NEW TECHNOLOGY IN THE PROCESS OF LIFELONG LEARNING OF WOMEN IN SERBIA

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Abstract:

Contemporary living and working environment requires the ability to find, access and present information very fast. In order to achieve all requirements every citizen must improve himself in the process of lifelong learning. In this paper we present concept of lifelong learning and new tendencies in education based on digital technologies that simplify process of adult learning. In addition, we analyze possible influence of modern technology on lifelong learning of women in Serbia. Results of the survey that we conducted suggest that unemployed women with elementary and secondary education are relatively less interested to continue education based on conventional or non-conventional methods and that they are not familiar with advanced learning tools. Having in mind that this group of women is by default the most vulnerable relative to the rest of women population, lack of ambition for lifelong learning and limited knowledge on new tendencies in education bring additional concerns about their vulnerabilities, which should be taken into account by the policy makers in order to implement policies on adult learning in more efficient and successful manner.

***Key words**: Lifelong learning, adult learning, women, Serbia, emerged technology, education*

INTRODUCTION

The 21st century is characterized by complexity and pace of change taking place in the economy, technology, culture and other areas. These changes, and the process of globalization, require adaptation in the lives of men and women. One area which is very important is learning, because it has always been a major element in the progress of human society. Until recently, education and valuable books were great privilege of a small number of people, but today the knowledge is available to everyone. Additionally, we have faced changed conditions in the environment. Contemporary living and working environment requires the ability to find, access and present information very fast. In order to achieve all requirements every citizen must improve himself in the process of lifelong learning. Rapid development and diffusion of information and communication technology has enabled significant improvements in this area.

After the preliminary notes about the concept of lifelong learning and its significance in the modern society, we present the new trend in education, according to The Horizon Report 2011 (NMC, 2011) prepared by The New Media Consortium. This annual report is the result of cooperation between EDUCAUSE Learning Initiative (ELI) and the New Media Consortium. Consortium is dedicated to the research of the application of new technology in media and education.

According to this report there are three time frames in which we can expect a significant application of certain technological invention or time of adoption. We can distinguish short time adoption, within one year or less; medium time frame, within two to three years and long time frame, within four to five years. Last research shown that the e-books and mobile devices are in the short time frame, augmented reality and game-based learning are in the medium time frame and gesture-based computing and learning analytics are in the long time frame. In this paper we will show the characteristics of all these technological innovations and show their potential impact on the learning process.

Together with that in an era of increased awareness of the social responsibility these goals are very important. United Nations are monitoring the achievement of eight Millennium Goals (UN, 2012):

Goal 1: Eradicate extreme poverty and hunger;

Goal 2: Achieve universal primary education;

Goal 3: Promote gender equality and empower women;

Goal 4: Reduce child mortality;

Goal 5: Improve maternal health;

Goal 6: Combat HIV/AIDS, malaria and other diseases;

Goal 7: Ensure environmental sustainability and

Goal 8: Develop a global partnership for development.

Improvement of education, regardless the form can progress the process and reduce the time of achievement for all millennium goals. From the perspective of

our research the Goal 3 is the most important. It is very important to ensure equal education for women and for men. Accomplishing the millennium goals is at great extent influenced by women's empowerment and equal access by women to education, health care, work and decision-making. Achievement of that goal, will assure greater possibility for other goals to be achieved.

This paper has three parts. In the first part we present the concept of lifelong learning through the prism of OECD, European Commission and UNICEF documents. Also, we make the difference between formal, non-formal and informal type of education and the significance of adult learning. Second part is dedicated to digital technology trends in education according to Horizon Reports for 2011. For each driver, electronic books, mobile devices, augmented reality, game-based learning, gesture-based computing and learning analytics we explain the impact on learning with its advantages and disadvantages. In the last, third part of the paper we present *The Education Development Strategy in Serbia until 2020* and findings of survey conducted on a sample of women in Serbia.

THE CONCEPT OF LIFELONG LEARNING

Throughout human history the way of learning is constantly changing. From the oral transmission of knowledge, over handwritten books to the printed editions, technology has changed the educational process. However, in the last fifty years, based on the inventions in information and communication technology there has been a revolutionary transformation in this field. Today it is not possible to set the precise difference between places of knowledge acquiring (school) and the places of knowledge applying (workplace), but the learning is seen as an ongoing process based on daily mutual interactions. In such environment, one has the possibility for constant improvement of the knowledge and skills. That process is called lifelong learning.

World institutions like OECD and European Commission recognized the significance of lifelong learning and that concept became a major objective for policy making in order to achieve social and economic expansion and for development of knowledge based society.

European Commission defines lifelong learning as "all learning activity undertaken throughout life, with the aim of improving knowledge, skills and competence, within a personal, civic, social and/or employment-related perspective" (EC, 2007). Lifelong learning can be viewed in its broadest sense, and then it includes acquisition and improvement of skills, knowledge, qualifications and interests of each individual. This term can incorporate studying at prestigious international universities, but also learning how to make a pie from your grandmother. Therefore, lifelong learning includes not only the formal aspects of learning contained in the school system of each country, but also all forms of written and oral transfer of knowledge or skills. The objective of learning, according to this concept, is to achieve a sufficient level of competence that would allow any individual to successfully participate in the knowledge based society.

UNESCO (2009, p. 27) in its publication *Global report on adult learning and education* drew a distinction between formal learning, non-formal learning and informal learning as forms of lifelong learning.

