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E-learning perspectives in higher education institutions

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ABSTRACT

Use of modern ICT in education enabled a special type of studying known as distance learning. This form of learning needs to provide the level of knowledge and competences corresponding to the traditional learning. The basic value of this form of learning is that it enables learning anytime, anywhere in the world, with the intensity selected by the students themselves, etc. Although this form of learning is in frequent use all over the world, only 18 higher education institutions in the Republic of Serbia accredited at least one study program for distance learning. This paper focuses on the faculties within the University of Priština temporary settled in Kosovska Mitrovica, and the aim of the paper is to analyze the present status of the use of e-learning on these faculties. The special focus is on the analysis of potential options for accreditation of the e-learning study programs at these faculties.

1. Introduction

DISTANCE learning is the process of learning in which there is a physical distance between the knowledge source and the knowledge recipient. The origin of this form of learning was the opening of the so-called "open universities" in England in 1969 and Germany in 1974. Due to development of ICT, many institutions all over the world today implement this form of learning. The main characteristics of this type of learning are efficiency, practicality and flexibility. This form of learning enables learning anywhere in the world, not related to time, as students may learn as much as they want to, when they want to and where they want to (Cole and Foster, 2007). Moodle software tool is most frequently used for the distance learning system. It is estimated that today this tool is used by more than 30,000 education institutions worldwide. With the help of this tool, teachers upload teaching materials like texts, presentations, slides, etc. Consultations with teachers may be performed within the discussion forums, e-mail communication, etc. (Nikolić and Ružić-Dimitrijević, 2020).

Despite the increasingly critical role of e-learning in higher education, there is limited understanding of the satisfaction essentials of multi-generational students' cohorts undertaking online courses (Yawson and Yamoah, 2020). A quantitative investigation into the nuances of gender perspectives of E-Learning utility across the social categorizations of Generation X, Y, and Z in the current phenomena of accelerated usage of e-learning in the emerging multi-generational undergraduate cohorts has been reported in article (Yawson and Yamoah, 2021). In developing countries, there is a need to enhance Institutional factors to strengthen the drive to e-learning. Using different technology-enhanced learning tools and mechanisms showed that educational processes must be modernized and enhanced by technological progress (Ivanović et al., 2018). While blended learning in higher education is valued for various reasons such as addressing students' needs for flexibility, blended learning implementation remains a challenging process (Bruggeman et al., 2021). While there are some differences between the countries as well as between ideal and predicted expectations, the overarching results indicate that academic staff sees learning analytics as a tool to

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understand the learning activities and possibility to provide feedback for the students and adapt the curriculum to meet learners' needs (Kollom et al., 2020). The COVID-19 pandemic has forced a shift to online teaching and learning (OTL) in colleges and universities across the globe, requiring teachers to adapt their teaching in a very short time—independent of whether they were prepared (Scherer et al., 2020). At the global level, engineering education is experiencing a paradigm shift from teacher-centric to student-centric teaching- learning process, content based education to outcome based education, knowledge seeking to knowledge sharing classrooms, teachers to facilitators, traditional engineering disciplines to interdisciplinary courses, chalk and board (lecture based) learning to technology driven learning and the list goes on (Madheswari and Mageswari, 2020). Higher education institutions are among the most influential elements of implementing concepts of sustainability and sustainable development (Tasdemir and Gazo, 2020).

A general tendency at majority of faculties today, both in the Republic of Serbia and worldwide, is to introduce new forms of studying, with a significant share of distance e-learning. For example, in the USA, the distance learning has significantly developed over the past several years. In the period between autumn 2015 and autumn 2016 the number of students using the distance learning increased by 5.6%. The total number of students enrolled in the distance learning is 14.9%, and the number of students using the combination of distant and conventional learning is 16.7% (Kaljević, 2018).

