



THESIS - Vol. 9, No. 2, Autumn 2020

International Research Journal

 Kolegji AAB
CILESI. LEADERSHIP. SUKSESI


ISSN: 1848-4298 (Print)

ISSN: 2623-8381 (Online)

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How to cite this article:

Butler, W., Maraj, A. and Qarkaxhija, J. (2020). Online learning challenges and opportunities in Higher Education Institutions (HEIs) in developing countries. *Thesis*, 9 (2), 281-299.



Published online: December 23, 2020.



Article received on the 30th of August, 2020.
Article accepted on the 2nd of December, 2020.



Conflict of Interest: Authors declare no conflict of interest.

Online learning challenges and opportunities in Higher Education Institutions (HEIs) in developing countries

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Abstract

The rapid development of information technology has influenced the change of concepts of the learning environment. Today, educational institutions are increasingly focused on teaching through technology. Many universities around the world are practicing online learning thanks to the use of technology and broadband capacity that developed countries have implemented in their core and access infrastructures. Seeing the benefits of learning through technology, developing countries are also seriously considering using the benefits of technology for learning. However, there are some challenges that need to be overcome, especially in developing countries, such as poor network infrastructure, lack of ICT (Information and Communication Technology) knowledge, poor content development, and so on. This gap is seen not only between countries, but also within countries. In this paper, we will discuss the main challenges and opportunities that online learning brings in HEIs in developing countries, with emphasis in Kosovo.

Keywords: Online learning, technology, education, HEI, digital learning, Kosovo

Introduction

E learning is defined as a learning process in which learners can communicate with their teachers and their peers, and can access teaching materials over the Internet (Curran, 2004). Online learning involves some applications and processes used to learn. It comprises mostly web-based learning, discussion boards, online assessment, course administration, virtual classroom, etc. However, online learning is delivered through the Internet and LMS (Learning Management Systems) systems through the use of technology. There have been many attempts to identify what is needed to promote the adoption of technologies within higher education institutions (HEIs). Higher education has a greater impact on society and economy, so greater emphasis should be given to it. The benefits of online learning in higher education include comparable access, quality education and the ability to close the digital divide. Learning online saves teaching delivery time, helps students explore learning, and complements essential physical interaction in a hybrid learning environment. Major universities with large on-campus teaching programs, such as Queens University in Canada, the University of London in the United Kingdom, and the University of Wisconsin in the USA, have been offering distance education programs for over 100 years (Bates, 2001). The main institutions in the USA historically have been involved in distance learning and education, such as Penn State University and the University of Wisconsin. Therefore, learning at a distance is not new!

With the development of web technologies and more ubiquitous Internet access, online learning is becoming more and more acceptable to people. Different projects were established, such as CALAT; WebCAI; The University of the Air; WDE University, etc. (Shee and Wang 2008; Rovai, 2004). Teachers and students both benefited by online publishing courses on the web (Barolli et al., 2006; Fachinger et al., 2004).

Mobility in higher education is contributing to the expansion and exchange of knowledge and ideas. Mobility is essential to ensure a quality education and cooperation with other parts of the world. Therefore, it is of particular importance to create the necessary infrastructure, mainly technical infrastructure, so that students and teachers can exchange knowledge among them, regardless of their location. The development of e-learning tools increases the mobility possibilities. Virtual mobility programs for students and academic staff is a growing trend worldwide. These e-learning tools are used not only for virtual mobility but also for complementing physical mobility programs (BEST Symposium on Education, 2007).

Even before COVID-19, there has been a high growth in the use of technology in education. It is worth mentioning that in 2019, investments in this area reach the value of 18.66 billion dollars only in US. The overall market for online education is projected to reach 350 billion Dollar by 2025. However, a significant increase in the use of e-learning technology has been observed during COVID 19 (Cathy, 2020).

