

Higher education in the Republic of Serbia in the aspect of European Higher Education Area

The European Higher Education Area (EHEA) has existed since the signing of the Bologna Declaration in 1999, and during the first decade major changes were recorded in the system of higher education levels, ensuring its quality and internationalization. Each change led to the challenge and prevention of initiatives, which concerned a large number of countries included in the space. Despite the complexity of the process, there have been enough positive developments, because the present EHEA has transformed into a real, not an imaginary phenomenon, as evidenced by the constant accession of new countries over the past two decades. Today, the EHEA covers approximately 38 million students with an average allocation of approximately 0,95 % of gross domestic product (GDP) for education. In most countries, the percentage of allocation was stable or it was decreasing, which suggests that the demand for students was not correlated with allocations. The inclusion of higher education institutions in Serbia in the Bologna process required a rational solution while maintaining the existing national education and respect for foreign education. After 15 years, there are still tangible differences between domestic and European education. The application of European experience and the coherence of national and European education imply the solution of a number of problems both at the state level and at the level of each university / faculty. The article analyzes the state of higher education institutions in Serbia in comparison with the EHEA in terms of the number of students, the number of universities, teaching staff, allocation (costs) per student and the impact of the Covid-19 pandemic.

Keywords: higher education; Republic of Serbia; European Higher Education Area.

Introduction. At the beginning of the Bologna process, several countries, i.e. several higher education systems had a recognizable quality system, and two decades later they became the key initiators of changes in European universities. Today, the EHEA provides a reliable and systematic basis for trust and recognition.

The social dimension of the Bologna Process is developing slowly due to the fact that the number of students participating in higher education and graduating from it does not reflect the diversity of the population, especially when it comes to migrants, people born abroad and people with disabilities. The application of the Bologna Process concept implied structural reforms of the national higher education system in the Republic of Serbia, primarily the requirement that higher education become part of the EHEA, i.e. to improve the quality of education, ensure mobility, improve the quality of knowledge and competitiveness. Knowledge is at the heart of all industrialized countries, and it implies an educated population that teaches throughout life, coordinates and changes its own abilities in accordance with technological innovations and modern trends in society. This educated population is our students, who together with teachers make up the intellectual capital of each country and represent the carriers of the knowledge-based industrial development of the Republic of Serbia.

The educational process in Serbia fully sees the advantages and disadvantages in relation to the EHEA, while trying to preserve its advantages and correct the shortcomings in order to improve the competitiveness of universities. The advantages of national education are:

- the highest quality of education in the field of humanities compared to many foreign universities;
- fundamental and comprehensive general education, which is the basis for further professional mobility;
- it is available to all citizens, unlike many EU countries, where it is available only to the rich segment of the population;
- the high level of scientific education of the teaching staff is ensured by the existence of an academic degree of Doctor of sciences;

The disadvantages are mainly due to financial aspects, which are the reason of the following:

- the decline in scientific research mainly complicates the achievement of European standards of education;
- 16–18 % of the population received higher education, as opposed to 40 % in the EU countries;
- methodology of awards and inefficiency of the motivation mechanism for educational work;
- outdated material and technical basis;
- chronic lack of funding for the national field of education, which has become the predominant cause of negative trends in its development;

Number of students. Here we consider the number of students in short courses (short-cycle), bachelor's degree (bachelor), master's degree (master) and postgraduate (doctoral). In the academic year 2016/2017, there were about 38 million students in the EHEA, while only in Russia and Turkey there were about 7,2 million or 19 % (Fig. 1). In Russia, Turkey, Germany, France, Great Britain, Spain, Italy, Poland and Ukraine there were

more than 1.5 million students, while in the rest of the EHEA countries the number of students was not more than 900,000. If we compare the levels of higher education, the majority of students were enrolled in bachelor's degree programs (bachelor), about 56,4 %, in master's degree (master) about 21,2 %, and in postgraduate programs (doctoral) only 2,7 %. The remaining 19,7 % were enrolled in short-term programs (short-cycle). In relation to the academic year 1999/2000, there are differences in the aggregate number of students within the EHEA: in Turkey, the number of students increased by 6 times, in Cyprus by 3 times and in Albania by 2 times, while a slight drop is observed in Moldova (33 %), Northern Macedonia (19 %), Ukraine, Latvia and Estonia (10 % each).

