

Preliminary communication
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IMPORTANCE OF NEW APPROACHES IN EDUCATION FOR HIGHER EDUCATION INSTITUTIONS

Zoran Ivanovic¹
Ace Milenkovski

Abstract

Education is the main driver of the development of science and economic development, but it can also be defined as an essential process in acquiring knowledge, skills and competencies. Purpose of this research paper was to highlight the needs and demands of modern society in preparing human resources for labour market with adequate skills and competences. During this process educational system has a great role in achieving this goal. Due to dynamic and developing environment many countries in the south-eastern Europe find very hard to adapt those changes. In this research paper several different approaches to education and learning process were presented and in detail explained. Learning through information processing, through research, simulation, and application of other interactive teaching methods using information and communication technology (ITC) should be imposed on the traditional form of ex cathedra. Education system in various south-eastern European countries was analysed and the research results suggest that south-eastern European countries have below average results compared to those from EU countries, but there is enough space to progress especially through the use of computer-based technologies. Today, the implementation of computer-based technologies has become a necessity in achieving greater engagement of students.

Keywords: higher educational system, distance learning, knowledge, professional development, labour market.

Jel Classification: I21; I23; I25

INTRODUCTION

Purpose of this research was to analyse education in countries of south-eastern Europe and to lay the foundations for the future of education that has to be in the line with the

¹ **Zoran Ivanovic**, PhD, Full Professor, University of Rijeka, Croatia; **Ace Milenkovski**, PhD, Full Professor, University of Tourism and Management in Skopje, North Macedonia.

contemporary labour market demands. The educational system has a great role in prepare human resources for independent work, with adequate skills and competences. Although the countries from south-eastern Europe are making a great effort and trying to implement reforms in education that are aligned with European trends for years, the results achieved are still not significant, although there are visible improvements. According to the most famous university ranking list, the Shanghai ranking list, world universities are ranked based on the indicators of scientific and research work, with the top of the list being dominated by American universities.

Authors have compared the best universities of some countries in the south-eastern Europe (Slovenia, Serbia, North Macedonia, Bosnia and Herzegovina and Albania) and have concluded that only some of the countries are ranked in top 1000 universities. University of Zagreb in Croatia and University of Maribor in Slovenia have world rank between 501 and 600, while University of Novi Sad in Serbia is ranging between 901 and 1000 in 2018 according to Academic Ranking of World Universities (ARWU), also known as Shanghai Ranking. According to the Times Higher Education² — World University Rankings in 2018: University of Ljubljana, Slovenia and University of Split, Croatia are taking place between 601 and 800. University of Zagreb, University of Maribor and University of Beograd are ranging between 801 and 1000 place.

Educational technology (procedures for the implementation of education program) which among other things serve to increase the efficiency of the learning process and teaching is not at a satisfactory level. Many educational institutions in the Croatia and in other countries in the region lack modern equipment (IT and other), and the present material base and financing system do not meet the requirements. Therefore, the chance for the most important improvement of the educational institutions, without the modern technological infrastructure and the possession of adequate knowledge of its use, is very small. Information and communication skills of teachers are neglected and unsuited by the computerization of society.

In this part are shown the last results from Webometrics³ for south-eastern European countries: University of Tirana, Albania which has taken the 4387. place, University of Zagreb, Croatia is on the 668. place, University of Rijeka is on the 1534. place, University of Sarajevo, Bosnia and Herzegovina is on the 2367. place, University of Ss Cyril and Methodius University Skopje, North Macedonia is on the 1627. place, University for Tourism and Management Skopje, North Macedonia is on the 17720. place, University of Belgrade, Serbia is on the 1028. place, University of Ljubljana and Slovenia is on the 295. place in the world. New information and Communication Technology (ICT) provide the opportunity to introduce a new concept and approach to teaching in the educational process. Learning should be more dynamic, knowledge more persistent and more transferable. Learning through information processing, through research, simulation, and application of other interactive teaching methods using information and communication technology (ITC) should be imposed on the traditional form of *ex cathedra*.