Online learning has been proposed for years, but received very little enthusiasm from universities, students and academics in some countries, especially in developing countries. With the current requirements for higher education in developing countries, online learning can provide a reliable access to course materials, open quality educational resources and enable HEIs to use a variety of pedagogical and collaborative tools for involving students in reflective and critical thinking. Unlike on-campus learning systems, students in online learning are not under unfair pressure to learn; on the contrary, they may have sufficient flexibility to learn.

Despite the many benefits of online learning, many of the educational institutions in developing countries, such as Kosovo

are challenged by the network's insufficient capacity to provide stable Internet access for online learning. Many of the institutions do not have enough capacity to synchronize student learning, technical support systems as well as use innovative educational technologies. Also, ICT systems and general infrastructure including data security and privacy, high speed internet, users' competencies and institutional policies are the main barriers for successful online learning.

In Kosovo business is in the daily lives of its people, technological services such as the internet, smart phones, social media and e-commerce are also widely used. However, these services generally have not been applied to education.

So far, many researches have addressed the importance of online learning implementation in the higher education system, but there is still a lack of a well-accepted model. Therefore, the development of a unique platform that defines the learning outcomes and manages knowledge is very important.

In the next section of this paper, we will describe the literature review. In section 3, we will describe online learning in developing Countries; case study Western Balkans. In section 4, we will present the Transition from traditional classroom learning to online learning in Kosovo during COVID-19. Conclusions and recommendations are drawn in the last section.

Literature review

For years, numerous studies have been focused on identifying factors that make technology integration successful in online learning. However, many scientific researchers have addressed the online learning issue and the implementation of different learning models in HEIs. In this section, we will analyze the scientific work done by others with a special focus on online learning in the higher education system.

The authors in Babu (2015) discussed the e-learning environment in both the developed and developing countries. They concluded that the main factors of the successful implementation of online learning are financial support from government as well as motivation of students and teachers.

Online learning strategies are discussed in several papers and journals. Curran et al. (2004) examined the online learning strategy adopted by universities, from the perspective of: widening access to education opportunities, quality of learning enhancement and reducing the cost of higher education. It was concluded that the most striking characteristic of the e-learning strategies adopted by universities is their diversity, and inherent characteristic of adaptability in use and flexibility in application.

There are also many strategies and plans proposed for online learning that provide opportunities for the development of a more comprehensive approach to the provision of information and services via technology. Glasgow et al. (2013) have discussed the strategy for developing a specific approach for service provisioning via mobile devices that many staff and students carry around with them every day. By establishing an initial service with a small number of mobile devices, the University and the student can build together confidence in the approach and the reliability of mobile delivery as a viable option for service delivery.

Strategies, drivers and barriers for online learning are discussed in several studies, such as MacKeogh et al. (2009), Sharp et al. (2006). Students' Perceptions of E-learning in University Education is discussed in Keller and Cernerud (2002). E-learning models and investigating their value for developing an e-learning strategy are discussed in Engelbrecht (2003), Lee et al. (2009), Carver et al. (2007), McLaren (2008).

Critical success factors for e-learning in developing countries are discussed in Bhuasiri et al. (2012). They identified

multiple factors that influence the success of e-learning systems from the literature, and compared the relative importance among two stakeholder groups in developing countries, ICT experts and faculty.

The effect of individual-level cultural values on users' acceptance of E-learning in developing countries is examined in Tarhini et al. (2016), where a structural equation modeling of an extended technology acceptance model was presented.

In this paper, we will discuss opportunities and challenges that online learning brings to HEIs in developing countries. There will be a particular emphasis on the challenges that Kosovo will face during the process of transition from traditional classroom learning to online learning.

Online learning in developing countries; case study Western Balkans

Higher education institutions in the Western Balkans (WB) have begun to use ICT as one of the main facilitators for educational innovation and the economic model for online learning. Universities are in a situation where they need to improve their educational resources and current practices in order to survive. Western Balkan countries, as developing countries, are facing great difficulties in successfully transitioning to online learning. Almost all WB countries have approximate characteristics, in terms of ICT infrastructure, education system, but also teaching curricula. In the following subsections, we will describe shortly the main challenges and achievements of Western Balkan countries toward implementing online learning.