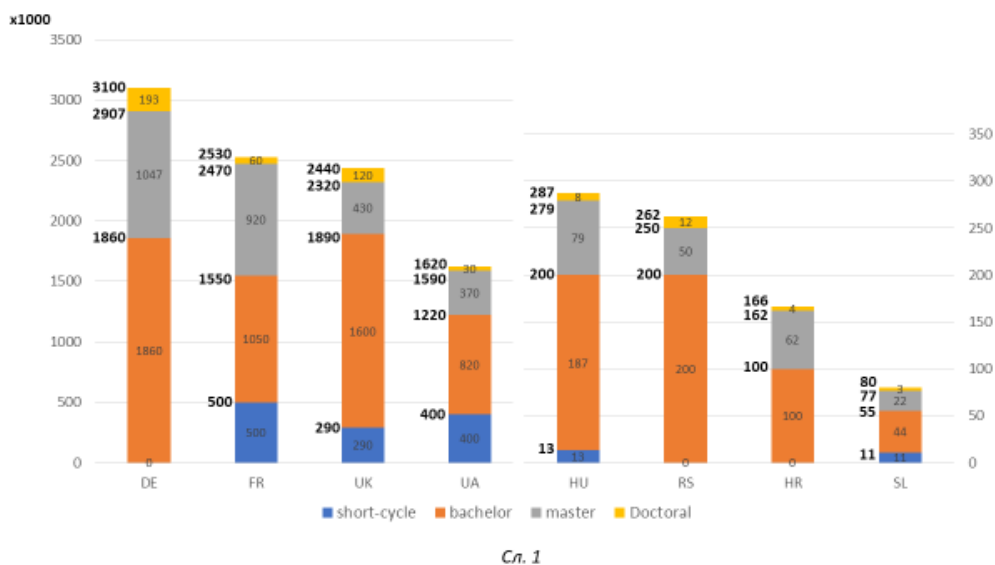


Fig. 1. The number of students in higher education in the academic year 2016/17

It should be emphasized that the cumulative increase in the number of students in the above period amounted to 18,2 million. The rate of change in the number of students varies due to demographic changes, short programs and the possibility of parallel education with work. The imperatives of the national policy are an increase in the population with higher education, an increase in students who pass exams successfully on a regular basis and an increase in funding.

Changes in economic conditions, such as the economic crisis of 2008, affected the admission of students on the one hand, while on the other, the conditions of institutions, implying: admission rules and procedures, cost analysis, the level of employment of students who have completed higher education, the duration of study, affected the conditions of institutions. An important indicator is also the share of the population aged 18–34 years in the higher education system, which in 2017 in the EHEA amounted to 16,4 %. In 2017, the admission rate in Turkey, Greece, Denmark, the Netherlands, Spain and Finland was more than 20 %. On the other hand, the admission rate was below 9 % in Moldova, Azerbaijan, Liechtenstein, Luxembourg and Andorra.

In Serbia, 262,000 students (3,7 % of the population) were enrolled in the academic year 2016/2017, and by the academic year 2019 / 2020, the number of students fell by about 8 % and due to demographic changes amounted to 3,5 % of the total population of the country. In the structure of students, 75,6 % were enrolled in bachelor's degree, 19,8 % in master's degree, and 4,6 % in postgraduate studies. Of the total number of students, 86,4 % were enrolled in state universities in the academic year 2018/2019, and 13,6 % were enrolled in private universities. The same tendency went on in the academic year 2019/2020. When it comes to student success, in the academic year 2016/2017, 51,596 students completed their education, of which 66,2 % completed bachelor's degree, 30,5 % master's degree and 3,3 % postgraduate studies. Of the above number, 83 % of students received education in state universities, and about 17 % in private ones. It can be noted that the term of completion of the bachelor's degree has increased by one year.