² Times Higher Education (THE) is the leading provider of higher education data for the world's research-led institutions.

³ Webometrics ranking comprises about 25000 institutions of higher education around the world. It is prepared by The Cybermetrics Lab (Spanish National Research Council, CSIC), showing the influence of a university on the Internet.

The development of the quality assurance system is an indicator of the development of the educational system. The implementation of measures to ensure the quality of education is necessary, quality monitoring is required both in the education process and beyond. The modern educational system monitors the quality of the "production" of the human resources. If human resources do not have the necessary quality (knowledge, skills and competencies), it will be necessary to discover its causes, intervene and take measures to improve it. It is also necessary to note that the mechanism for recognizing and rewarding excellence and quality is in many aspects insufficiently developed. However, it can be noticed that the process of ensuring and improving the quality of teaching processes and programs becomes something that is increasingly indispensable, all in line with the guidelines of the European Association for Quality Assurance in Higher Education (ENQA).

1. THE REALTIONSHIP BETWEEN EDUCATION AND ECONOMIC GROWTH

Educational motivation depends on the individual, but it is quite certain that the institutions of higher education in this part play a key role because they have to create a stimulating environment. There are many definitions of education, but the most complete according to the author's opinion is one that defines education as process in acquiring knowledge, skills and competencies. From an economic perspective, an excellent and innovative system of education and training is crucial for personal fulfilment, building a fair community and a successful nation. Looking from the economic perspective an innovative system of education has a central role in maintaining and strengthening the national and overall economic progress, which consequently strengthens and makes society (community) successful. „Higher education institutions are increasingly viewed as 'economic engines' by policy makers and are seen as essential for ensuring knowledge production through research and innovation and the continuous education of the workforce“ (Pavel 2012). Education is the main driver of the development of science, which promotes economic development. The goal is an economy where knowledge is the main driver of economic growth, or the concept of the knowledge economy (Chen and Daklman 2006). The result of scientific development is the increased standard of living of the population. The development of the country's educational system is one of the main determinants for developing the competitiveness of its human resources. Highly competitive human resources result from a quality education that is available to a large percentage of the population (Lowther 2004). According to Bodiroza (2018, 115–116) “Knowledge is the basis for applying innovation. It can be said that economics is actually economics of knowledge today, because wealth is created by the efficient management of knowledge. Investing in a company means gathering talents, abilities, skills and ideas that are intellectual capital and not physical and financial resources.”

Considering that human capital can be defined as the measure of the skills, knowledge and competencies of the workforce, Benhabib and Spiegel (1994) have concluded that a country with the highest stock of human capital will always eventually emerge as the technological leader nation in finite time and maintain its leadership so long as its human capital advantage is sustained. Squicciarini and Voigtlander (2014)

explain in their research that the presence of knowledge elites – played an important role during industrial growth. They claim that regions with an extensive knowledge elite industrialize faster. Numerous other authors showed in their paper significant correlation between an increased level of education in a country and the country's economic growth (McClelland 1966; Woo 1991; Lau, Liu, and Rivkin 1993; Chen and Feng 2000; Barro and Lee 2000; Hall 2002; Bassani and Scarpetta, 2001, Li and Huang 2009; Madsen and Murtin 2017). There is strong evidence that the cognitive skills of the population – are powerfully related to individual earnings, to the distribution of income, and to economic growth (Hanushek and Woessmann, 2007). Therefore, quality assurance in higher education becomes an essential issue precisely because of the global growth of the number of students and thus the opening of new higher education institutions. Systematic quality assurance presents a challenge to all the higher education institutions, precisely because of the strong implications that will be reflected in the future in the economic sector.

2. LOOKING INTO THE FUTURE OF LEARNING

In the world, the prevailing form of teaching is based on one-way communication in the relationship between professor-student and the student receives basic knowledge of the subject professor teaches. Learning and teaching is one of the most important factors in education that needs to be changed. Considering the needs of the users in education and the way in which they absorb knowledge, a new approach to education and learning process should adopt, in addition to traditional and contemporary approaches of teaching, using modern technologies – auditory, visual, which best suit the user's (student) preferences. Such customization will allow the user to acquire and retain information, process and apply received knowledge in a new way.

