INFORMATION TECHNOLOGY AND SENIORS

Jakub Pikna[1], **Nikoleta Fellnerova**[2], **Michal Kozubik**[3]

Abstract:

Goal: This article focuses onthe relationship between information technologies and theiruse by senior citizens. The main objective of the research is to identify the problems that encompasssenior citizenuse of information technologies.

Methods: The research sample consisted of 5 participants aged 62 years to 66 years, from which 2 participants were women and 3 were men. The research method used was a semi-structured interviews of own design.

Results: The largestbarrier between information technology and senior citizens is its modernization which puts a pressure on the education of seniors in this area of technology. Communication via internet or telephone with remote family members has been shown to have a positive effecton the lives of seniors, which in turn reduces barriers between seniors and society. An important finding was that all participants in the research samplewereinterested in further development of their understanding in these areas, but lackededucational opportunities.

Conclusions: We concludethat themajorproblem faced by senior citizens is the rapid advancement of modernization of information technologies, which leaves the means to educate seniorspredominantly the responsibility of family members. In the future it would be appropriate to corroborate our findings with a higher number of participants, for example in a social services home, which could bring further new insights into our results regarding the opportunities of education for senior citizens.

Introduction

Our research, which deals with the topic of information technologies as a factor of social stimulation of seniors is unique in that it is the first one in Slovakia and is a contribution to the area. The research offers us an image of demographic aging in Slovakia, the education of seniors, use of information and communication technologies. It further shows the utilization of the internetin the form of filling leisure activities of seniors and also aides in their communication with family members or friends.

Demographic aspects of aging in Slovak republic

The basic presumption for successfully managing the process of global population aging is "*knowledge of the level and pace of population aging in Slovakia and socio-economic status of society. The situation is all the more serious that the reach of demographic changes, mainly in the area of social services, health care, infrastructure and the labor market, needs to be addressed at a time of financial crisis that negatively affects public finances. Population aging represents one of the biggest challenges of the 21st century which will irreversibly affect all spheres of society's functioning. Despite the fact that, at present the aging of Slovak population is not yet perceptible, the evolution of aging process of the population points to an acceleration of the population aging process in Slovakia. The retirement age reaches strong post war years and at the age of highest fecundity (physiological fertility) there are fewer age groups born in the first half of the 1990s*"(Národný program aktívneho starnutia na roky 2014 – 2020).

Also, according to the aforementioned program, the ratio between the number of persons in productive age 15 – 64 years (71, 5 % in 2012), the number of persons in pre-productive age (15, 4 % in 2012) and post-productive age (13, 1 % in 2012) in Slovakia is currently still relatively favorable. It is, however, a temporary situation asin the next few years the ratio between people in productive age, post-productive age and pre-productive age will change. Many generations of men and women born in the latter half of the 1940s and 1950s are gradually transitioninginto the post-productive age, which in turn will change the proportion between the productive and post-productive component of the Slovak population over the next decade. The shift in the number of men and women over the age of 50 will

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[1] Constantine The Philosopher University in Nitra, Faculty of Social Sciences and Health Care, Department of Social Work and Social Sciences, Slovakia, jakub.pikna93@gmail.com

[2] Constantine The Philosopher University in Nitra, Faculty of Social Sciences and Health Care, Department of Social Work and Social Sciences, Slovakia, nikoleta.fellnerova@ukf.sk

[3] Constantine The Philosopher University in Nitra, Faculty of Social Sciences and Health Care, Department of Social Work and Social Sciences, Slovakia, mkozubik@ukf.sk

significantly contribute to the rise in the number of elder people on the labor market. The decrease of population can moderate migration. However, the accelerated aging process does not seem to have any significant impact.