Systems of Higher education are experiencing a significant change, thus the regulatory environment will be affected by these changes as well. As we can see from Table 1, none of the Western Balkan (WB) countries has developed a regulatory

framework for e-learning, also the WB have yet to create skilled workforce to support online learning. WB countries have developed Education Strategies where e-learning is mentioned within these strategies. But, with the exception of Serbia, other WB countries do not have any strategy only for online learning.

Connectivity is considered the main indicator of e-Learning readiness (Barolli et al., 2009). In order to compare WB countries we have used the data from Networked Readiness Index rankings of the World Economic Forum, 2019 (Dutta and Lanvin, 2019). Figure 1 will show only the ranking of WB countries.

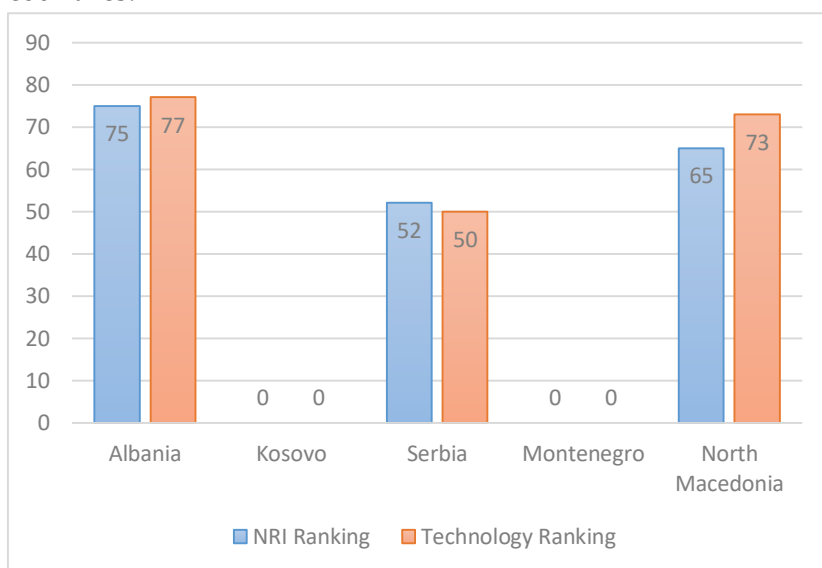


Figure 1. Network Readiness Index 2019 (Dutta and Lanvin, 2019)

The Network Readiness Index 2019 ranks a total of 121 economies. The top performer in this year's index from WB Countries is Serbia, followed by North Macedonia and Albania. The highest-ranked country when it comes to the Technology is again Serbia, followed by North Macedonia and then Albania. Kosovo and Montenegro are not listed in this document.

North Macedonia

Recognizing that there is a constant and very dynamic change in the teaching environment, the Ministry of Education and Science of the Northern Macedonia have given special importance to the use of ICT at all educational levels. A Strategy for Education 2018-2025 and an Action Plan 2018 have been launched. One of the goals of this strategy is intensification of the usage of ICT in education through establishing an e-learning portal and learning management system. Also, this strategy states that there is a need to continuously develop teachers' skills to use new technologies and ICT tools in education. Therefore, in order for these goals to be reached, the strategy mentions the need of developing advanced competences which also include technology and digital competences. This means that there is a need to incorporate digital technology and ICT into teaching, but also providing training to teachers in the use of the new technologies and ICT in online learning (EACEA, 2019; Aram Avagyan et al., 2018).

There are some initiatives from HEIs in North Macedonia for online learning. There is a small community in higher education in North Macedonia that uses Moodle as a tool for E-learning. Moodle is used mainly at the private Universities (Poposki, 2010). These private Universities, through digital platforms are offering to their students the latest advances in the e-learning environment. In particular, private universities in Northern Macedonia are promoting their modern and flexible curricula in accordance with the demands and needs of students. This modern approach is very well received by students.