Acquired knowledge is the foundation of an individual's prosperity, but in a wider context it also represents social prosperity. The new approach in the way of education is "distance learning" which combines the application of different technologies (computer and video communication), and provides the possibility of interactive communication, for example, with the teacher and vice versa, then the transfer of various forms of textual, audiovisual, and similar to meet the needs and expectations of users. A special form of "distance learning", will represent a way to boost the satisfaction of its users, or increase the number of users, or to increase their competitive advantage over other educational institutions. „E-learning environment makes learning process more efficient and attractive. However, the possibility of learning anytime and anywhere in e-learning environment requires additional attention to motivate students to acquire knowledge and prevent drop-outs“ (Gorbunovs, Kapenieks, and Cakula 2016, 256). Because of the accessibility and openness of modern technology, the user who applies such technology on a daily basis is aware of the many opportunities that it offers, and he expects and wants to take advantage of this opportunities in business, professional, educational and other activities. The development and application of new technologies in education, learning and the acquisition of knowledge can significantly increase the quality of independent learning and the quality of teaching that needs to be targeted and innovative.

“Future teachers will need the skills to work one on one with different types of learners as they study in a student-centric way. The tools that teachers build and distribute in the user networks of the future will play a key role in making learning student-centric. The next generation of teachers needs to learn how to build these tools for different types of learners“ (Christensen, Johnson, and Horn 2008, 229). According to Avramovic and Markovic (2018) it is very important to introduce practical content in the education process "due to the way in which practical contents are remembered and recognized. Theory of experiential learning, learning is seen as a process, while knowledge is created by the transformation of experience, and knowledge results as a combination of gaining and transforming experience. Teaching should be an adequate combination of teachers' work with the use of available technology and have as much individual access as possible. Today businesses are exposed to daily changes, demands, trends, development and overall technological progress, and to survive and compete in the market, have the need for some new human resources who have “new knowledge”, skills and competencies to help keep moving business forward.

Performing an educational process using information and communication technologies, using the internet and various programming systems is called electronic learning or e-learning. Users access the e-learning system based on a web application that is accessed through a web browser. The benefits of e-learning are reflected in the fact that: a user participates in classes regardless of the distance, time, or any other circumstance that would otherwise prevent him; the user can choose the time when and how he will access in e-learning system; it is possible to simultaneously participate and use the system to an unlimited number of users; considering the 24-hour availability, it allows the user the most efficient use of time; it is possible to implement more information and materials; it is enabled access to other resources relevant for teaching materials; it is enabled a dynamic interaction between educators and users, as well as the users themselves to each other.

The disadvantage point is that the user must have a certain level of knowledge in order to use the electronic system and that he must possess quality equipment. This kind of system must have the appropriate technical support and the user must constantly monitor and upgrade the system.

E-learning improves the quality of education and the quality of the teaching process. It must be adapted to user needs, and its purpose is to provide current and up-to-date teaching materials, easier resource use (virtual rooms for webinar virtual cabinets, simulation models, virtual project tasks, etc.) and it allows advanced and better individual and team work. For example, the Merlin e-learning system (using the Moodle program system) is being developed and maintained at the University of Computing Center of the University of Zagreb's e-Learning Center. It represents a common platform available for e-learning projects in university teaching. The emphasis of the e-learning system is on new opportunities for teaching, learning, material mastering and preparation for a user's exam. Information, learning materials and schedule of tasks are constantly available, as well as the possibility of self-assessment of the knowledge (tests) and review of the assessment (exam results, colloquia and other results of the teaching tasks). Users can communicate with each other and exchange information. There are a lot of options, for example within the program, GeoGebra's mathematical software can be

embedded in the Moodle course, which includes geometry, algebra, tables, graphs, statistics and computation, and is intended for all levels of education. This software has the option to store different data such as the result, date, possibility to store and continue later. It has the ability to create various notes, systematically organize teaching units, themes, ideas, concepts and it can also be used to create mental maps within the same program. For example: members of the Academic Community of the University of Rijeka (teachers, students, employees) can use MudRi, which is also based on the open source Moodle software. For the users of this platform, the University of Rijeka has provided an education program in order to acquire knowledge and skills to use e-learning tools, and to create multimedia content, and knowledge and skills to use the Moodle LMS (Moodle LMS) as a tool in teaching at the University of Rijeka.