The beginnings of seniors' education

The first wide approach to provide educational opportunities for senior members of population can be considered in the year 1973, when the first university of the third age (UTA), sometimes also called the "University for seniors" was established in the French city of Toulouse. The University's program was designed to create a second life program for seniors. Seniors would apply for various reasons whether they wanted to study, if different circumstances prevented them from doing so previously in life, or because they wanted to further improve in their original or other expertise. Initially, the study program was conceived only as a system of selected lectures for given groups of students, but was later extended to the possibility of obtaining a full-time higher education at any age including a corresponding diploma (Haškovcová, 2010). University development continued in other countries such as Belgium, Spain and Poland. These developments lead to the year of 1993 beingdeclared as the year of the universities of the third age.

Education in the Slovak republic started to develop first in the form of lectures organized in retirement clubs or various cultural institutions. The first Academy of the Third Age in Slovakia was originated in Malacky in 1985. *"The first experiences with UTA (University of the third age) lead to the following conclusions:*

- *General education of adults can satisfy the need for elder people to learn. It is doubtful whether the empirical and intelligent potential of this group is being used. This potential can be used in cooperation with young people's research, work teams of young peoples or in solving tasks where the expertise of a lifetime and professional experience can contribute to the solution,*
- *The formation and development of UTA have shown surprisingly great activity, initiative and organizational skills in elder people. Motivations to study in elder college students are most commonly the following"* (Hegyi, Krajčík, 2006)*:*
  - o *Monitoring of specific material interest (including the interest in aging),*
  - o *Studying the subject of area interest to which they did not have time in previous active lives,*
  - o *Closing the deficit in education,*
  - o *Assigning theoretical knowledge to previous practical knowledge,*
  - o *The desire to preserve spiritual mobility,*
  - o *The need for communication, especially with young people,*
  - o *Obtaining a prestige associated with the university name,*
  - o *Need for self-reflection, searching for new orientations and tasks,*
  - o *Qualified and qualifying training for these new tasks.*

Forms of senior age education

In the 1950s the discipline of gerontopedagogy (gerontogogy), which is an intergral part of andragogy, the science of education and adult education, first emerged.Klevetová (2008) defined gerontopedagogy in her book as a science which, in narrower sense, deals with the education and training of seniors in old age.She seeks to find ways to prepare an individual for the final stage of their life. It can be assumed, that the development of this discipline will expand in the coming years.

Hill (2004) states that with age comes the growth of crystalline intelligence, which is related to acquired knowledge dependent on the achieved education of a given individual. At the same time he points to the the concept of fluid intelligence, which is inherited and connected with the structure of the central nervous system, as decreasing. The aim of senior education is, in a sense, to cultivate one's time. Seniors' education has to fulfill a number of less important functions. It positively influences the aging process and the quality of life, develops the mental power of seniors, promotes cultivated content of leisure time and actively involvesseniors in the workings of society. No one should be excluded from society, not even elder people (Haškovcová, 2012).

We describe the activity of the partners which we collaborate with. There are several international organizations which take care of the quality of senior education:

AIUTA – International Association of the Universities of the Third Age. Its administrative seat is the University of Social Sciences in Toulouse (France). AIUTA was founded in 1977 and it aims to

improve the living conditions of elder people through education. It further supports the establishment of UTA throughout the world, takes care of members' contactsand supports developmental interests including regional onesthatconcern the education of seniors (Andromedia, 2002).

EFOS – European Federaton of Older Students at universities. It is an international association based in Brussels with a branch office in Vienna. It was formed for the purpose of creating a platform for the exchange of experiences with the organization of activities in the field of educating seniors as a part of lifelong education (Institut celoživotního vzdělávání, 2016).

Information and communication technologies (ICTs)

Information and communication technologies (ICTs) are technologies that enable electronic recording, storage, search, processing, transmission and dissemination of information. It is therefore a combination of information technology (and technique) and communication technology (Glosár, 2008). The history of the term „information and communication technologies" dates back to 1980. According to Burger (2006), Alvin Toffler was one of the first people to deal with this term as he consistently references it in his book "*TheThird Wave*", where he analyzed the development of human society. The development of ICTs in Slovakia took place through the representation of our country by various well-known personalities such as Aurel Stodola, Štefan Banič, Milan Rastislav Štefánik and Jozef Murgaš. Jozef Murgaš is known to have laid the foundations for wireless transmission and mobile communications. It should be noted that every area of human activity and ICT is evolving and changing over time. Current trends in development are leading to an increased customer-oriented and personalized solutions. Mobile applications and the infiltration of the internet is increasingly present in ordinary aspectsof both work and private spheres of human activity. The internet is becoming the internet of everything, as it moves from personal computers (PC) and mobile devices to televisions (TVs), smart appliances and cars. ICTs are an integral part for the efficient function of all departments and government institutions. Without their help the public services, academia, military and health carewould be significantly impaired andunable tofunction at current standards(Informačno-komunikačné technológie, 2014).

