertained, for example, in the case of the Technical University in Košice, the University of Trnava (in Trnava) and Matej Bel University in Banská Bystrica, where the condition of admission to the University of the Third Age is being at least 40 years old. Both Nitra Universities – Constantine the Philosopher University in Nitra and the Slovak Agricultural University in Nitra – stipulate that the applicants' age must be over 40 years in the case of women and over 45 years in the case of men. The Slovak Technical University in Bratislava prescribes the age minimum of 45 years for women and 50 years for men, the University of Prešov uniformly sets it at 45 years, and Comenius University in Bratislava also consistently sets it above 50 years. Among the Slovak universities offering education within the University of the Third Age, the maximum age limit of 55 years is established by the University of Žilina in only one study programme – Man and the Computer – apparently for the great interest of younger and older aspirants. In all other study programmes, the age minimum for admission has been set at 45 years.

Expressed in percentages, 36.5% of our respondents are in the age range of 40-59 years old and 63.5% of our respondents are over 60 years old (see Table 1). It is interesting for us to find that more than half of the current students are over 60 years old. During the research conducted with the University of the Third Age students of our department a few years ago (in the academic year 2008-2009), the author of this paper found out that of the total number of respondents (28) at that time, more than half were less than 60 years old – up to 20 (71.5%) students (Réčka, A., 2009).

Table 2
Respondents' level of educational attainment

Students' highest educational attainment	HFA group	FC group	Total
a) secondary	15 (37.5 %)	18 (52.9 %)	33 (44.6 %)
b) higher	25 (62.5 %)	16 (47.1 %)	41 (55.4 %)
Total	40 (100 %)	34 (100 %)	74 (100 %)

Source: Own arrangements

A completed secondary education with a school-leaving examination is the condition of admission to the University of the Third Age. It is therefore natural that the level of educational attainment of our respondents is higher than the current average. Surprising to us, however, is the large percentage (62.5%) of respondents with higher education in the HFA group as well as in the FC group (47.1%). If we compare these findings with the research group in 2009 mentioned above, we find that of 28 respondents, 8 (28.6%) had higher education and the remaining 20 (71.4%) had just a secondary education (Réčka, A., 2009).

Table 3
Characteristics of the research sample in terms of employment

Characteristics of the respondents in the context of responses in terms of their employment	HFA group	FC group	Total
a) I am retired and I currently do not work, I am not employed	26 (65.0 %)	21 (61.7 %)	47 (63.5 %)

b) I am retired but I still work, I am employed full-time	0	0	0
c) I am retired but I still work, I am employed part-time	2 (5.0 %)	2 (5.9 %)	4 (5.4 %)
d) I have not reached retirement age and I am employed	7 (17.5 %)	6 (17.7 %)	13 (17.7 %)
e) I have not reached retirement age and I am a freelancer	0	2 (5.9 %)	2 (2.7 %)
f) I have not reached retirement age and I am employed part-time	1 (2.5 %)	0	1 (1.3 %)
g) I have not reached retirement age but I do not work, I am unemployed	2 (5.0 %)	0	2 (2.7 %)
h) I am a disability pensioner and I am not employed	1 (2.5 %)	3 (8.8 %)	4 (5.4 %)
i) I am a disability pensioner and I am employed	1 (2.5 %)	0	1 (1.3 %)
Total	40 (100 %)	34 (100 %)	74 (100 %)

Source: Own arrangements

Table 4
Respondents' level of computer skills based on their self-assessments

Students' skills in ICT according to their own assessment	HFA group	FC group	Total
a) I am a competent beginner on the computer	13 (32.5 %)	8 (23.5 %)	21 (28.4 %)
b) I have good skills using the computer	17 (42.5 %)	19 (55.9 %)	36 (48.6 %)
c) I have excellent skills using the computer	6 (15.0 %)	4 (11.8 %)	10 (13.5 %)
d) I do not master working on the computer at all, but would like to have some skills	3 (7.5 %)	2 (5.9 %)	5 (6.8 %)
e) I have no command of the computer	1 (2.5 %)	1 (2.9 %)	2 (2.7 %)

and it does not bother me			
Total	40 (100 %)	34 (100 %)	74 (100 %)