3. ANALYSIS OF THE EDUCATION PERSPECTIVE IN THE SOUTH-EASTERN EUROPEAN COUNTRIES

Education must be based on a long-term strategy that will provide results in the view of excellence of future labour force. “Knowledge has become the fundamental productive force in human society and the main condition of success. Globalization trends link the world of information, economics, technology, traffic and media into the whole, applying the same benchmarks and value systems. Differences in knowledge and its technological application become major factors that divide developed countries from underdeveloped, rich in poor, high standard of living from low.” (Croatian Academy of Sciences and Arts 2004, 3).

In this part more attention will be devoted to statistics to determine the state of education in individual countries in the south-eastern Europe. Authors have analysed several countries in the south-eastern Europe, such as: North Macedonia, Bosnia and Herzegovina, Serbia, Albania, Slovenia and Croatia. First, it is very important to show difference in population between countries, so we can later easily interpret other charts.

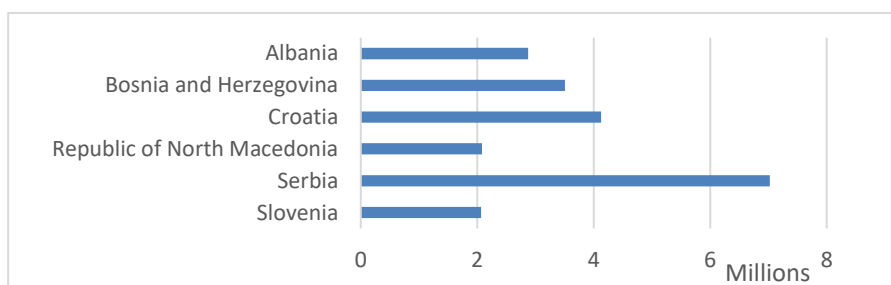


Figure 1. Total population in 2017

Source: Data retrieved from The World Bank

In the first place is Serbia with 7 million population, on the second place is Croatia with little bit more than 4 million followed by Bosnia and Herzegovina, Albania, North

Macedonia and Slovenia. The second chart which will be analysed refers to number of tertiary graduates by the level of education between 2011 and 2016.

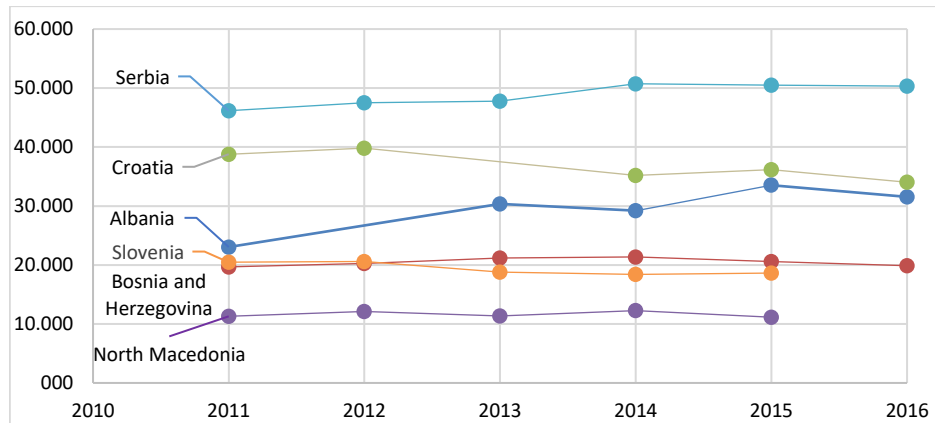


Figure 2. Number of tertiary graduates by level of education between 2011 and 2016

Source: Data retrieved from <http://www.uis.unesco.org>

According to the graph presented, it can be concluded that Serbia has a mildly growing trend as opposed to Croatia, which has a slightly decreasing trend in the number of tertiary graduates. Concerning Albania despite having million fewer inhabitants than Croatia over the last few years thanks to the growth trend, it has come close to it. Bosnia equal to North Macedonia holds the same number in the presented section throughout the years while Slovenia also notes a slight decline. Next chart is related to distribution of tertiary graduates in Business, administration and law. The available data is shown in the graph.