A higher education institution implementing the distance learning needs to ensure that this system of learning provides the same levels of knowledge and competences as the conventional learning. To that end, the National Council for Higher Education of the Republic of Serbia adopted the appropriate standards that the higher education institutions need to meet in the course of accreditation for this type of learning. Apart from that, the institutions need to be appropriately equipped with hardware and communication technology, on one hand, and the corresponding software to deliver this kind of learning, on the other hand.

Distance learning is the subject matter of numerous researchers, both in the world and in our country (Milićević et al., 2014; Petrović, 2016; Jakovljević and Pejanović, 2017). Most of researchers primarily deal with the issue of e-learning in primary and secondary schools, as well as the faculties from Central Serbia and AP Vojvodina. Considering the aforementioned, we believe that it is of interest to analyze status and perspectives of the implementation of distance e-learning at the faculties of the University of Pristina temporary settled in Kosovska Mitrovica.

2. Analysis of status of distance e-learning in higher education institutions

The degree of implementation of e-learning at the ten faculties of the University of Priština temporary settled in Kosovska Mitrovica is analyzed in this paper. The founder of these faculties is the Government of the Republic of Serbia, and the teaching process is carried out in Serbian. After the armed conflicts on the territory of AP Kosovo and Metohija in 1999, the University temporarily changed its seat, moving first to Kruševac, and then to Kosovska Mitrovica.

The teaching process at the seven faculties is carried out in Kosovska Mitrovica, two faculties in Leposavić, and one in Lešak. In the academic 2018/19, there are 6.836 students in total, out of which 5.790 at undergraduate studies, 947 at master studies and 99 at PhD studies (Table 1)

To establish the present status in the field of e-learning implementation, a survey of 367 students from all faculties was performed. The written questionnaire was distributed and completed between 15 November 2018 and 15 March 2019. Table 2 shows that out of 367 respondents, 208 students (56.68%) are residents of AP Kosovo and Metohija, 154 students (41.96%) are residents of Central Serbia, and 5 students (1.36%) are from AP Vojvodina.

Distance e-learning has a perspective, as indicated by the fact that all 367 students-respondents own a PC. One of the questions referred to the number of years that the students owned a PC, and 13 responded that they owned a PC between 1 and 3 years, 17 between 3 and 5 years, 47 between 5 and 7 years, 78 between 7 and 9 years, 95 between 9 and 12 years, and 117 students owned a PC for more than 12 years

Table 1
Number of students in faculties studying in the school year 2018/19.

Faculty	Number of students			Total
	Basic academic	Master academic	Doctoral	
Faculty of Economics	309	83	6	398
Faculty of Madical Sciences	1100	–	51	1151
Faculty of Agriculture	230	43	5	278
Faculty of Law	954	43	6	1003
Faculty of Natural Sciences and Mathematics	612	121	10	743
Facultu of Sports and Physical Education	406	75	–	481
Faculty of Technical Sciences	618	240	6	864
Faculty of Arts	166	37	–	203
Teacshers Education Faculty	315	80	–	395
Faculty of Philosophy	1080	225	15	1320
TOTAL	**5.790**	**947**	**99**	**6.836**

Table 2
Number of respondents according to their residence.

No	Residence	Number	Percentage
1	AP Kosovo and Metohija	208	56.68
2	Central Serbia	154	41.96
3	AP Vojvodina	5	1.36
	TOTAL	367	100.00

The base for the implementation of e-learning is good knowledge of ICT, and the students in this questionnaire evaluated their knowledge in the field of ICT, as well as the degree of the implementation of this technology at their faculties (Table 3).

The highest percentage evaluated the assistance provided by ICT in learning with 4 (37.87%), whereas the lowest percentage of respondents (4.36%) evaluated it negatively. The average evaluation mark for this question was 3.74.

In the following questions, the students evaluated their knowledge of ICT, and the obtained results indicate that the average evaluation mark is 3.53. The highest percentage of respondents, or 35.69%, evaluated it with 4, somewhat lower percentage of respondents (34.61%) evaluated it with 3. Still, there are students evaluating their knowledge of these technologies with 1 (the lowest percentage, or 2.45%).

