HIGHER EDUCATION IN AN ONLINE ENVIRONMENT - A BRIEF OVERVIEW OF THE EXPERIENCE OF INTERNATIONAL BALKAN UNIVERSITY

Aleksandra Porjazoska Kujundziski

International Balkan University, Faculty of engineering, Makedonsko – Kosovska Brigada, bb, 1000, Skopje

Abstract. *The crisis caused by the SARS-CoV-2 virus has disrupted lives, economics and education around the world rapidly and beyond a scope that one could imagine. International Balkan University (IBU) quickly adapted to the "new normal" and replaced classical classrooms with the online synchronous online mode of education with a real-time video-conferencing and interactive teaching, using Zoom platform. The university used the online management system Hello for online class sessions. The university has opened an Online Learning Centre to allow real-time lectures, but also e-conferences, webinars, defence of graduate and master's theses, etc. Exam.net platform was used by most instructors 80% in the realization of the exams, in combination with Zoom service for monitoring the students and preventing cheating. An attempt was made to relate the initial observations about the content of IBU students regarding online teaching and examination with the success of students' cohort. The pandemic affected the internationalization of the university, however it hasn't had any negative influence on the research activities of the academic staff. This preliminary study attempts to start further analysis directed toward the determination of the effectiveness of the online teaching and learning process at IBU.*

Keywords: *online teaching, higher education, COVID-19 pandemic, International Balkan University*

1. INTRODUCTION

COVID-19 crises forced the global lockdowns and abrupt restrictions of all aspects of life [1, 2] including conversion of conventional face-to-face instruction to the online format [3, 4]. Schools and universities all over the world met with the challenges about the way to proceed with teaching and learning activities, and how to "save" the academic year, but at the same time, caring about the public health and minimizing the risk of the spreading the virus [3]. In March 2020, over 1.5 billion students and pupils all over the world have been affected by universities and schools' closures due to the COVID-19 pandemic, while in December 2020 due to partial reopening of the schools, the number dropped to 314 million learners or 18% of the total number of enrolled learners [4]. Virtual classrooms have become a significant part of the education, requiring the immediate transition of the face-to-face classes to the online mode. On the other hand, the academic staff was provided only with deficient information consisting mainly of technological help [5], without paying attention about the pedagogical issues, considered as most suitable in virtual classrooms to maintain the quality in education [6,7]. Also, the application of digital technologies in the online settlement increased, and thus the need for raising the awareness of teachers about the application of digital tools in the improvement of the teaching efficiency. A lot of studies advocated the different role that teachers have in online instructions compared with the teaching in the traditional classroom settlements [8, 9]. The new role of instructors requires training and institutional support [10].

Some universities have already established some model of remote teaching and learning, introducing distance learning or online teaching or a hybrid teaching and learning models (a combination of traditional face-to-face teaching and distance learning) before the start of the world health crisis [11, 12]. The successful realization of the online study programs relies on the provision of suitable tools supporting online teaching and assessment arrangements [13]. It shows online teaching to be suitable for learners with full-time employment and those having families. Increased number of learners with full-time employments, elder students with families and long-life learners, increase the demand in the orientation of the universities toward online teaching and learning [14].

The study carried out by the European University Association [11] showed that over 80% of the universities (Fig. 1) implemented online learning and teaching modes before the global health crisis, and they have established learning centres that support academic staff using digital tools in the improvement of teaching and learning in their courses.

The rapid interest in online education increased with the closure of the universities, although many professors and students had never experienced this model of teaching. It was found [11] that over 70% of the academic staff in Ireland had never delivered classes online, and the situation was similar in most European countries. But, the situation dramatically changed with the beginning of the pandemic, there has never been so big number of universities experiencing online teaching and learning [11].
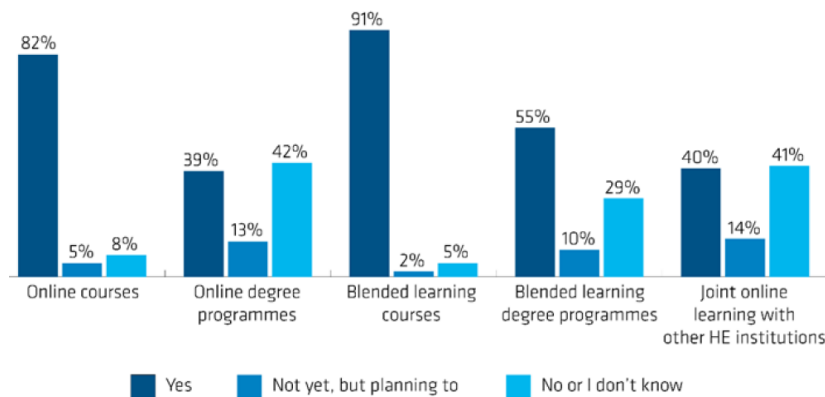
Figure 1 Types of e-learning offered by institutions. Source [11]