At present, more than ever, the most serious problem for the elderly is the isolation and loneliness of the surrounding world, the lack of interpersonal relationships and communication with others. Therefore, ICTs have long been the domain of the younger and middle generations. Seniors who get advice from their relatives or undertake a computer course designed specifically for them, the more they overcome these barriers. The younger generation often has the impression that the modern technology of today's world does notconcern seniors because they lack the necessary skills and knowledge to understand it. (Pikna, 2015).

Methods

We set the main goal of the research and established research question from studied literature. Based on this theoretical background we set up the research questions for the interview, which was used as our data collection tool. After constructing our question we addressed theparticipants in the sample group. The interview consisted of three sets of questions with the first set of questions devoted to identifying the ICTs the seniors used and how often they used them. The objective of the second set of questions was to identify the advantages and disadvantages of using ICTs. The third set of questions was aimed at identifying for the reasons for using ICTs.

Table 1: Brief characteristics of the respondents					
Name	**Sex**	**Age**	**Education**	**Employment (former or current)**	**Marital status**
Mária	Female	66	Secondary education	Nurse	Married
Peter	Male	66	Secondary education	motor mechanic	Married
Vierka	Female	65	Secondary education	nurse*	Married
Jozef	Male	62	Secondary education	Driver of an ambulance vehicle	Married
František	Male	65	Secondary education	Self employed	Widower
*current employment					
Source: Pikna, 2015					

Research sample

For the needs of our research, we thought it was right to choose a deliberate choice of subjects. The primary component of the research group were seniors. The research sample consisted of 5 participants aged 62 to 66 years and included 2 women and 3 men (Table 1).

Data collection

The goal of our research is to identify the challenges faced by seniors during the use of information technology. Based on our research annotation, we have chosen a qualitative method of data collection. We have opted for a semi-structured interview. Gavora characterizes it as conducting interviews of the researcher with the participant (participants), characterized by the direct contact with the participants. It is a face-to-face communication. The author states that "*the semi-structured interview is somewhat tied, it allows a thematic concentration, which makes the data collection more efficient that an unstructured interview. On the other hand, the fact that the researcher has a prepared content framework, but adapts the questions to the unfolding situations make it a more flexible research tool such as a structured interview*" (Gavora, 2006).

Results

The research was conducted based onsemi-structured interviews with seniors. We identified the problems faced by seniors while using information technology. The results show that most of our respondents see the necessity of modern technology today.. They also try to "walk with time" in an effor tokeep up with the younger generation. They are testing and discovering what they have not been admitted to during their youth. Knowingly, or not, ICTs affect the lives of seniors.

The beginning of using ICT in the lives of seniors

On the subject of the beginnings of ICT use, our participantshave been asked seven questions for which we have received various answers. The first question was about their thoughtsonICTs.

In short, we can summarize that most of the respondents answered that they thought about the cell phone, computer and internet.

ICT for our participants is:

„I think of it as a digital camera and a mobile phone"(Mária, 66).Peter (66) told us that he could not think of anything else but a cell phone. Mr. Jozef (63) associates ICT with the internet and mobile phones. *"When I think about ICT I think about a computer, notebook, keyboard, mouse, monitor, router and the internet"*(František, 65).

The next question was aimed to find out whether they had a computer or a laptop at home. Mária, Vierka and Jozef told us, that they had a laptop at home. Peter answered our question with*"Yes, my wife has a notebook."* František has both a computer and a laptop.