Formal learning is the process of acquiring knowledge in institutions (schools, colleges, universities) in which the learning is according with structured objectives and the time required to overcome the curriculum, which lead to appropriate degree at the end of education. Formal learning is the cornerstone of education in every society.

Non-formal learning is the form of education that has characteristics of both formal and informal learning. Such as formal learning, this form involves institutionalized teaching, strict objectives and time, but has not been formally identified and does not result in a degree. Main forms of non-formal learning are courses, trainings, workshops and seminars. It is significantly present in the process of continual professional development. At the end of the successfully completed course, participants often receive some kind of certificates.

The most widespread form of learning is the third one – informal learning. This form does not imply educational institutions. It is more or less spontaneously acquiring of any kind of knowledge in, for example home or work place, through interaction with other members of society. We can also recognize intentional and non-intentional sub-forms of informal learning. Process of informal learning begins with the birth and continues until the end of one's life.

The lifelong learning can be seen as a complex concept, and in that case include: adult education, knowledge work, like professional development through trainings in the workplace, home schooling, continuing education and personal learning environment (Aspin, Chapman, 2007, p. 54). In this paper, we will focus on adult learning as a form of lifelong learning.

Definition of adult learning varies but nevertheless we can consider it as phenomenon that has received particular importance in the modern environment characterized by rapid change, globalization and technological advances. It is important both on individual and on a general level. For adult individuals it provides adequate skills, which are necessary for personal or family prosperity. On a general level, it plays an important role in preventing diseases and improving the overall health, poverty reduction, environmental protection, reducing the differences between genders, etc.

According to andragogic theory (Knowels, 1980), adults are motivated to learn, self-directed, responsible, and use prior experiences as a template for learning. Andragogy is based on the assumptions that adult:

- Tend to become more self-directed as they mature;
- Have had rich life experiences;
- Want to learn and are internally motivated to do so;
- Want learning to be purposeful, practical, relevant, and immediately applicable; and
- Are more problem-centered than content-centered.

A sixth assumption was later added: Adults need to understand why they are learning a particular topic.

According to The Recommendation on the Development of Adult Education (UNESCO, 1976) lifelong education is a complete scheme with two objectives. One is the reconstruction of the existing education system, and the other one is exploiting of the educational potential in which the men and women are motivated to self-complementary knowledge. To achieve these goals the learning process needs to be expanded. The original concept which included school attendance now represents only the first phase of education, and people should continue to acquire skills and knowledge throughout their lives, with the use of all available resources. In this concept, the most important premise is to provide conditions for all people in which they are able to achieve the full development of his personality.

Adult learning is constantly evolving, under the influence of linked factors of global cultural and economic changes like (Hed&McGrew, 2000, p. 301): constant development of information and communication technology, developing of world global market, increase of people's mobility and migration and global changes in social systems and more democratic orientation worldwide. Ecclestone (1999, p.333) also find that there is a significant impact of external factors on the development of adult learning, like need for economic survival and social cohesion, as a part of idea of human capital.

European Union is also aware of the importance of lifelong learning and in the document *Adult Learning: It is Never Too Late to Learn* (2006), Commission of the European Communities emphasizes this phenomenon and its importance in overcoming challenges. This is primarily related to:

- Competitiveness. Swift progress in some countries, like China and India point out the need for quality and advanced education and trainings, as a foundation of adequate workforce supply in the labour market. According to this report (CEC, 2006, p. 3) there are some 72 million low-skilled workers in Europe, one third of the labour force, while estimates show that by 2010 only 15% of newly created jobs will be for those with low skills, and 50% of new jobs will require tertiary level qualifications.
- Demographic change. The most important demographic trend in Europe is ageing of population. The consequence of this tendency is reduced flow of young people in labour market, and results shows (CEC, p. 4) that "only one in every three persons aged 55–64 years is in paid employment, point to an obvious need to employ the full potential of adult learning with a view to increase the participation in the workforce of young people and extend that of older people". One way to overcome the weaknesses of workforce is active immigration policy, but this process requires adequate system to ensure lifelong and especially adult learning.
- Social inclusion. The third challenge is poverty and exclusion. This phenomenon is result of inadequate level of primary education, separation and isolation in rural areas, unemployment and huge number of marginalized people with reduced chances for life opportunities. Development of ICT even aggravates the situation, because a large number of adults in this population are illiterate or insufficiently trained and therefore unable to use these devices. In this case, the development of lifelong and adult learning can also significantly improve the situation.

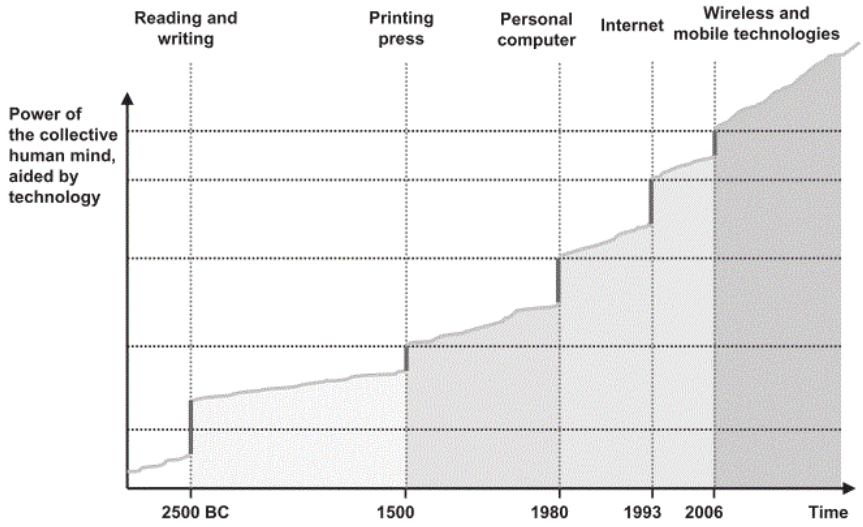
Based on the above we can conclude that lifelong learning and adult learning as a part of it plays an important role whether we look from the individual or social perspective, and has great potential which is not yet being reached.