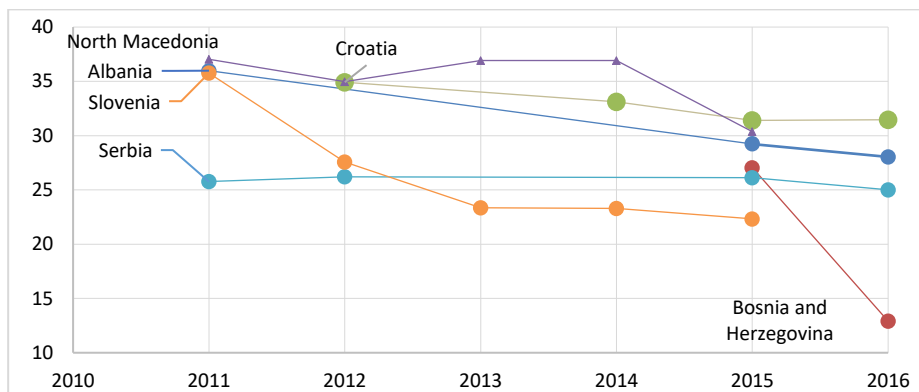


Figure 3. Distribution of tertiary graduates in Business, administration and law between 2011 and 2016.

Source: Data retrieved from <http://www.uis.unesco.org>

Common to all mentioned countries is that all have a slight decline besides the Serbia who holds a constant of about 25% of tertiary graduates in Business, Administration and Law. In the following table it is shown the share of the population by educational attainment level and selected age groups in 2017.

Table 1. Share of the population by educational attainment level and selected age groups, 2017 (%)

	25–54 years			55–74 years		
	Low (ISCED 0–2)	Medium (ISCED 3–4)	High (ISCED 5–8)	Low (ISCED 0–2)	Medium (ISCED 3–4)	High (ISCED 5–8)
EU-28	28.0	45.8	34.2	35.2	43.6	21.2
Croatia	12.3	62.0	25.7	32.2	49.5	18.3
North Macedonia	27.1	50.3	22.5	45.0	40.4	14.6
Slovenia	8.9	54.1	36.9	22.8	58.4	18.8

Source: Data retrieved from Eurostat (https://ec.europa.eu/eurostat/statistics-explained/index.php/Educational_attainment_statistics#Level_of_educational_attainment_by_age)

International Standard Classification of Education (ISCED) is a statistical framework for organizing information on education maintained by the United Nations Educational, Scientific and Cultural Organization (UNESCO). Version of ISCED from 2011 has 8 levels as follows: level 0 – early childhood pre-primary education, level 1 – primary education, level 2 – lower secondary, 3 - upper secondary education, 4 – post-secondary education, 5 – Short-cycle tertiary education, 6 – bachelor or equivalent, 7 – master or equivalent and 8 – doctoral or equivalent. By looking at Table 1, one notices that Croatia and North Macedonia are under European average in higher education (ISCED 5–8), while Slovenia is little above in age group 25–54 years. In the age group 55–74 all three countries Croatia, North Macedonia and Slovenia are under European average.