Some surveys indicated satisfaction of both, the students and the staff with implementing online education [11], but some data showed that students prefer more classical face-to-face teaching, particularly in learning difficult concepts [15] and those accepting a deep level of learning [16].

The transition from traditional on-site to an online education requires longer planning and preparation, involving the teacher's familiarity with digital learning and instruction tools, as well as the application of the suitable pedagogical approach. So, the emerged adaptation toward online teaching format is recognized as remote teaching. An additional concern is the minimization of plagiarism and cheating during exams. Therefore, the creation of the system for fair and generally accepted assessment approaches in the virtual environment is quite challenging [17, 18].

1.1. ABOUT STRENGTHS AND WEAKNESSES OF ONLINE EDUCATION

Some countries recognized online teaching as the opportunity for the learners who once felt difficulties to reach some higher education institution, particularly if it was located out of the region. The number of online programs increased, particularly in the United States of America, because of the financial aid offered by the country, recognizing an online education as the possibility to increase the number of well-educated people in the country [19, 20]. Costs of developing and starting-up online teaching are high and include the provision of hardware and software platforms for courses delivering, training, but, on the other hand, online courses may attract new students resulting in the profit increase [21, 22]. Online learners don't travel to a certain location, they can join the classes from home and, at the same time, online teaching can reach a bigger number of students [21]. The suitable teaching methodologies the teachers implement can help students in adaptation and experience as a part of the community. Some concerns arisen about the application of pedagogical practices, suitable for an online classroom have been a concern of the provision of an efficient realization of engineering education in the virtual environment [23]. Applied pedagogies supporting critical and creative thinking, collaboration and interaction are oriented toward project-based, hands-on concepts, interactive labs, data analysis, scientific simulations [24], active learning [25], flipped classroom [23, 26], problem-solving approach [27] and project-based learning [28]. Including discussions with students during online classes increase students' success. It was shown that the students feel more comfortable and freer during online discussions and have more time to focus and form their opinions and ideas, leading to better integration in the online classrooms. Often as a measure of the student-instructor interaction and the level of teacher's interest and care for them, one is using the feedback of the instructors on the students' performance [29].

Institutions offering online courses were more concerned about the rate of successful completion of the courses and not only in the number of enrolled students. Some studies showed that effective teaching, the commitment of the teachers and students and their self-discipline can improve the achievements of students.

Providing quality in the online teaching requires a combination of the following segments teaching and learning techniques, methods for the evaluation of the gained students' knowledge and skills; application of technology that makes the planned things feasible; human and material resources needed for the realization of the selected methods. The question is how to measure the quality of online education?

Indicators of quality in teaching and learning are learning outcomes, interactions between the participants in the education process (student-students, student-content and student-academic staff), their satisfaction and the motivation, Fig. 2 [23]. An interaction is hard to be achieved when the online teaching is prepared quickly, i.e., when the material is delivered by the teaching staff and later used by students to work and study.
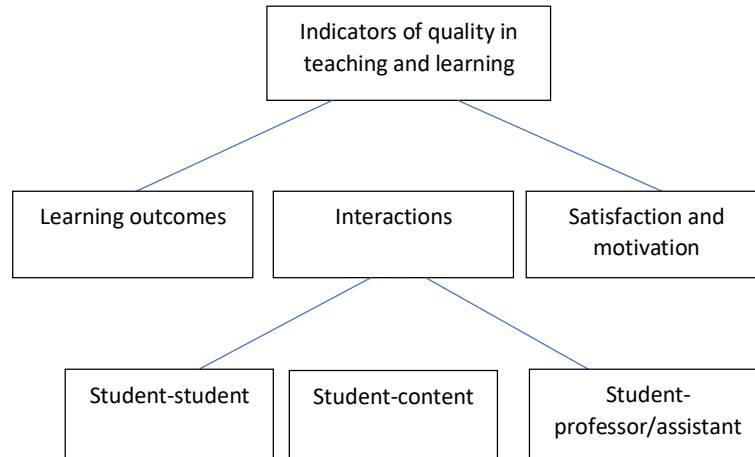