In the academic year 2018/2019, there is an increase in the number of students enrolled in private universities, where about 18 % of students enrolled. In relation to the academic year 2016/2017, the number of undergraduate students has decreased (69,7 %), the number of graduate students has increased (28,3 %), while the share of graduate students has remained at the level of 2 %.

Teaching staff. It is very interesting to analyze how the change in the number of students affected the change in the number of teaching staff in the period from 2000 to 2007. In more than 40 EHEA countries, the number of teaching staff has increased, with the largest increase being seen in Albania (415 %) and Cyprus

(200 %). In addition to these countries, growth is also observed in Malta, Slovenia, Norway and Montenegro (120–195 %, Fig. 2). Among the 13 countries where the decline is observed, it is most present in Georgia, Greece and Estonia (25 % or more). With the exception of Slovenia, in these countries, the growth in the number of teaching staff is interrelated with the increase in the number of students.

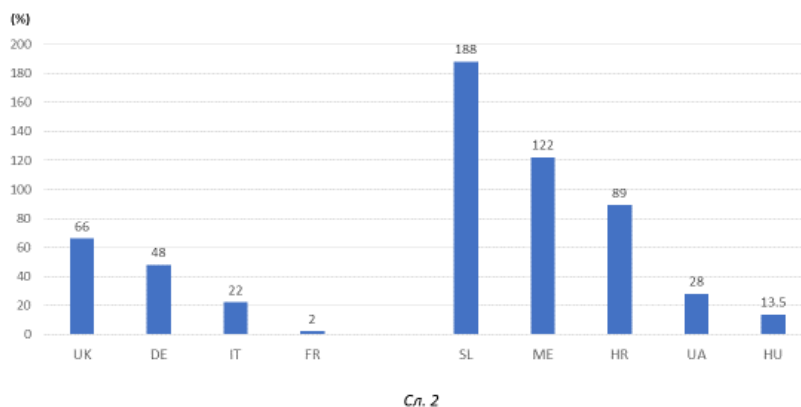


Fig. 2. Percentage change in the number of teaching staff

in the period from 2000 to 2017

In the Czech Republic, Ireland, Greece, France, Moldova and Azerbaijan, there is a drop in the number of teaching staff along with an increase in the number of students.

Old age is an important characteristic of the teaching staff and it is especially important in the aspect of the system level of planning.

In the first group of countries (Kazakhstan, Italy, Slovenia and Bulgaria), more than half of the teaching staff is over 50 years old. In these countries, in the medium term, there may be problems in providing teaching staff. This share is relatively high (46–48 %) in Finland, Russia, Latvia and Switzerland. The share of teaching staff over 50 years of age is less than 30 % in Albania, Germany, Cyprus, Andorra, Luxembourg and Liechtenstein. In three of these countries, Albania, Cyprus and Andorra, more than 40 % of the teaching staff belongs to the age group from 35 to 49 years, while in Germany, Luxembourg and Liechtenstein 40 % of the teaching staff is younger than 35 years.