Source: Own arrangements

Table 5
The methods through which respondents acquired digital competence

ICT skills acquisition method	HFA group	FC group	Total
a) I acquired computer skills during my secondary and/or higher studies	3 (7.5 %)	3 (8.8 %)	6 (8.1 %)
b) I took a course focused on the use of a PC	12 (30.0 %)	9 (26.5 %)	21 (28.4 %)
c) I absorbed computer skills at work as part of work performance	11 (27.5 %)	14 (41.2 %)	25 (33.8 %)
d) I completed my studies at the University of the Third Age (UKF) focusing on information technologies	4 (10.0 %)	8 (23.5 %)	12 (16.2 %)
e) I have acquired skills thanks to the technical assistance of my family members and friends	16 (40.0 %)	7 (20.7 %)	23 (31.1 %)
f) I am self-taught in computers - I have acquired skills on the basis of self-study of literature and trying out PC options	9 (22.5 %)	1 (2.9 %)	10 (13.5 %)

Source: Own arrangements

By way of item number 7 in our questionnaire, in which students were able to select more possibilities, we investigated our respondents' ICT skills acquisition method. We bring together the results in tabular form (see Table 5). As stated above, our aim in this study was not to examine data and then make a two study programme comparison; nevertheless, we consider it interesting to bring together some of the findings on this subject. A relatively high percentage (41.2%) of the students in the Folk Crafts study programme marked option c) I absorbed computer skills at work as part of work performance. We were interested in which sector or field our students work or worked and which age group they represent. Of the 14 respondents, all are women, 7 with secondary education and 7 with higher education. 4 of these respondents are from the age group of 40-49 years. The others are from the age group of 50-54 years (4), 55-59 years (1), 60-64 years (4), and 65-69 years (1). 5 respondents have a degree in economics, 3 have a degree in agriculture, 2 have a degree in health, and the other 2 have a degree in pedagogy. 1 respondent completed secondary education in the field of clothing, 1 respondent completed grammar school and stated that he was self-employed. In the group of students in the History

and Art Education programme, 11 respondents chose option c), 10 women and one man. Of these, 5 respondents have higher education and 6 respondents have secondary education. Two respondents with secondary education are in the age group of 45-49 years and the other age groups are represented as follows: 50-54 years (3), 55-59 years (1), 60-64 years (3), 65-69 years (2). In this group, there are respondents with an economics degree (2), a pedagogical degree (2), an agricultural degree (1), and there is a pharmacist (1), a doctor of veterinary medicine (1), a chemist (1), a baker - confectioner (1), a surveyor and cartographer (1), and 1 respondent with construction education. Our findings indicate that the participants whose professions entail the use of ICT skills get highly motivated and involved in digital literacy even though they were not trained in information technology during their secondary or higher education studies. It is also interesting to note that our respondents who marked option c) in item 7 did not rely solely on their employer when acquiring ICT skills, as 14 of them (both HFA and FC groups) identified other options too: a) – 1, b) – 4, d) – 3, e) – 6, f) – 3. Of those who marked three options within this item are three students from the HFA group marking f) as one of the options and 1 respondent who is a student from the FC group. In item 7, the percentage of responses for options b) – 30% and e) – 40% are also an interesting finding to consider in the group of HFA respondents. A striking difference between the HFA and FC groups lies particularly in options e) and f), which show both the social environment of the respondents providing the appropriate conditions to develop their ICT skills and, obviously, the respondents' strong intrinsic motivation for self-study. In item 7 in the HFA group, 9 (22.5%) respondents marked option f) I am self-taught in computers, I have acquired skills on the basis of self-study of literature and trying out PC options. We were interested in getting more detailed information about the respondents who answered like this. Of 9 respondents (3 men and 6 women), 2 have secondary education and 7 have higher education. All three men have a university degree and are over 60 years old, belonging to the following age groups: 60-64 (1), 65-69 (2). One of them is a doctor of veterinary medicine, one is an economist and one has a pedagogical education. The women of this group are over 50 and belong to the age groups as follows: 50-54 (2), 55-59 (1), 60-64 (1), 65-69 (1), 70-74 (1). Two of them are pharmacists, one has a degree in computer science and library science, and one has a degree in teaching. The two secondary-educated women in this group attended a chemistry secondary school and a bakery and confectionary secondary school. One respondent from the FC group who marked option f) in item 7 attended a health care secondary school and belongs to the age group of 65-69 years old.