Figure 2 Indicators of teaching and learning. Source [23]

The first step in the quality assurance of the study program is its accreditation by the national and international authorities. Many programs that substituted classical teaching and learning to the online format with the start of the World health COVID-19 crisis, haven't been accredited for this mode of education [23]. Social interactions and communication approaches are not included in the design of classical programs while being critical for the online environment [30]. Design of the curriculum, the course content and the course material need to facilitate the three types of interactions student–material, student–students, and teacher-learner, Fig. 2 [23]. Studies focused on the interactions confirmed that in online education they are difficult to be achieved. Factors showing unsuccessful online teaching include isolation - when students cannot interact with their peers; lack of computer skills, frequent technical difficulties and educational deficiencies [30]. Yet, if the interactions are planned and integrated well, their realization and how they are achieved may increase the learning outcomes. Online teaching recognizes learning as both, a social and a cognitive process, not merely a matter of information transmission [31].

Internet connections and other technical problems obstruct effective online teaching. Organization offering online education needs to provide technical assistance for students and academic staff [20].

An additional drawback for the online settings is the ethical problems such as lack of honesty, integrity and reliability among the students. Some perceptions are that there are more opportunities for cheating, plagiarism and dishonest practices. The education institutions develop policies, procedures and guidelines to minimize or eliminate these ethical issues.

There is a general perception that the quality of education in an online environment is lower than the education performed in onsite settings. Some organizations, while they are not qualified, attempt to gain profit offering online education. This is considered as a reason for the negative attitude toward online teaching and learning [32].

This study tries to give a brief overview of the adjustment of the teaching process from traditional in Campus education with the online mode, in the case of the International Balkan University.

2. SOURCE OF DATA

Course Success Report, submitted by the instructors of the International Balkan University at the end of every semester, was used for the calculation of the percentage of students that failed in the exams and need to retake courses for spring semesters in the academic years 2018/2019 and 2019/2020. The percentage of failed students per study year was calculated. The analysis includes only courses with data given for both academic years. Thus, the same courses have been taken into account.

Information related to the research activities of the academic staff has been taken from the Academic Yearly Evaluation Report that the academic staff submits at the end of the academic year.

Statistics about the number of realized incoming and outgoing mobilities for both staff and students within Erasmus+ program have been given by the International Relations Office of the International Balkan University.

3. EXPERIENCE AT INTERNATIONAL BALKAN UNIVERSITY

At the beginning of March 2020, because of the risk of spread of the virus SARS-CoV-2, the Government of the Republic of North Macedonia introduced the state of emergency (No. 44-2147/1) and the lockdown of the country, restricting work, schools, travel, leisure, and other aspects of life for more than its 2 million citizens.

The experience of the higher education institutions in North Macedonia in the time of pandemic confirmed the EUA experience showing that the comprehensive institutions have more difficulties to establish an institutional approach of remote teaching comparing to the smaller ones. Another important issue in the rapid shift to the e-teaching is the extent of implementing the digital provisions in the education process in a particular institution [11].

In the eve of the health crisis, except the application of the information and communication technologies in the enhancement of the quality of teaching and learning in all levels of the education, the online teaching style in the higher education was used only in a few cases for delivering the lectures to the students of so-called dispersed study programs. Furthermore, the online/distance teaching format was not recognized by the Ministry of Education and Science of the R. North Macedonia, i.e., it was not regulated by law.

At the beginning of March 2020 with the appearance of the first cases of COVID -19 in the country, the Government of the Republic of North Macedonia adopted several measures and recommendations to prevent the progress of the virus SARS-CoV-2. Among them was the interruption of the educational process for 14 days in all levels of the education system. Having the numbers of newly infected persons continuously increasing, it was decided the schools and universities to stay locked and the teaching process to continue remotely during academic 2018/2019. Thus, the Government enforced regulation for the application of the Law in Higher education at the time of emergency (No.4-2447/1, 23 March 2020) designating the transition of the classical education to an online format.