We responded to this by asking if they were aware aboutopportunities to work with aPC for the first time, whether they participated in a PC course and if there were other peers who could not work with PC.

Beginning of PC use, assistance, course attendance, knowledge about peers who could not work with PCin the area of the participant:

Mária said: "*Six years ago as a complete amateur, my elder son forced me to it. He also showed me everything, at first how to turn on and off the PC. I don't have a professional course, but my son is so erudite in this area that I have the necessary knowledge."(Mária,66).* Vierka (65) said that her work in healthcare requires an understanding of how PC's work. She attended a PC course with a lecturer because her job required it and her husband did not know how to work with PC. Peter (66) replied by saying "*I just look at the computer and dust it off*." He does notneed a course because working with PC is not tempting. He knows a lot of people who do not know how to work with PC and they do not miss it. Jozef (62) said that around 10 years ago he got to work on a PC with the assistance of his son. He did nottake any lessons and he does notknow anybody in his neighborhood who does not know how to work with PC. František (65) said that it was around 2000 in an internet café with his son's assistance. He also does n othave a professional course and he does not know anyone around in his surroundings who does not know how to work on PC.

From these answers we can determine that Mária, Vierka and František are more interested in ICTsthan Jozef and Peter. We askedfollow-up questions about how often they use the PC and how much time they spend on it. Mária (66) uses the PC every day for about three hours. Vierka (65) uses it for around two hours daily and Jozef (62) cannot work on a PC himself, hence only works on it when someone from his family is assisting him. Thus, we can see a variety of responses here, with each individual spending time on the PC as needed.

Seniors and their work with PC and Internet

In this section we focused on the general experience of seniors with PC and the use of the Internet. Here we asked the following questions: *Which PC programs do you use and what are they for? Do you use the Internet? What do you search for while using the Internet? Do you have a connection to the Internet at home or do you go somewhere else? Do you communicate with your family and friends over the Internet? What is the most common form of communication you use? Is ICT important to you or is a face-to-face contact better for you? For what purposes do you use the Internet? Does the Internet seem too complex and difficult to understand?*

Programs used by participants and what they used them for, Internet usage and Internet communication:

"I mostly use Facebook, I search for pages that interest me, and I chat with my friends and so on. I use the internet for searching for some technical information and possibilities of communication with bureau institution. I do have an internet connection at home and yes, I'm communicating with my family via the internet. Most often I use chat, skype or viber. I also use email communication. In some cases the communication through ICT is essential, but I prefer face-to-face communication in my personal life. Abstemiously I shop online, but I use the internet banking services often. The internet doesn't seem to be complicated to me at all, it is an important part of my life."(Mária, 66).

Vierka (65) uses various other programs such as skype and internet browser because her children are living abroad. Apart from communication with her family, she uses internet sparinginglysuch as to visit advertisement pages. She has her own internet connection at home and she prefers face-to-face contact but the circumstances require her to communicate through internet. She does not use the internet for other purposes.

Programs used by participants and what they are used for, Internet usage and internet communication:

Peter (66) is looking at photos with the help of his wife. Also, she helps him find interesting articles about cars. He has an internet connection at home and does not communicate through the internet at all, as he prefers personal contact. He argues that the internet may not be complicated, but he has no interest in it.

"I do not use any programs because I didn't learn to work with them. I use the internet and I search for different things, I cannot define it exactly. We have an internet connection at home. I'm communication through skype, facebook and email, but I do all that with the assistance from my family. The communication through the internet is important to me, because I have a family abroad as well. My wife uses internet banking but I don't have experience with it. The internet doesn't seem complicated to me, but the use of PC itself does." (Jozef, 62).

František (65) uses Microsoft Word as text editor and Opera as an internet browser. He has an internet connection at home and uses the internet mostly for viewing his emails and communication with relatives. He communicates viae-mails and Facebook, the social network. Even though he personally prefers personal contact, he uses electronic communications to keep in touch with friends from abroad. He also uses internet banking which he has only positive experiences with. František thinks that working with the internet is simple and is not difficult to learn.