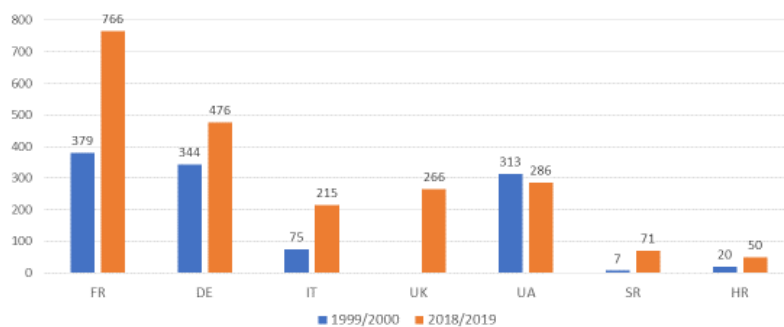
The implementation of a fair gender distribution is a goal, and in 2017 the average value in the EHEA was 45,2 which means that in half of the countries more than 45 % of the teaching staff were women. There are discrepancies in different countries. In 12 countries, women predominate in the teaching staff. Greece (34,3 %), Switzerland (35,5 %) and Malta (35,8 %) are the systems with the lowest proportion of women among teachers.

In comparison with 2000, Slovenia has seen the most significant increase in the number of women in the teaching staff (84,4 %) in the period from 2000 to 2017, followed by Malta (59,1 %) and Montenegro (42,9 %).

In the academic year 2016/2017, there were 16,280 teachers in Serbia, and in the academic year 2019/2020 there were 16,201, so the number decreased by 0,5 %, while it should be noted that the number of teaching staff does not correspond to the number of students enrolled, so it can be concluded that along with the decrease in the number of students, there was an increase in the teaching staff.

Higher education institutions. When considering the overall context of the development of the higher education sector, it is important to take into account not only the change in the number of students and teaching staff, but also the development of higher education institutions.

The number of universities in the EHEA countries has increased from 3,009 to 3,537 over the past two years. In some countries, there is an increase in (mostly) private universities, while in other countries the number of private universities is decreasing. Meanwhile, in some countries, universities have been joined and consolidated. The growth in the number of universities was recorded the most in France (+ 387), Italy (+ 138) and Germany (+ 132) (Fig. 3). The large increase in Germany is due to the growing number of private universities.



Сл. 3

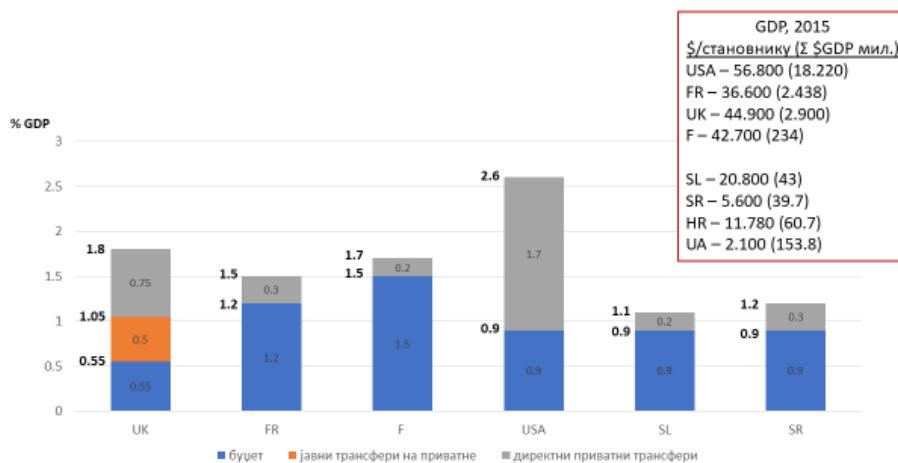
Fig. 3. Number of higher education institutions in the period from 1999/2000 to 2018/2019

The sharp increase in the number of universities in France can be attributed to an increase in the number of universities in the field of art. In Italy, universities in the field of art, music and dance were not included in the system in the academic year 1999/2000. In contrast, the number of universities decreased in 15 countries, and the most significant drop occurred in Georgia (-160), Armenia (-89), Portugal (-66) and Kazakhstan (-39). Another purpose of considering the number of universities is to approve their ratio to the share of the population. This measure is very relevant, since it does not take into account the size of the university, but gives a general idea of the state of universities in the EHEA. In 2018/2019, there were 71 universities in Serbia, which is an increase of 64 in relation to the academic year 1999/2000, while it should be emphasized that 67 % of them are state universities.