International Balkan University (IBU) was among the first universities in the country that adopted synchronous online mode of teaching, applying a real-time video-conferencing and interactive teaching, using Zoom platform. IBU developed his own Online University Management System (Hello Online System) in 2018, integrating all aspects of the university workflow, including modules for students, teaching staff, accounting and finance and the student affairs office, too. The access to the online classes has been provided from the links created in the Zoom platform integrated into the Hello Online System. The students and the academic staff needed to log in into their accounts in the Hello system to click on the link and to join the classes. Also, the course materials and the assignments for the students, for every course, have been uploaded in the Hello system. Moreover, the university has opened an Online Learning Hub, equipped with technical arrangements to provide real-time lectures, webinars, defence of graduate and master's theses, e-conferences, etc. Not only classrooms are transformed into virtual ones, but the whole communication was done virtually, using e-mails, Viber, WhatsApp, Facebook messaging, Instagram and other social media applications.

The exams were also performed online. As the university solution for the online examination, Exam.net service was offered, and 80% of the academic staff used it in their courses. The rest 20% of instructors used project-based, take-home exams, oral examinations, etc.

The online teaching and learning process for academic staff and students of IBU was unknown. In the beginning, both teachers and students were delighted about this model of education, but some preliminary survey done by the assistants of the Faculty of Engineering [33] presented on the 2nd International Conference of Applied Sciences and Mathematics indicated that most of the students of International Balkan University prefer the traditional face-to-face type of teaching and examination. The reason for such results was not given.

It was assumed that the reason for the dissatisfaction of the students with the online teaching may be the increased number of the failed courses in the spring semester 2019/2020 compared to the spring semester 2018/2019. Course success report has been prepared at the end of every semester, where the number and percentage of students passed and those that need to retake the course is shown. The data of the courses delivered in the spring semesters in 2018/2019 and 2019/2020 were taken to develop an opinion about the success of the cohort (study year). The percentage of the failed students per study year per faculty is given in Fig.3. The records were taken just for the courses with the available information for both academic years, while the courses with the lack of information for one of the years have been disregarded. Only five faculties have been included in the analysis since the other two faculties didn't submit their data.

At the first look of the graph in Fig. 3, it seems like the percentage of the students failed the courses decreased in the spring semester of the academic year 2019/2020. More careful observation shows that there are cases where the number

of failures increased in the spring semester of 2019/2020. This is noticed for the 1st and 2nd year of studies at the Faculty of Communication (FCOM), 2nd and the 3rd year at the Faculty of Humanities and Social Sciences (FHSS), and in the 3rd year of studies at the Faculty of Engineering (FENG). The reasons of these results may be various, e.g., different professors that deliver a given course in both academic years under consideration, teaching styles have been changed, the overall success of the cohort, diverse learning styles of the students, technical issues, etc. [34, 35]. To understand the reason for such an observation, detailed analysis is required to be done in some future studies.
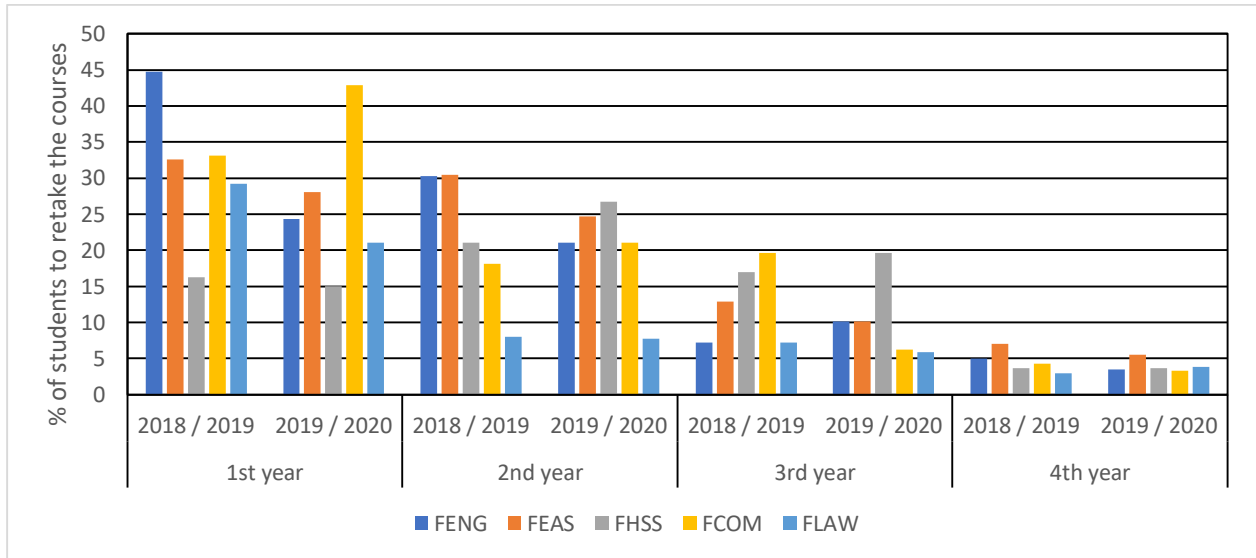