The results in item 7 are also interesting from another aspect. Of the total number of 40 respondents in this group, 30 (75%) declared that they acquired their ICT skills via an official institution – options a), b), c) and d). In the FC respondent group, digital literacy thus declared is even a bigger surprise for us. Of the 34 respondents in this group, 34 (100%) marked at least one of the options indicating that they acquired ICT skills through institutional education. Naturally, the results of our findings – given the focus of our research – do not reflect the level (quality) of the digital literacy of our respondents. It is interesting to compare our findings with the results of a representative sociological research on the topic of digital literacy and the informatization of society that was carried out by the Institute for Public Affairs in March 2013. This research, to which we referred at the beginning of this paper, had a sample of 1,079 respondents from across the Slovak population aged over 14.

The research report shows the percentage of digitally literate and illiterate people by social groups and environments. In terms of age, the author of the report considers digital literacy an important differentiating parameter among middle and older generations – at 45-54 years of age, the digital literacy in Slovakia is 88%, at 55-59 years of age, it is 73% and in the group of over 60 years old, it is 37%. According to the report, the percentage of digitally literate pensioners in the context of employment is 39%. We consider it important to give the results

in relation to other aspects of the report as well – in the context of education, 87% of the secondary school graduate group is digitally literate, and 95% of the university graduate group is (Vešić, M., 2013, p. 4). Taking into account that our respondent group consists mostly of pensioners, we can conclude that the digital literacy of students at the University of the Third Age in Nitra attending the History of Fine Arts and Creative Art Activities study programme and the Folk Crafts study programme is well above the average in relation to the Slovak average. In the HFA group, of the total number of 40 respondents, 28 (70%) are retired, and of the total number of 40 respondents, 30 (75%) declared an institutional form of ICT skills acquisition.

In this group, 4 (10%) indicated that they do not master computer work whatsoever. In the FC group, 23 (67.6%) out of 34 respondents are retired while 40 (100%) out of 40 respondents declared an institutional form of ICT skills acquisition. It is therefore interesting that in this respondent group, 3 (8.8%) indicated that they do not master computer work at all (see Table 4). We recall that the age of our respondents ranges from 40 to 86 years, of which 25 respondents belong to the age group of 60-64 years, 15 are included in the age group of 65-69 years, 5 fall in the age group of 70-74 years and 1 respondent is in the age group of 85-89 years. 63.5% of our respondents are more than 60 years old (see Table 1).

Our first hypothesis was not confirmed. We assumed that in our respondent group there would be more students who have acquired their ICT skills informally or recreationally than those who acquired digital literacy institutionally or formally. The finding that 70 (94.6%) participants of the University of the Third Age out of 74 respondents picked up their ICT skills institutionally – in view of the research sample age composition – surprised us.

Table 6
Respondents' computer use in their free time or job-related area

Using the computer in your free time or workplace	HFA group	FC group	Total
a) The computer is an indispensable working tool (Word, Excel, Internet, etc.)	13 (32.5 %)	9 (26.5 %)	22 (29.7 %)
b) I use the computer to communicate with my family and acquaintances (via social networks, Facebook, Skype, e-mail, etc.)	29 (72.5 %)	24 (70.6 %)	53 (71.6 %)
c) I use the computer in education and cultural activities (e.g. targeted information retrieval through Wikipedia, web lexicons, viewing works of art in virtual galleries, etc.)	23 (57.5 %)	17 (50.0 %)	40 (54.0 %)
d) I use the computer to	15 (37.5 %)	14 (41.2 %)	29 (39.2 %)

	archive and edit photos			
e)	I use the computer to obtain current important information (departures of bus lines, theatre or cinema programmes, news, weather, etc.)	20 (50.0 %)	20 (58.8 %)	40 (54.0 %)
f)	I use the computer for shopping online	9 (22.5 %)	9 (26.5 %)	18 (24.3 %)
g)	None of the previous options have been marked	5 (12.5 %)	1 (2.9 %)	6 (8.1 %)