The average evaluation mark for the question on the Internet access is 3.75. The largest percentage of respondents evaluated it with 4 (32.15%), then with 5 (31.61%), and the lowest evaluation mark – one – was stated by 5.99%.

The question on introduction of e-learning is very important, as it pertains to evaluation of the degree of ICT implementation on faculties, and the average evaluation mark of the respondents is 2.86. The results indicate that the highest percentage of respondents (43.6%) evaluate it with 3, and the lowest percentage of respondents (6.54%) with 1.

To establish the status of the implementation of e-learning at the analyzed higher education institutions, a very important question in these questionnaires pertained to Moodle on the web sites of the faculties. Out of 367 students – respondents, only 59 provided a positive answer to this question. The conclusion based on this result, as well as our visits to the web sites of the 10 analyzed faculties, is that only the Faculty of Medicine in Kosovska Mitrovica offers the option of e-learning with Moodle.

Table 3
Results of the questionnaire with regards to evaluation of *ICT*.

No	Question	Evaluations (number)					Evaluations (%)				
		1	2	3	4	5	1	2	3	4	5
1	Evaluate the level of assistance provided by ICT in learning	16	23	96	139	93	4.36	6.27	26.16	37.87	25.34
2	Evaluate your knowledge of ICT	9	39	127	131	61	2.45	10.63	34.61	35.69	16.62
3	Evaluate the quality of Internet access	22	33	78	118	116	5.99	8.99	21.25	32.15	31.61
4	Evaluate the level of the use of ICT at your Faculty	24	50	160	104	29	6.54	13.62	43.60	28.34	7.90

3. Perspectives of distance e-learning in higher education institutions

Primary and secondary schools in Australia represent a good example of successful implementation of distance e-learning. Such high schools may not be attended by all students, but only those meeting at least one of the following conditions: a) students who are not able to attend classes due to geographic isolation; b) students temporarily living with their parents in other areas or outside of Australia; c) schools in which the students attend classes do not have teaching subject that the students want to attend, or the timetable of classes is not suitable for them; d) because of health reasons, students are not able to follow classes; e) students cannot attend classes because they play sports or are engaged in arts; f) students attend classes of specialized teachers that are not taught in the schools in which they attend classes; g) students have transferred from one to another school, etc. However, enrollment into primary schools with this type of learning is significantly stricter, as a pupil may not enroll a primary school only due to geographic isolation or a longer travel. In these schools, teaching is delivered through two services: 1) *"Center"* – application for web conferences for synchronous communication and lectures, and 2) "*Moodle*" – the learning management system – for asynchronous communication, teaching materials and tasks (Džigurski et al., 2013).

Distance learning as a new form of studying is legally verified in the Republic of Serbia. The first legal act defining this type of learning is the Strategy for the Development of Information Society in the Republic of Serbia 2020 (Strategy for the Development of Information Society in the Republic of Serbia 2020), in which, among other, the need for the introduction of the modern concept of e-learning and open distance learning into the educational system is emphasized (Bruggeman et al., 2021). Based on this educational document of the Serbian Government, distance learning is governed by the Law on Higher Education (Law on Higher Education 2020) and the Rulebook on Standards and Procedure of Accreditation of Higher Education Institutions and Study Programs (Rulebook on Standards and Procedure of Accreditation of Higher Education Institutions and Study Programs 2020). According to data of the National Entity for Accreditation and Quality Assurance in Higher Education, out of 270 higher education institutions (170 state-funded and private faculties and 80 schools of applied studies), only 18 institutions have at least one accredited distance learning study program (Ishodi akreditacija visokoškolskih ustanova i studijskih programa u Republici Srbiji 2020).

The analysis of the accredited study programs on the ten faculties within the University of Priština temporary settled in Kosovska Mitrovica shows that none of these faculties have accredited distance learning programs. Only the Faculty of Medicine in Kosovska Mitrovica has the Moodle tool installed at its web site, and it can be used for e-learning. However, that Faculty does not have an accredited distance learning study program.