DIGITAL TECHNOLOGY TRENDS IN EDUCATION

Implementation of digital technology facilitates and enhances many areas of human life. The educational process is also an area where the use of these technologies improves the performance of both teachers and learners. Besides that, digital technology increased the value of information-rich time and the corresponding reduction in the value of "labour-only" time. (Strain, 1998, p. 266).

The appearance and global use of the Internet and World Wide Web services provided learning opportunities that were previously impossible or even unimaginable. Fletcher et. all. (2007, p. 97) point out that digital, sharable, and reusable entities can be used for learning and are available to learners anytime, anywhere due to modern technology.

Figure 1. *Development of the collective human mind*



Source: Fischer& Konomi, 2007, p. 340.

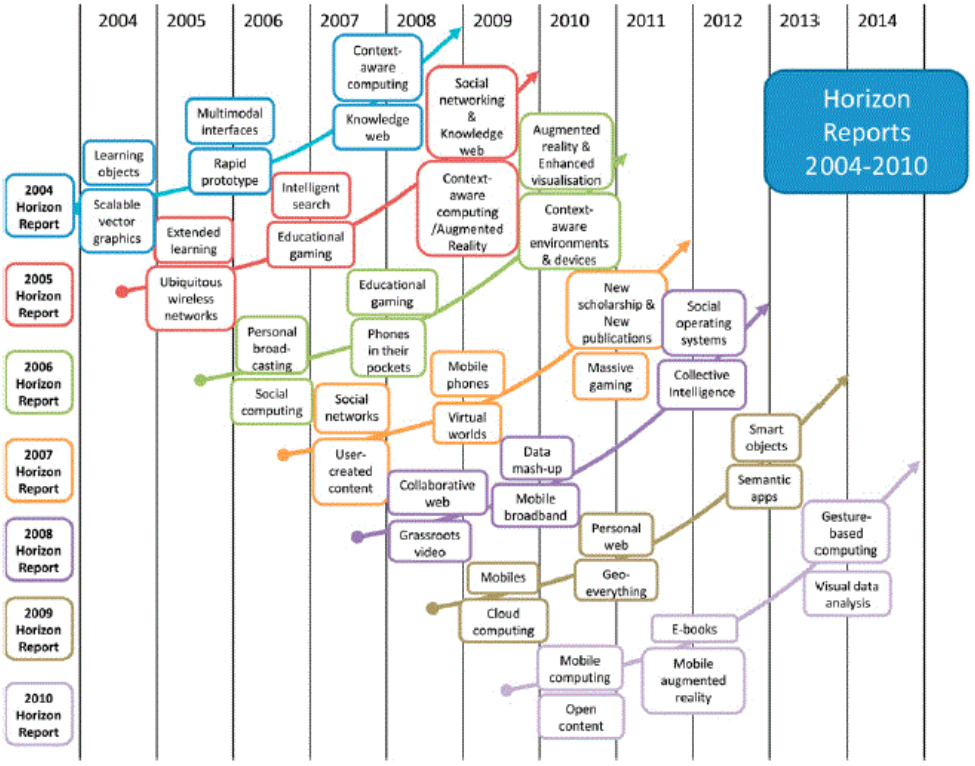
Figure 1 shows the development of the collective human mind. We can clearly notice the most important steps, from reading and writing, through printing press, up to the appearance of personal computers, Internet and wireless and mobile technologies.

Horizon Report

The Horizon Report is being prepared by The New Media Consortium. This annual report is the result of cooperation between EDUCAUSE Learning Initiative (ELI) and the New Media Consortium. The NMC Horizon Project, as the center point of the NMC Emerging Technologies Initiative, conduct research of emerging technologies for teaching, learning, research, creative inquiry, and information management. The first report was published in 2002, and since then they prepared five reports (Horizon Report: Higher Ed Education, Horizon Report: K-12 edition, Horizon Report: Museum Edition, Technology Outlook, NMC Horizon Report Press) each year.

Martin et. al. (2011) in his paper *New technology trends in education: Seven years of forecasts and convergence* introduced a chart (Figure 2) which present constant changing of technology implemented in learning over a time line, from 2004 until 2010.

Figure 2. *Impact of technologies on education according to the Horizon Reports from 2004 to 2010*



Source: Martin, et. all., 2011, p. 1895.

From Scalable vector graphics and Knowledge webs in 2004, through Intelligent search, Phones in their pockets, up to Social networking, Cloud computing and visual data analysis in 2010, technology always had an impact on learning process. In this paper we will present the key trends in this area according to the 2011 Report.

Key technological trends and their implications to the learning process

The Report presents six key trends divided into three groups according to adoption time. On the near-term horizon, within one year or less the key trends are Electronic books and Mobiles. Mid-term horizon covers period of two to three years and Augmented reality and Game-based learning are the main trends. The longest horizon implies a period between four to five years and Gesture-based computing with Learning analytics are the key representatives.