Higher education expenses. European universities are funded mainly from public sources. Annual government spending on higher education as a percentage of GDP provides a measure of government commitment to support high education, which is very useful when comparing states of different economic strength. Financial expenses for higher education relate to direct financing of higher education and to sources from direct cooperation with industry.

In 2016, the average government expenditure on higher education in relation to GDP amounted to 0,95 % within the framework of the EHEA. With 2,1 % of GDP devoted to high education in 2016, Norway was in first place, followed by Sweden (1,9 %), Finland (1,8 %), Austria (1,8 %), the Netherlands (1,8 %) and Turkey (1,4 %) (Fig. 4). In those countries with a relatively high level of public spending on financing higher education, the level of admission of persons aged 18–34 years is also high. Azerbaijan, Georgia, Armenia, Kazakhstan and Andorra allocated the least for higher education, less than 0,5 % of GDP in 2016. The global economic crisis has greatly affected the level of public funding for education, including higher education. The average student expense within the framework of the EHEA was 6.780 euros. The Scandinavian countries and Switzerland allocated the most per student, about 17,000 euros in 2016, while in 8 countries (Czech Republic, Turkey, Hungary, Poland, Latvia, Lithuania, Romania and Bulgaria) the costs amounted to less than 4,000 euros per student.

Information about changes in the allocation of funds intended for universities by students and the number of students shows certain specifics. Three countries, Latvia, Poland and Bulgaria, show a significant increase in investment between 1999 and 2016, but contrary to that, there is a slight drop (11 % or less) of students entering universities. And in Greece, there is an increase in students, which accompanies a decrease in the annual allocation per student.



Сл. 4 Издвајања за ВШУ изражене кроз GDP за 2015. г.

Fig. 4. Allocation of budget funds for universities in % of GDP in 2015

The share of GDP per capita in relation to the allocation per student gives a more specific and comparable measure of allocation for education. In the United Kingdom, there is a large increase in student allocation, but it is not accompanied by an increase in GDP per capita in the same period. For example, in 2014 Serbia and Croatia spent about 50 % of GDP per capita for each student in higher education, the same as Sweden and Finland spend, where GDP per capita and annual allocations per student are twice as much.

Of the 25 countries with available data for the entire analyzed period, allocations per student relative to GDP per capita decreased in 10 countries (Czech Republic, Germany, Ireland, Spain, the Netherlands, Latvia, Hungary, Austria, Greece and Bulgaria). This indicates that investment in higher education has decreased in these countries in relation to the industrial development of these countries. In Greece, Germany, the Netherlands and Bulgaria, allocations for higher education per student grew more slowly than GDP per capita.

Budget allocations for universities in Serbia over the past 10 years have been at the level of approximately 0.95% of GDP, but these allocations are not sufficient for normal functioning, so universities are forced to be financed from other sources: budget allocations 72,8 %; tuition fees 9,1 %; cooperation with industry 6,5 % and the rest (foreign projects, provision of consulting services and research services). The tendency of mass high education and an increase in the number of students implies that universities will be forced to provide new sources of funding, because funds from public funds will be insufficient. Most likely in the future, universities will switch to a contractual financing system based on input and output parameters. On the one hand, this will be affected by the number of students entering the university for the first time, and on the other hand, the number of graduates, their average score and duration of study, while separately taking into account the goals and results of the educational process.

Digitalization. The pandemic caused by Covid-19 has led to a change in the existing type of education and the transition to a remote learning system. This will undoubtedly lead to the intensive development and application of artificial intelligence, databases, the Internet and the emergence of new technologies. We have a new life ahead of us: we will live in a world of digital technologies that require new knowledge and competencies. Working with a wide range of information and networking tools will change working and cultural skills, as well as interpersonal relationships. Universities will have to adapt much faster to future needs and requirements and prepare students and teachers to act creatively in a digital environment. After the end of the pandemic and upon returning to the normal educational process, the use of digital technologies and their expansion will undoubtedly continue. Of course, in the subsequent period it is necessary to answer many challenges, such as: What is the role of digital technologies? How should education be carried out in a digital environment? How can digital technologies support higher education?