The results of our research show that all the analyzed Faculties have their own computer centers, Internet connections of a rather good speed, and their web sites. On the other hand, the respondents evaluate the application of ICT with 3.74 on average, and their knowledge in this field with 3.53. These data unequivocally indicate that the analyzed faculties have good technical options for accreditation of study programs, in various study fields, at which teaching would be delivered through the distance learning.

According to regulations in our country, distance learning is the form of learning in which students are not under obligation to attend classes, practice classes, etc. physically, but they are under obligation to attend preliminary exams and the final exam, and fulfill other pre-exam duties. Compared to other faculties in the Republic of Serbia, students studying at the faculties in the north part of AP Kosovo and Metohija are facing the issue of their own security. Looking at the results of the respondent (Table 2, Fig. 1), it may be observed that 56.68% of them reside at AP Kosovo and Metohija.

Some of those students live on the north of our southern Province and they are in a somewhat better position than the students coming from the southern part of the Province. After the war conflict in1999 on the territory of AP Kosovo and Metohija, the majority of Serbs left the Province, with some of the Serbs staying scattered in smaller enclaves (Fig. 2). The consequence of war conflict is that the security of the students from the Serbian enclaves is significantly threatened as they travel to their faculties located on the north of the Province.

Considering the security issue of the students residing in the southern part of AP Kosovo and Metohija and studying on the north of the Province, as well as the results of the students surveyed, it is clear that there are justified reasons for the faculties within the University of Priština temporary settled in Kosovska Mitrovica to put an effort into accrediting the distance learning study programs. This form of learning, implemented through the use of contemporary ICT, would enable numerous benefits to the students: a) gaining knowledge at the place of their residence, b) reduction of security risk due to reduced travel through unsecure Albanian areas, c) reduction of the cost of studying, d) stay of highly educated staff at their place of residence, d) stay of Serbs and economic development on the territory of AP Kosovo and Metohija, etc.

The best example of distance learning in the Republic of Serbia is the study program of Information Systems and Technologies at the Faculty

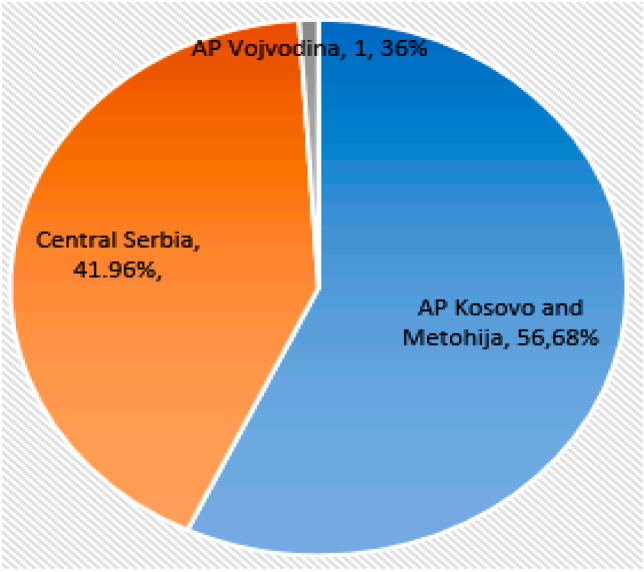

Fig. 1. Number of respondents according to their residence.