Electronic books (e-books, eBooks, digital books)

Electronic books are digital publications with text, images, films hypertext links and RSS which can be readable with PC computers, tablet computers like *iPad*, smart phones or other specialized device like e-book reader *Amazon Kindle*. Electronic books are changing the perception of what it means to read, because flipoboard makes material more interesting and more easily acceptable by the reader.

According to Fourth Annual World eBook Fair readers all over the world have access to more than two million electronic books, and thanks to mobile connection they do not have to storage necessary books. The other advantage is that reader can automatically choose any required language or in the case of dyslectic disorder electronic books can be supplemented with text-to-speech option. Those books are much cheaper than traditional books, both for publishers and customers. Digital books need to be generated only once and it can be distributed to an infinite number of times, without a risk of loss.

Although electronic books provide a number of advantages, it is necessary to draw attention to several shortcomings. Electronic book readers require money investment for device and for programs which have to be compatible with user's computer or other devices. User also needs to provide patching for security vulnerabilities and anti-virus, anti-malware and spy-ware. It may arise out incompatibility problem between format of electronic book and electronic book reader. Electronic book reader must have power supply and can cause eyestrain.

In academic environment there are limitations and they are a lack of academic titles, lack of technical conditions that could support this type of literature, publishing titles restrictive model and digital rights management (Horizon Report, 2011, p. 9).

Mobile devices

It is believed that the so-called mobile revolution began, because more and more people use mobile devices to access the Internet. These devices represent significant competition computers in this domain. Moreover, mobile devices are continuously developed and constantly provide access to networks that are convenient and reliable, significantly improved their features, which makes them more reliable and easier to use, less expensive than the standard PC or notebook. Moreover, today people need to stay connected through social media, and mobile devices offer the possibility of continuous contact. The most important devices in this group are cell phone and tablet.

According to Horizon Report (2011, p. 13) mobile devices are the convergence of few technologies that can be useful for education, including apart from electronic book readers, annotation tools, applications for creation and composition, and social networking tools. They can record images, video, sound, take notes, use GPS technology and mapping software to record information essential to their coursework. These features can be very helpful for learning process.

Shortly after the mass acceptance of mobile devices, particularly mobile phones, many countries prohibited their use in schools. Today the situation has changed, but this is still a very controversial topic with numerous pros and cons. In some cases mobile devices can be disturbing factor during the class. Cell phone might ring or students can constantly receive text messages or they can even follow some contents like public network, films, music, games etc. One of the disadvantages is great potential for cheating with them.

Augmented reality

A visual augmented reality system enhances or augments the surroundings of the user with virtual information that is registered in 3D space and seems to coexist with the real world (Azuma et al., 2001, p. 34) Augmented reality utilizes the camera or GPS built in smart phones or computers to gather the information about the world and then uses these devices with internet connection to get additional information about those things and finally renders that information on computer device in 3D as if they are in the environment around us. Practically it is a concept of merging media (3D graphics, pictures, video and sounds).

This is emerging technology but it will have a huge impact on the way that people learn, because this technology has unlimited potential for learning process. In some extent it can be seen as portal to another dimension. In Figure 3. we can observe the transition between the real world and virtual world through augmented reality and augmented virtuality.

Figure 3. *Milgram's reality-virtuality-continuum*

Source: Azuma et al., 2001, p. 34

Further development of mobile devices and easy access to reliable and high-speed networks are the most important condition for the development of this advanced technology. The use of augmented reality is expanding daily, and regardless of predominantly use for marketing, entertainment and tourism, its application for teaching can be exceptional. It is most suitable for visual and highly interactive forms of learning, allowing the overlay of data onto the real world as easily as it simulates dynamic processes. The basic concept using this technology in learning relies on the ability to provide to learners experimental and location-based learning, as a substitute for the real world. Augmented reality has the ability to transfer learner from enclosed spaces (classrooms) to any imaginary space, which provides endless benefits for learning.

Game-based learning

The potential of new game-based technologies have brought a whole new perspective in the learning process. This way of learning is an alternative that transferred receiving the knowledge in virtual world, with all informal environment performance settings. The space can be adapted to each learner individually, which puts him in the limelight, creating more convenient environment which makes learning more effective.

Games have always played a role in learning, since the form of simple paper-and-pencil games. Today, a selection of games that can be used for educational purposes is large. They can be designed for one player, but also for small or large groups and can be divided in the massive multiplayer games and role-playing games. Educational games can be broadly grouped into three categories: games that are not digital; games that are digital, but that are not collaborative; and collaborative digital games (Horizon Report, 2011, p. 20). They can be easily integrated in the course content and enhance problem solving, leadership, cooperation, research, public speaking, writing, digital literacy, innovation and procedural thinking of learners.

Gesture-based computing

Gesture-based computing is a type of technology that enables interaction between the human body and computer without the use of a standard interface, the mouse and keyboard. The most popular device of this kind are the Nintendo Wii and Xbox, but technologies such as Kinect, SixthSense and Tamper developed far more intuitive devices.

It is obvious that these devices found their first application in games and file browsing, but the possibilities are much wider. In education, their application would be ideal for training and simulation. Horizon Report (2011, p 25) states that gesture-based computing has strong potential in education, both for learners, as they will be able to interact with ideas and information in new ways, and for teachers, for exploration of new ways to communicate ideas. It also has the potential to transform the methods for sharing ideas.