Figure. 3 Percentage of failed students per study year (cohort). The data concern spring semesters of the academic years 2018 / 2019 and 2019 / 2020.
Legend: Faculty of Engineering (FENG), Faculty of Economics and Administrative Sciences (FEAS), Faculty of Humanities and Social Sciences (FHSS); Faculty of Communication (FCOM), Faculty of Law (FLAW)

Table 1 Cancelled / postponed student and staff mobility

	Incoming Students	Outgoing Students	Incoming Staff		Outgoing Staff	
			Teaching	Training	Teaching	Training
Planned Mobility	21	20	22	20	7	5
Successfully Finished	7	20	0	0	1	2
Cancelled/ Postponed	14	0	22	20	6	3

Around 45% of the total number of students are international students from 10 different countries. Most of them returned to their countries and families at the first break of education, although at the beginning no one expected that such a situation would last that long. Also, Erasmus+ mobility program has been impacted by the worldwide health crisis. 67% of the incoming students and all incoming staff mobilities have been cancelled due to the COVID-19 pandemic and the cancellation of the International Staff Week in May 2020. A similar case was observed with the IBU outgoing staff, 75% of the planned mobilities were postponed, Table 1. This confirms the briefing report of the European University association elaborating that the first thing that suffered from the general lockdown was the internationalization and the mobility. It was interesting to observe that there wasn't single cancelling of the outgoing students' mobility that is different from the EAIE survey report demonstrated that 67% of their outgoing student mobility wasn't realized, while ESN survey report showed only 45% of cancellations [11].

It was shown [11] that COVID-19 pandemic interrupted the research activities, too. With the closure of the research labs, international research mobility was disrupted, changing the collaborations to the remote mode. With the risk of delays in the European Commission funds for the research projects, the additional obstacle has been in front of the research activities. Nevertheless, there is an opinion that research will continue online with increasing the interdisciplinarity and profound collaboration among universities [11].

Table 2 Part of the academic performance of the academic staff at International Balkan University in the academic 2018/2019 and 2019/2020.

Data available for five faculties: Faculty of Engineering (FENG), Faculty of Economics and Administrative Sciences (FEAS), Faculty of Education (FEDU), Faculty of Humanities and Social Sciences (FHSS), Faculty of Law (FLAW)

	Academic 2018 / 2019					Academic 2019 / 2020				
	FENG	FEAS	FEDU	FHSS	FLAW	FENG	FEAS	FEDU	FHSS	FLAW
Published articles										
(Original Scientific, Review, Short Scientific Professional and Popular Articles)	11	12	9	10	11	18	18	12	9	16
Participation to Conferences										
Contributions (paper)	21	7	9	9	4	28	9	4	7	5
Contributions (abstract)	7	9	7		12	20	2			1
National and International Project										
International	4	2	1	6	9	9	3	2	6	7
National	2	-	2	-	-	2	-	1	1	-

General observations on the performance of the academicians of the International Balkan University, presented in a form of the published articles, participation to the conferences and participation in national and international projects, Table 2, indicates that the lockdown due to the health crisis didn't decline the scientific contribution for the academic 2019/2020. An in-depth study on the impact on the research activities, some detailed and structured analysis needs to be done in the following studies.

To understand some initial perceptions, thorough research needs to be performed that would comprise studies related to the effectiveness of the online teaching and learning for every single course taking into consideration the different teaching methods implemented by the instructor. The analysis would involve the attitudes of the four stakeholders relevant for the education process: students, instructors, graduated students and representatives of the industry.

4. TOWARD BETTER ONLINE TEACHING ENVIRONMENT

Suggested strategies toward increased efficiency in online teaching are [20]:
- Some teaching platforms fit better given pedagogy. Thus, pedagogy advises technology and not vice versa.
- To understand the technical limitations, the students are facing.
- To allow students to design class model, how they will use their time. To decide whether they will read and watch pre-recorded lectures and they will use the classroom meetings for the consultation.
- Take some time of the class for socialization, promoting student-student interaction.
- Students to be informed on time about the things they need to do (homework, projects, discussions, etc.) for the successful accomplishment of the course.
- Application of the breakout sessions, particularly where group work is preferred, e.g., working on a project.
- Shorten the class hours to keep the student-focused, etc.