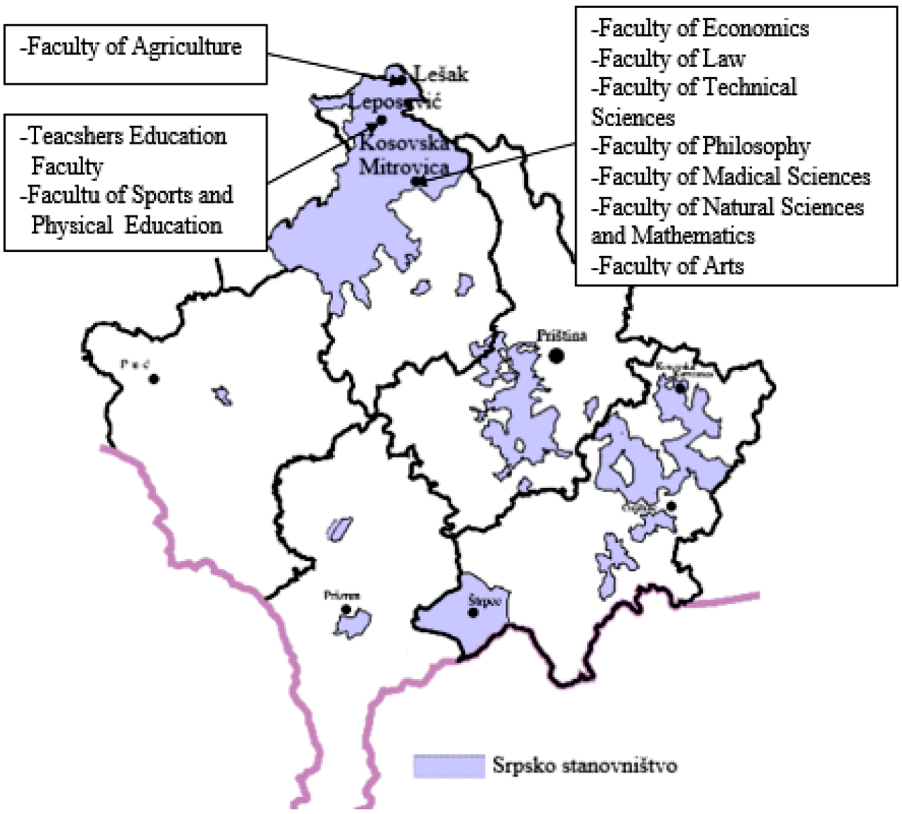

Fig. 2. Location of the faculties in the north part of AP Kosovo and Metohija with regards to Serbian enclaves the students come from.

of Organizational Sciences in Belgrade. The program was created by the teachers and associates of this Faculty, experts in the field of information technologies. With regards to these good practices, the conclusion is that study program creation, through the implementation of the distance learning model, should be initiated by the ICT experts teaching at the University of Priština temporary settled in Kosovska Mitrovica. Those are the teachers and associates of the Electrical and Computing Engineering at the Faculty of Technical Sciences in Kosovska Mitrovica, and Informatics at the Faculty of Natural Sciences and Mathematics in Kosovska Mitrovica.

4. Conclusion

Higher education institutions, both in the world and in the Republic of Serbia, provided a response to the age of ICT expansion by initiating a new form of studying – the distance learning. Unlike the developed countries that use this form of learning more and more, the higher education institutions in our country are falling rather behind. Although there is a legal option, according to the data of the National Entity for Accreditation and Quality Assurance in Higher Education, only 18 institutions (state-funded and private) accredited at least one distance learning study program.

Our research shows that none of the ten faculties within the University of Priština temporary settled in Kosovska Mitrovica have accredited distance learning programs. Only the Faculty of Medicine in Kosovska Mitrovica has the Moodle tool installed at its web site, and it can be used for e-learning of certain courses.

Apart from numerous advantages of the distance learning, the Faculties of this University have an additional reason to accredit study programs using this method of learning. This type of studying is particularly suitable for the students living in the enclaves in the southern part of AP Kosovo and Metohija whose security is threatened, as they have to travel to the territories inhabited only by the Albanians. This is how the students would come to Kosovska Mitrovica less frequently, as they would engage in e-learning from their homes. They would come to Kosovska Mitrovica only to take preliminary exams and other pre-exam duties, as well as the exams. High-quality teaching staff at this University, together with the use of contemporary ICT in teaching, guarantees a certain road to accreditation of distance learning study programs.

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