Learning analytics

Generally the amount of data is constantly growing with incredible speed, and their processing and analysis are becoming an increasing problem. Generally the amount of data is constantly growing with incredible speed and processing and analysis are becoming an increasing problem. This is particularly evident in the field of education, where there is a discrepancy between user-generated data in the process of material access or in the communication with teachers (e.g. logs in the system) and their use in order to improve the teaching process. The problem can be solved by using adequate analytics system. Beside that these systems support all sort of analysis of student performance, progress in practice and engagement.

With analytics and data mining experiments in education starting to proliferate, sorting out fact from fiction and identifying research possibilities and practical applications are not easy. This issue brief is intended to help policymakers and administrators understand how analytics and data mining have been - and can be - applied for educational improvement (US Department of Education, 2012, p. 8).

ADULT LEARNING OF WOMEN IN SERBIA

In Serbia, according to *An overview of the labor market in Serbia* (Arandarenko, Nojkovic, 2007, p. 26) two million people over the age of fifteen do not have adequate working and living skills and competencies, and as a result of that many of them have significant difficulties to find or keep a job. Unemployment, especially labor market rigidities (lack of programs that meet the demands of the labor market for specific knowledge and skills, career counseling and guidance system for recognition of competences and qualifications and active employment) is one of the primary obstacles to overall sustainable socio-economic development. The adult education system inherited from socialism, based on the concept called *radnički univerziteti* (workers' universities or vocational colleges) fell apart in the nineties. However, the empty space is still not adequately filled.

The target groups of adult education in particular should include illiterate persons without primary education, people without jobs and qualifications; unemployed; technological surplus; employees, particularly groups that are at risk of losing their jobs, entrepreneurs and the people who start a business; persons with disabilities; ethnic minority groups, particularly Roma, women and rural population.

In October 2012 Government of Serbia adopted *The Education Development Strategy in Serbia until 2020*. The mission of the Serbian education system in the 21st century is to provide the basic foundation of life and the development of each individual, state and society based on knowledge.

Full acceptance of (a) the role that education must play in the economic, cultural, social, political, democratic and other development and improvement of strategic, cooperative and competitive capacity and position of Serbia in the contemporary world, especially in the European Union, and (b) on the basis of the current the state of education in Serbia, which is in many ways very unsatisfactory, identified the following key long-term goal of education.

1. Increasing the quality of processes and outcomes of education to the maximum possible level.
2. Increasing the coverage of the Serbian population in all levels of education from pre-school education to the creation of conditions for lifelong learning.
3. Achieving and maintaining the relevance of education by the structure of the educational system is directly aligned with the developmental needs of individuals, economic, cultural, research, education, public, administrative and other systems.
4. Increasing the efficiency of resource education, and completion of education on time, with minimal extension of the reduced dropout.

Part of the Strategy devoted to adult education has two key objectives: scope and relevance. Strategic focus is that, by 2020 less than 7% of the adult population in the Republic of Serbia is covered by adult education programs.

To achieve this goal, the following measures are defined:

- Develop a broad network of formal and informal education providers of adult education programs that operate under the same conditions and standards;
- Develop programs of adult education, vocational education and training, particularly short (part time) programs for adults, short courses up to 30 ECTS, and *special programs for vulnerable groups*;
- Develop career guidance and counseling adults by providing assistance in understanding and interpreting the information, the desire to discover opportunities and needs when it comes to careers and further professional training.

Strategy anticipated the following measures:

- Adult education is a correction of the regular education system, an innovative and flexible enough to adapt to the changes and demands of new technologies and sustainable development;
- A system for monitoring the labor market is based on the development of social dialogue through partnerships with relevant stakeholders (government, employers, local authorities, non-governmental organizations, trade unions);
- Modularization education and training program is conducted under the expressed needs of the labor market;
- Ensure that the flexible learning paths may be different qualifications that will be recognized by the National Qualifications systems and national systems of vocational qualifications that are compatible with the European Qualifications Framework for lifelong learning;
- To develop by 2020 the unique system for the recognition of prior learning to competency and qualifications acquired through practice and additional training to recognize and certify in accordance with the national qualifications system.

One of the vulnerable groups particularly distinguished in the Strategy is women in Serbia and their education in the context of employment. In order to examine current familiarity with contemporary learning tools and their wiliness for continuous learning we conducted the research based on the survey which encompasses 118 women in Serbia aged from 30 to 65 years, randomly sampled. Sample is regionally diversified in order to avoid possible biases that could exist regarding the differences in regional development in Serbia.

Our sample included women aged 43.5 in average and the 72.2% of them are employed. Regarding the level of education 13.9% have elementary education, 52.8% secondary, 11.1% bachelor level and 22.2% have faculty education.

After introductory questions we ask them about their habits in the computer using. The answers shows that 75% use Internet frequently, 83.3% has unlimited availability to use computer, while 41.7% has smartphone or tablet computer.

Almost half of respondents (47.2%) expressed an intention to continue further education and in Figure 4. we present the reasons for abandoning further education (percentage relative to number of women not planning to continue education).