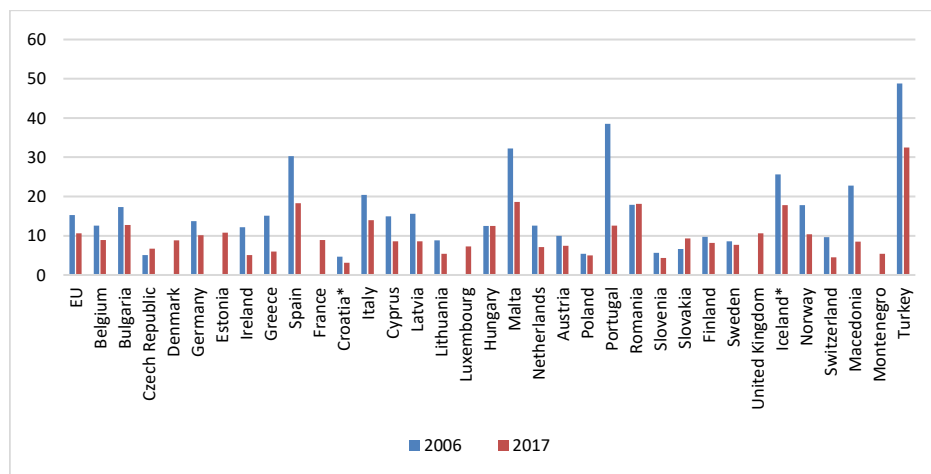


Figure 4. Early leavers from education and training (% of the population aged 18-24 with at most lower secondary education and who are currently not in further education or training)

Source: Eurostat <https://ec.europa.eu/eurostat/documents/2995521/8829968/3-25042018-AP-EN.pdf/70700487-07d4-4913-bdbb-2ca8c6be870a>

Compared with 2006, the proportion of early leavers from education and training decreased in 2017 in all Member States for which the time-series is available, except the Czech Republic and Romania. The country with the smallest proportion of early leavers from education and training in 2018 is Croatia followed by Slovenia and Switzerland. Among 34 countries North Macedonia is taking 15th place which is currently lower than EU average. According to all shown indicators in the education in some south-eastern Europe countries which are shown in the previous charts and table, present the results which indicate that countries in the south-eastern Europe are under the EU standard and vice versa, so it can be concluded that although the current state is not in line with EU average some indicators show progress and improvements. There is lots of space for progress of the countries in the south-eastern Europe. Therefore, it is necessary to transfer the knowledge about the importance and role of education as a very important “engine” for the entire social community and to detect the new approaches to education and learning process. Therefore, this paper represents a contribution to greater awareness of the importance and role of education throughout society as well as detection of new approaches to education and learning process as a challenge in the future development of educational systems of the observed countries.

CONCLUSION

Contemporary development constantly imposes new trends in education in order to gain future workforce that will be able to solve complex tasks which modern society imposes. Technology development accelerates teaching, which implies a faster and faster way of transferring knowledge, skills and competences. The system of education and training should prepare and train individuals for the world of work. Professional development and education of the individuals as educated, responsible, entrepreneurial, efficient people and development of their careers in the service of progress, contribution to community, economy, society should start early in the process of learning. Individuals need to be trained so they can: solve problems, independently conclude and make decisions in the business and social environment. This paper deals with the relationship between the number of tertiary graduates per education level, distribution of tertiary graduates in business, administration and law in the observed period between 2011 and 2016, the share of population by educational level of achievements in good groups was presented in 2017, and comparisons and analyses of the situation of selected south-eastern Europe countries were compared with the EU. The obtained results point under average results compared to EU average, but with plenty of space to progress.

Today educational systems and educational institution programs that have traditional methods of learning and teaching do not go hand in hand with modern society. New forms of acquiring knowledge, skills and competences are increasingly being imposed as the needs of today's generation who use and accept the new forms of modern IT solutions (software, applications, etc.) which are the result of the information-technology development. The new generations are becoming involved in the virtual world of computer-based IT, digital and other technologies that, using information-communication technologies, overcome the problem of the availability of different information in

communication of these technologies overcome the problem of distance between the Internet as a fundamental structure for the realization of the aforementioned. In the business environment, communication, business co-operation, business activities of various business entities (due to their advantages in reducing costs, faster growth and development, faster business operations and activities) is achieved through the use of many IT technologies.

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