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	North Macedonia	Kosovo	Albania	Serbia	Montenegro
National strategy for e-learning	NO	NO	NO	YES	NO
Planning techniques and approaches for e-learning	Ad-hoc	Ad-hoc	Ad-Hoc	YES	Ad-Hoc
Number of skilled workforce to support e-learning	Small	Small	Small	Small	Small
Governmental support in broadband Infrastructure	Medium level of support	Medium level of support	Medium level of support	Medium level of support	Medium level of support
Regulations	NO	NO	NO	NO	NO
E testing	Some Private Universities	Some Private Colleges	Some Private Universities	Some Private Universities	Some Private Colleges

Table 1. Online learning activities in Western Balkans Countries

Albania

Albania is increasingly encouraging the use of ICT at all levels of education. With the support of the United Nations, the Ministry of Education and Science is merging plans for a comprehensive new e-School program, giving students the skills and knowledge of the Internet and IT, which is much needed (Barolli et al., 2009). On the other hand since education is one of the main priorities of the Government, priority should also be given to the National Information and Communication Technologies Strategy. One of the goals of Albania's strategy is *Promoting Basic Computer Literature – ICT Education for All*. The Ministry of Education has drafted plans for equipping HEIs with computers and access to the Broadband Internet, as well as for the establishment of the Albanian academic research network (Barolli, Sevrani, 2009). E-

learners in Albania have the proper infrastructure; broadband connectivity, smart phones, PCs, etc.

Montenegro

Montenegro has launched the strategy for Information Society development for 2020. Among others, this strategy focuses on e-education. The main goals are increasing the number of computers in HEIs, training more teachers to use computers, and increasing the number of children using the Internet. This strategy emphasizes the need for new and modern teaching methods. In Montenegro, every year, the Ministry of Education prepares specific plans to improve conditions for using ICT in teaching, such as, for example, signing contracts with telecommunication operators to improve internet connectivity in schools, training teachers in IT security, and enhancing online collaboration between teachers (EACEA, 2019; ISCED, 2016).

Montenegro has used an e-learning concept using Moodle as a platform for course management, which was established in 2007 (Radulovic et al., 2011) at the University of Montenegro. Most of the courses at the University of Montenegro use Moodle for lecture notes, some use it for the administration of exams and tests, and only a few use it for streaming lectures and delivering the complete course in an online form (Popovic et al., 2018).

Serbia

In 2020, Serbia launched the Strategy for Education Development and online learning, in particular. This strategy highlights the ICT role in raising teaching and learning quality at all levels of education. The strategy also focuses on making students literate for life in the modern world. The Institute for Education Quality and Evaluation (EQE) of Serbia is developing instruments to evaluate key competences, including digital skills. According to

some statistics, 95% of schools have internet access, yet only 47% have access to Wi-Fi in the classroom (Digital, 2017; MESTD, 2017). About 56% of teachers report that they require professional development in ICT related fields, whereas about 34% of teachers participated in training on new technologies, including ICT. Although the Government and some EU organizations have invested in Broadband networks, two thirds of the schools with internet connections have internet speed up to 16 Mbps, which is not enough.

Challenges for transition from traditional classroom learning to online learning in Kosovo

According to MEST (2016), Kosovo is a country with a high degree of use of Information and Communication Technology (ICT). According to STIKK (2013), it is estimated that 76.6% of Kosovo's population are Internet users, mainly for entertainment purposes. This rate is consistent with that of developed countries. But ICT is not properly integrated in the curriculum, teaching or education management. The integration of ICT into online learning is mentioned in the 2017-2020 strategic education plan and remains an important priority. Specifically, the Ministry of Education and Science has developed a draft e-learning strategy and has equipped schools with various teaching aids.

In Kosovo, universities and colleges are using technology a lot for learning. Some private colleges are more advanced in using technology for learning purposes compared to public institutions. This has also been proven during the time of COVID-19, where private colleges have managed to switch completely to online learning more efficiently as compared to Public Universities. In addition to conducting lectures and online

exercises, they have managed to successfully complete the online testing as well.