Figure 4. *Reasons for abandoning further education*

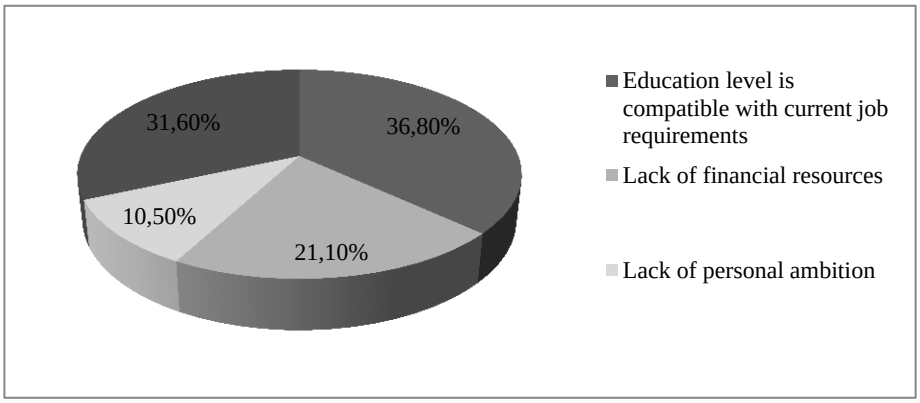


Figure 5. shows which method of education respondents would use for further education (percentage relative to number of women planning to continue education). According to results, most of the women, over 70% are interested in informal way of education and most of them are familiar with the possibilities of further formal (66.7%) and informal (63.9%) education through internet.

Figure 5. *Method for further education*

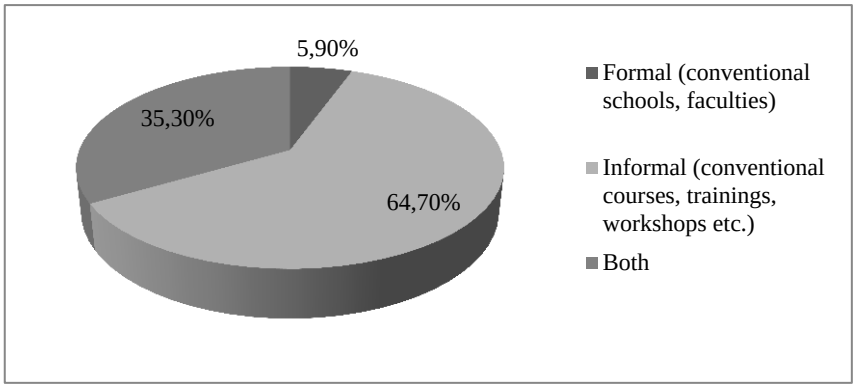
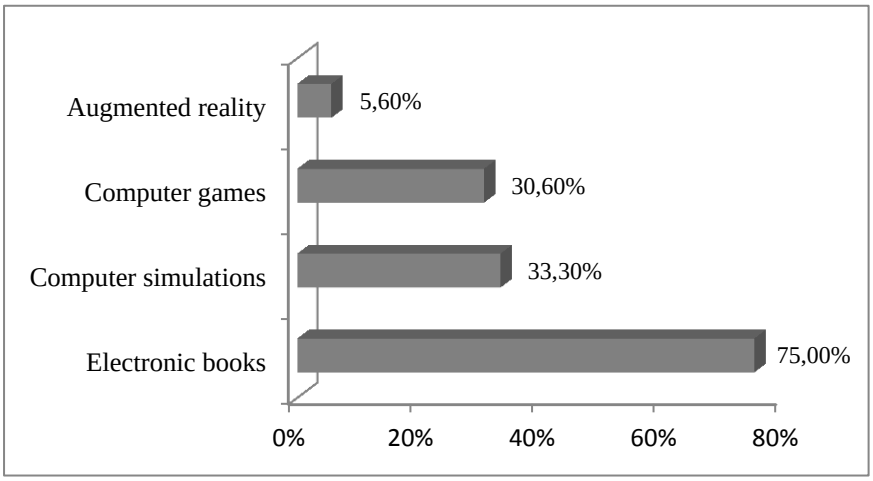


Figure 6. contains the answers on the question about familiarity with learning tools highlighted in the Horizon Report. The 75% of respondents are familiar with electronic books, while only 5.6% heard about augmented reality.

Figure 6. *Familiarity with learning tools*



Based on the survey we can also conclude that the women (63.9%) would have additional motivation for further education if advanced technology brings faster and easier approach to learning relative to conventional learning using hard copy textbooks.

We were further interested to find out whether age, employment or current level of education influence the preferences of women to further education and their knowledge about new tendencies in education. Thus, we did several breakdowns of the sample explore relationships between mentioned variables, more specifically:

- age/employment and further education plans
- level of current education and further education plans
- level of current education and familiarity with learning tools
- age/employment with motivation for advanced-technology-based learning

Figure 7. and 8. show breakdown of further education preferences in regard to the age and current education, respectively. We do not perform any formal statistical test due to relatively low respondents in the sample, however descriptive analysis shows that age seems not to affect significantly further education planning. On the contrary, education seems to affect these preferences significantly, as the respondents with higher level of education clearly exhibit higher willingness to continue education.