Source: Own arrangements

Within the item focused on the use of ICT in respondents' free time or jobs, we obtained the following results: option a) the computer is an indispensable working tool (Word, Excel, Internet, etc.) was marked by 22 (29.7%) respondents, option b) I use the computer to communicate with my family and acquaintances (via social networks, Facebook, Skype, e-mail, etc.) was chosen by 53 (71.6%) respondents, option c) I use the computer in education and cultural activities (e.g. targeted information retrieval through Wikipedia, web lexicons, viewing works of art in virtual galleries, etc.) was selected by 40 (54.0%) respondents, option d) I use the computer to archive and edit photos was marked by 29 (39.2%) respondents, option e) I use the computer to obtain current important information (departures of bus lines, theatre or cinema programmes, news, weather, etc.) was identified by 40 (54.0%) respondents, and option f) I use the computer for shopping online was chosen by 18 (24.3%) respondents. Of the total number of respondents, 6 (8.1%) students did not respond at all within this item, i.e. none of the options above were selected.

Our second hypothesis was confirmed, and the results surprised us. Given the respondents' age range, we did not expect such a high frequency of responses in each item. It can be concluded that the students in the Folk Crafts study programme use their digital skills more in practical areas than in education. Conversely, the students in the History of Fine Arts and Creative Art Activities study programme take advantage of the computer mainly in the workplace, educational and cultural activities, and to communicate with their family and friends.

Table 7

Respondents' interest in innovating the educational process by using ICT

Provided that you are given the possibility to use a computer within the lectures at the University of the Third Age (each student would be provided a PC within the lectures to search information and to perform	HFA group	FC group	Total

creative art activities on the computer under the guidance of the teacher), would you welcome this?			
a) definitely	23 (57.5 %)	15 (44.1 %)	38 (51.4 %)
b) most probably	4 (10.0 %)	3 (8.8 %)	7 (9.4 %)
c) yes	6 (15.0 %)	10 (29.4 %)	16 (21.6 %)
d) no	1 (2.5 %)	2 (5.9 %)	3 (4.0 %)
e) probably not	5 (12.5 %)	2 (5.9 %)	7 (9.5 %)
f) certainly not	1 (2.5 %)	0	1 (1.4 %)
g) no answer	0	2 (5.9 %)	2 (2.7 %)
Total	40 (100 %)	34 (100 %)	74 (100 %)

Source: Own arrangements

The last item in our questionnaire reflects our respondents' interest in the innovation of the learning process by using ICT. It is gratifying that 61 (82.4%) of the total number of respondents expressed themselves positively in this regard. It is particularly pleasing to see that 23 (57.5%) marked option a) definitely in the HFA respondent group, as this study programme offers a wide variety of interesting forms of education related to electronic media and digital technology that entail certain digital competences.

4 Conclusion

In conclusion, it may be stated that owing to the currently large expansion of ICT, the educational environment of the University of the Third Age at UKF cannot avoid the modernization of teaching nor the application of innovative methods and forms. However, digital literacy is a must on the participants' part within this type of study. Through our research, we found out that age does not play a significant role in the context of interest in ICT and computer skills, resulting in even the members of the middle and older age groups showing an active interest in digital competence acquisition. Educational level is, however, a key determinant in the context of interest in digital competence. Those possessing secondary or higher education, while taking an interest in various forms of lifelong learning, consider digital literacy essential and an obvious competence of contemporary man, regardless of their age.

Literature:

1. *Recommendation of the European Parliament and of the Council of 18 December 2006 on Key Competences for Lifelong Learning* (2006/962/ES). Official Journal of the European Union. L 394/10. SK. 30.12.2006. [online]. [cited on 20/04/2013]. Available at: <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2006:394:0010:0018:sk:PDF>.
2. Récka, A. *Pedagogické, psychologické a sociologické aspekty štúdia predmetu Dejiny výtvarného umenia v rámci univerzity tretieho veku*. In ŠKODA, J., DOULÍK, P., edit. *Pomáhajúci profesie v reflexii aktuálnych spoločenských proměn*. Ústí nad Labem : PF UJEP, 2009. p. 180 –186. ISBN 978-807414-123-2.
3. Veľšic, M. *Digitálna gramotnosť na Slovensku 2013. Správa z výskumu*. Bratislava : Inštitút pe verejné otázky, 2013. 15 p. ISBN 978-80-89345-40-3.

Primary Paper Section: A

Secondary Paper Section: AM