The impact of ICT on the lives of seniors

We asked the seniors about how the ICT of today's modern world is affecting them. We specifically asked which modern technology they would not be able to function without and for what reason. Then

we asked whether they think that today's modern society would be able to live without technology. The last question we asked was whether the ICTs affect their way of lifeand if yes, in what way.

The impact of ICT on society and our participants:

"Cell phone and a camera are technologies without which I wouldn't mind. The first one serves mi for daily communication and the second one is my hobby. No, today's society wouldn't have been able to live without technology. The whole system is so interconnected that if it would be disrupted, there would be collapse and total chaos in every area. In banking, in taxation and in administration. Going back to the original system would be a step back and everything would be complicated and slowed down. ICT is a time spender but a great help and relax too.In my case, it is a necessity..." (Mária,66).

Vierka(65) replied that she would not be able to get around without a cell phone, because it is a matter of daily necessity for her. She also thinks that today's society would not be able to move on without modern technologies. With healthy usage of ICT, nothing can happen and of course it affects her life just as much as the other people's lives.

"A mobile phone is a practical thing and it is the only thing I wouldn't be able to live without. I don't know if today's society would be able to get around without technology. I didn't think about it, but there may be some way out. Does ICT have any influence on me? I will not restrict myself with anything." (Peter,66).

"I wouldn't get around without a cell phone, because I can do thanks to it a lot of things. I think that it is a very rash age and ICT is saving time. The society wouldn't be able to exist without it. There is a clear influence of ICT. They make life easier, because a lot of things can be arrange quicker than in person." (Jozef, 62).

František (65): *"I think not. The society wouldn't be able to function without modern technology. Everything is adapted for its usage. ICT influences my life by simplifying it and contributing to better foreknowledge."*

Discussion

The aim of the research was to identify the challenges faced by seniors in the use of information technologies. We have divided the main purpose of the work in three parts, which we identified as partial objectives of our research. The first partial objective was focused on identifying what ICTs are used by seniors and how often. The second partial objective was aimed at identifying the advantages and disadvantages of using ICT. The last and third partial object consisted of identifying why seniors started using ICT.

Limits

We may characterize the limits of our research from the very methods we used. We used a qualitative method in our research and we used interviews as a method of data collection. Another limitation of our research is the age of our participants and the fact that we do not recognize the views of older generations of seniors over the age of 70.

Practice recommendations

We believe that the state should further encourage and motivate elder people. The reason is so that they can try to overcome the barriers they can encounter when learning about ICTs. It is important for the elderly to eliminate the initial fear of something unknown and new. We believe that the current situation will improve dueto increasingly popular third-age universities that offer to educate in ICTs. We think that in every village and largerpopulation centers, people should have free access to a computer with an internet connection. Such an option is not readily available everywhere, especially in municipalities. Thus, this approach would lead to greater awarenessand interest to learn about ICTs. Recently, we have seen an increase in computer courses for seniors, but some of them were only conducted in one-off events by different institutions. The solution could be the involvement of qualified professionals who would be responsible for educating seniors. The most important thing would be to pique the interest of seniors and their need to learn about these new technologies. It should be noted that our research was also focused on seniors living in their own household,

howeverfor future research we would recommend to identify the accessibility of information technology, its usage and education in retirement facilities.

Conclusion

In today's modern society ICTs are constantly evolving and changing on a daily basis. For the younger generation, which is often acquainted with ICTsfrom early childhood, it is not problematic to adapt to these changes. However, it is more complicated for seniors as many of them are not exposed to ICTs during their lifetime because they do not have the opportunity. Hence, this shows that the use of ICTs is a more difficult challengefor seniors. Many times they deal with problems while adapting and getting used to new things.

The aim of our research was to identify the challenges faced by seniors while using ICTs. Based on anaysis of the results of our research we considered the main objective fulfilled. We initially investigated what ICTs are used by seniors and how often. We found out that seniors mostly use a mobile phone and a computer. They also use the internet to a high degree, where theyshare their experiences and ideas with other people on different social networks and forums.

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