Figure 7. *Age breakdown of further education preferences*

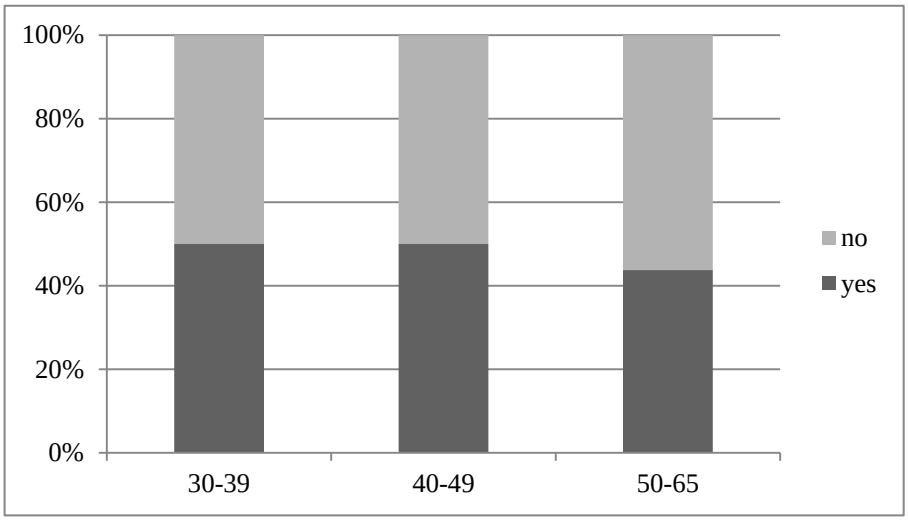
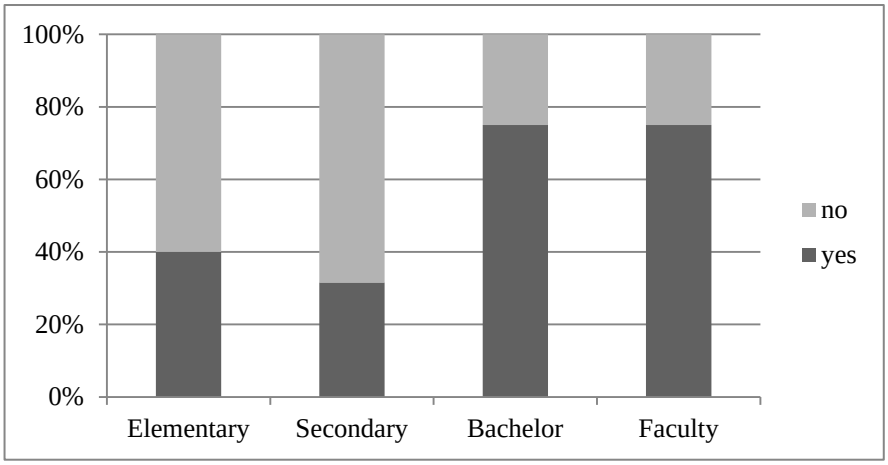
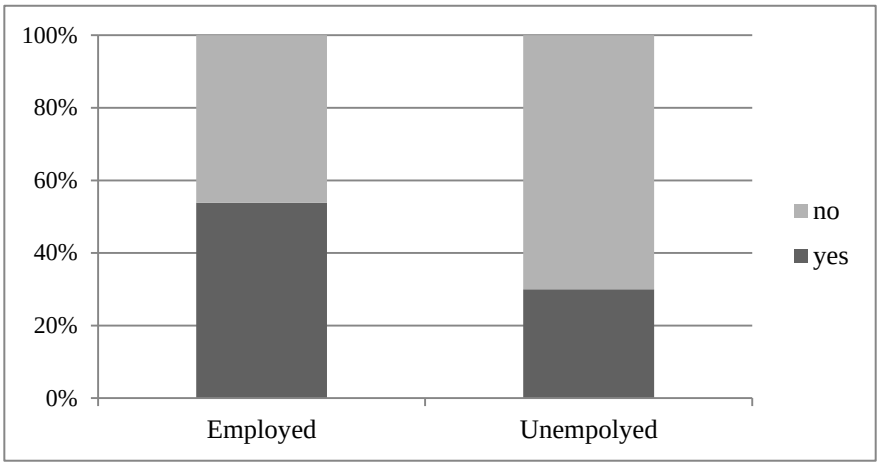


Figure 8. *Current education breakdown of further education preferences*



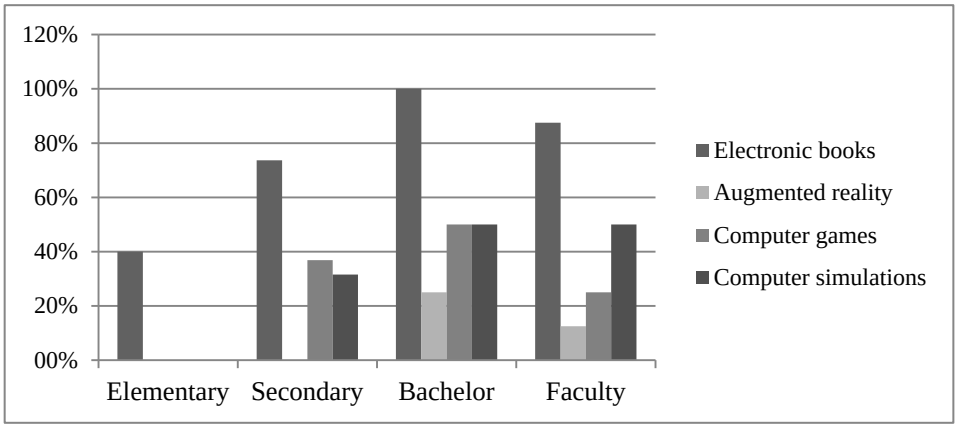
In addition, we do the same breakdown in regard to the job status, presented in Figure 9. Similar to level of current education, job status tends to affect education preferences in the same manner, i.e. employed women exhibit higher level of willingness for further education.