Presently there is no Government strategy for online learning in Kosovo and there is not enough support for HEIs ready to switch to online learning. Therefore, we can say that there is a lack of organized and institutional support for online learning.



Figure 2. Transitional phases from traditional classroom teaching to online teaching

Since the coronavirus outbreak, online classes in Kosovo have become the cornerstone of modern higher education. All of the universities and colleges have made a complete transition to online teaching. Before the obligatory transition from traditional classroom learning to online learning, the online courses came in many forms, from teaching with technology to hybrid approach classroom and online (Figure 2). Now, the only option that HEIs are using is online classes. This situation is changing education irreversibly but it is still too early to observe the outcomes.

Online classes, whether fully or partially online, do have stumbling blocks. The obligatory transition to online classes may cause lower enrollment rates in universities and colleges. Earlier studies show lower completion rate for online classes compared to traditional classroom learning.

The main barriers for online learning in Kosovo are technical difficulties. Both students and teachers are somehow frustrated with complications, and these difficulties can lead to students engaging less with the courses. Teachers may also face such problems, often devoting time to fix technical issues

(Amber et al., 2013) as well as uploading and editing content can become a very complex task.

Online learning asks that students take more responsibility for their learning and can transform them from passive to active learners. But this can be very challenging for some students. They need more motivation, discipline and organization in order to be successful. A major problem with online learning in Kosovo is accessibility of online courses. Also, the availability of internet connection, electronic devices such as laptops or mobile phones, electricity supply stability or suitable learning environment change from student to student and are identified as challenges that need to be addressed

Conclusions and recommendations

The evolution of online learning has been discussed in the context of COVID-19. Kosovo is no exception. Online learning, in fact, has been proposed for years, but it has not been taken very seriously by HEIs. It was not until the outbreak of COVID-19 that the HEIs worldwide had to design online plans. The challenges are greater in developing countries. Until now, almost all colleges and universities have included online learning in their strategic plans, but not all acted with determination to implement these plans. Now, after COVID, they will for sure. They will also realize how essential it is to have a robust online learning technology implemented on their premises. Also, they will realize how important it is to invest in training the teachers for successful implementation of online learning. The obligatory transition to online learning, especially in developing countries, has brought to light the fact that not all can access high quality broadband from home. During COVID-19, it was proved that a larger number of students do not have access to end devices (laptops, desktops, video and audio systems, smart phones)

needed to be effective online learners. Many students in developing countries, such as Kosovo, lack Internet at home and more students than originally envisioned may be relying on computers with limited capacity. Some students do not have a computer. We have learned a lot during this period of physical distancing and lockdown. The period of online learning has just begun. What will happen next is unclear, but what is known is that HEIs need to be prepared for a future called “*full online learning*”.

However, there are challenges to overcome, such as: reliable internet access, access to end devices, stable power supply, etc. This gap exists even in developed countries but is much more pronounced in developing countries. Also, moving from classroom learning to online learning raises issues related to access and equity.

Recommendations

Whatever strategies governments of developing countries choose to adopt, one should know that the effective use of e-learning for education purposes is dependent on a low-cost usage of telecommunication services and wide accessibility to such services. There are a lot of strategies that can be used by governments to encourage the growth of online learning. The choice of strategies for online learning depends to some extent on political ideologies, but also on the need for education and training. However, there is a wide range of potential risks, as well as benefits to each of these strategies. Online learning strategies should be included within a framework of government policies for economic and social development. These strategies are lacking in developing countries and some developed countries.

The following are some of the recommendations for the Ministry of Education, Innovation and Science and Government of Kosovo: Implications for government planning and support for broadband infrastructure, developing a national strategy for e-learning, careful regulation to ensure access by all participants, tax breaks to infrastructure suppliers to promote investment, tax breaks on computers and Internet services to end users, thus encouraging greater use and supporting private-sector investments.

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