Digitalization cannot solve the presence of injustice manifested through: limited access to technologies of various social groups, rural regions and devastated areas, early termination of education, etc. It is necessary to think in more detail how remote or combined learning will affect the experience of higher education and change it. The question is also whether the campus organization will continue to exist in the digital age, i.e. whether dormitories, sports facilities, social and health services will remain part of the education system. We should not forget about the impact of distance learning on public and private funding, including student support. It should be emphasized that social and civic knowledge is very important for the education of citizens and that it cannot be well conducted remotely. It is important to realize and develop digitalization not as an alternative to internationalization, but as a mediator of new forms of internationalization and simplification of participation in

mobility. International mobility in the digital age will require new approaches in the field of reliable data exchange and identity, which will most likely lead to the establishment of a European student card.

Conclusions. Despite the fact that the development and trends vary more in different countries in terms of the number of students or the level of admission, the EHEA has seen a steady increase in the total number of students since its foundation. The data show an increase in student population in almost all countries, while average enrollment data has stabilized by 16 % in those EHEA countries for which we have data since 2010. The majority of students (56.4 %) are enrolled in the educational programs of the first cycle (bachelor). The change in the number of students is associated with demographic changes. It is noticed that the teaching staff is increasing, and that this number does not correspond to an increase in the number of enrolled students and vice versa.

The total number of universities has increased significantly in those EHEA countries for which we have data. However, in many countries there is a decrease in the number of universities due to their connection and consolidation of the private sector of higher education, while in many other countries the increase in the number of universities is the result of the growth of the private university sector. Norway, Sweden, Finland, Austria, the Netherlands and Turkey are the countries with the highest percentage of GDP directed to higher education.

In 2016, average government spending on higher education in the EHEA amounted to 0,95 % of GDP. Richer countries can invest more per student, despite the size of the economy and the educational sector. In general, the share of government spending on higher education varies from 2,1 % in Norway to 0,3 % in Lithuania.

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Любодраг Танович

Вища освіта в Республіці Сербія в аспекті Європейського простору вищої освіти

Європейський простір вищої освіти (ЄПВО) існує з моменту підписання Болонської декларації у 1999 р., а за перше десятиліття було зафіксовано великі зміни у системі рівнів вищої освіти, забезпечення її якості та інтернаціоналізації. Кожна зміна призводила до заперечення та запобігання ініціатив, що стосувалося великої кількості країн, включених у простір. Незважаючи на складність процесу, було досить позитивних зрушень, тому що справжнє ЄПВО перетворилося на дійсне, а не уявне явище, про що свідчить постійне приєднання нових країн за останні два десятиліття. Сьогодні ЄПВО охоплює приблизно 38 млн. студентів із середнім рівнем виділення на освіту приблизно 0,95 % внутрішнього валового продукту (ВВП). У більшості країн відсоток виділення був стійким або зменшувався, що говорить про те, що попит на студентів не був співвідносним з виділеннями. Підключення вищих навчальних закладів у Сербії до Болонського процесу вимагало раціональне рішення за збереження існуючої національної освіти та поваги до іноземної. Через 15 років все ще існують суттєві відмінності між вітчизняною та європейською освітою. Застосування європейського досвіду та узгодженість національної та європейської освіти мають на увазі вирішення низки проблем як на державному рівні, так і на рівні кожного університету/факультету. У статті наведено аналіз стану вищих навчальних закладів у Сербії порівняно з ЄПВО в аспекті чисельності студентів, числа вузів, викладацького складу, виділення (витрати) на одного студента та впливу пандемії Covid-19.

Ключові слова: вища освіта; республіка Сербія, Європейський простір вищої освіти.

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