Figure 9. *Employment breakdown of further education preferences*



Further on, we look at the breakdown of familiarity with new tendencies in education, i.e. advanced electronic tools with respect to current education level. It suggests that women with college or university degree are far more familiar with these concepts relative to less educated women, especially to women with only elementary education, as shown in Figure 10.

Figure 10. *Current education breakdown of familiarity with (electronic) learning tools*



Finally, we analyze women' motivation to continue education by utilizing the benefits that advanced learning tools bring about, in regard to age and job status. Similar to general preferences for further education, it seems that age does not affect this kind of motivation, as shown in Figure 11. Opposite, Figure 12. suggests that unemployed women are not motivated to continue education even if they knew that it would be realized in time and effort saving manner.

Figure 11. *Age breakdown of the motivation for advanced-technology-based learning*

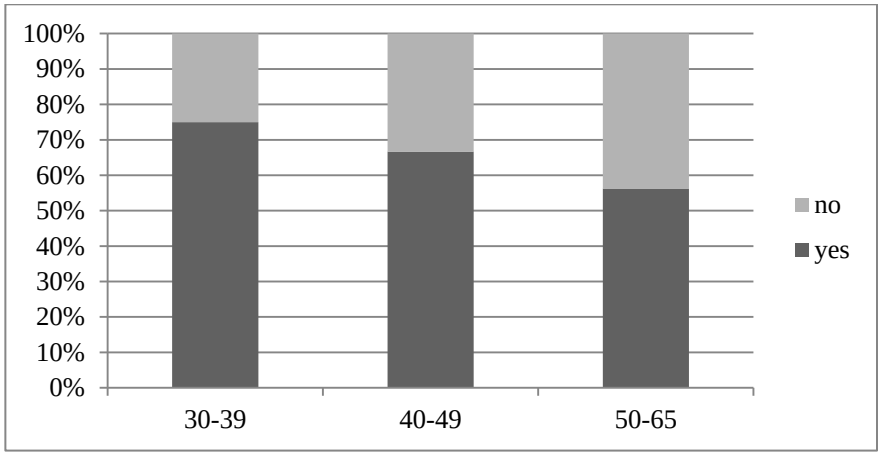
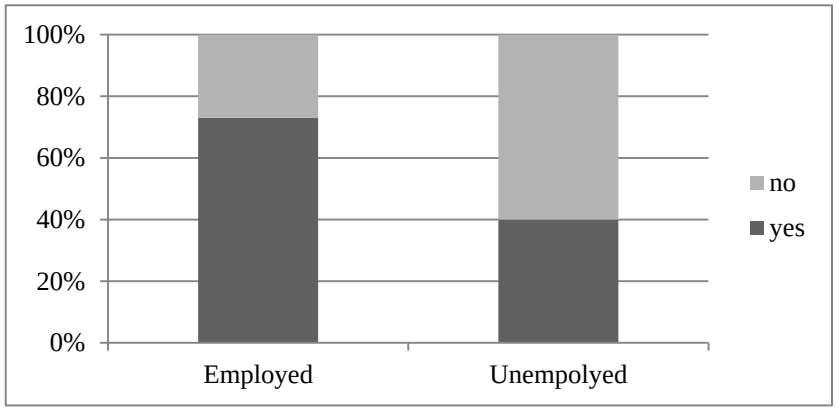


Figure 12.*Employment breakdown of the motivation for advanced-technology-based learning*



Taking all into account, this simple analysis shows that in general age seems not to play significant role in preferences for lifelong learning of Serbian women, while job status and current level of education have strong influence. More specifically, conclusions suggest that unemployed women with elementary and secondary education are relatively less interested to continue education based on conventional or non-conventional methods and in addition that they are not familiar with advanced learning tools. Having in mind that this group of women is by default the most vulnerable relative to the rest of women population, lack of ambition for lifelong learning and limited knowledge on new tendencies in education bring additional concerns about their vulnerabilities, which should be taken into account by the policy makers in order to implement policies on adult learning in more efficient and successful manner.

CONCLUSION

In this paper we tried to present the possible influence of modern technology on education of women in Serbia. After the introduction we gave a brief explanation of lifelong learning and adult learning process concepts and its possible impact on World millennium goals. In the second part we presented achievement of contemporary technology according to the Horizon Report 2011 and its effects on the learning process. We covered all relevant technologies: electronic books, mobiles, augmented reality, game-based learning gesture-based computing and learning analytics and emphasized the most important advantages and disadvantages for each of them in education.

The third part is dedicated to education in Serbia with the special reference to adult learning of women. In order to examine current familiarity with contemporary learning tools and their willingness for continuous learning we conducted the research based on the survey which encompasses 118 women in Serbia aged from 30 to 65 years, randomly sampled. Sample is regionally diversified in order to avoid possible biases that could exist regarding the differences in regional development in Serbia.

Taking all into account, this simple analysis shows that in general age seems not to play significant role in preferences for lifelong learning of Serbian women, while job status and current level of education have strong influence. More specifically, conclusions suggest that unemployed women with elementary and secondary education are relatively less interested to continue education based on conventional or non-conventional methods and in addition that they are not familiar with advanced learning tools. Having in mind that this group of women is by default the most vulnerable relative to the rest of women population, lack of ambition for lifelong learning and limited knowledge of new tendencies in education bring additional concerns about their vulnerabilities, which should be taken into account by the policy makers in order to implement policies on adult learning in more efficient and successful manner.

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