This preliminary study attempts to start further analysis directed toward the determination of the effectiveness of the online teaching and learning process at IBU, bringing the results of the survey into the practice.

5. CONCLUSIONS

Global lockdowns and unexpected limitations because of the COVID-19 pandemic forced the schools and universities to accept the online teaching model. Yet, in some countries, this model of teaching and learning hasn't been applied before the pandemic. As in the rest of the world, the teaching and learning process in the country has been switched from an old-style into a virtual format. International Balkan University quickly switched the onsite to online teaching. Real-time video-conferencing and interactive teaching and learning, using Zoom platform have been implemented. Virtual classrooms have been integrated into the University Online Management System, so-called Hello Online System. The students and the academic staff logged in into their accounts in the Hello system to access the link and to attend the lectures. The course materials ind the assignments for the students for every course have been available in the Hello system, too. Besides, IBU has established an Online Learning Hub, allowing lecturing in the real-time defence of graduate and master's theses, e-conferences, webinars, etc. For the exams, mainly Exam.net together with the Zoom platforms has

been used for monitoring the students during the examination. This study aims to be a promoter for further in-depth studies about the outcome and the effectiveness of online teaching at International Balkan University.

REFERENCES

1. Bennetot Pruvot, E., Estermann, Th., Kupriyanova, V., Stoyanova, H., 2020. *Public Funding Observatory 2020/2021, Part 1: Financial and economic impact of the Covid-19 crisis on universities in Europe*, European University association. https://www.eua.eu/resources/publications/944:public-funding-observatory-2020-2021.html
2. Daniel, J., 2020, *Education and the COVID-19 pandemic*, Prospects, UNESCO IBE 2020, 49, pp.91–96, https://doi.org/10.1007/s11125-020-09464-3
3. United Nations Education, Scientific and Cultural Organization (UNESCO), *COVID-19 Impact on Education*. https://en.unesco.org/covid19/educationresponse (Accessed on December 12, 2020)
4. Redecker, Ch., 2017, *European Framework for the Digital Competence of Educators (DigCompEdu),* Ed. Punie, Y. JRC SCIENCE FOR POLICY REPORT, JRC Science Hub, European union. https://ec.europa.eu/jrc
5. *Blended Learning for Quality Higher Education: Selected Case Studies on Implementation from Asia-Pacific*, Ed. Lim, Ch.P., and Wang, L., UNESCO 2017, Paris, France.
6. Dziuban, Ch., Graham, Ch. R., Moskal, P. D., Norberg A., Sicilia, N., 2018, *Blended learning: the new normal and emerging technologies*, *Int J Educ Technol High Educ* 15, 3, DOI 10.1186/s41239-017-0087-5.
7. Sammons, M. 2003, *Exploring the New Conception of Teaching and Learning in Distance Education*, in Handbook of Distance Education, Eds. M. G. Moore, W. G. Anderson, Lawrence Erlbaum Associates, Mahwah, N.J., pp. 387–400.
8. Wingard, R. G., 2004, *Classroom Teaching Changes in Web-Enhanced Courses: A Multi-Institutional Study*, EDUCAUSE Quarterly, 27 (1), pp. 26–35.
9. http://www.educause.edu/apps/eq/eqm04/eqm0414.asp
10. Kim, K-J., Bonk, C. J., 2006, *The Future of Online Teaching and Learning in Higher Education: The Survey Says…*, EDUCAUSE Quarterly, 29 (4), pp. 22-30. https://er.educause.edu/-/media/files/article-downloads/eqm0644.pdf
11. EUA, 2020, Briefing, European higher education in the Covid-19 crisis, Creative Commons Attribution-
12. NonCommercial CC BY-NC. https://eua.eu/downloads/publications/briefing_european%20higher%20education%20in%20the%20covid-19%20crisis.pdf
13. Allen, I. E., Seaman, J., 2007, *Online nation: Five years of growth in online learning. Newburyport*, The Sloan Consortium, MA, USA. http://www.sloan-c.org/publications/survey/online_nation
14. Allen, I. E., J. Seaman, 2006, *Making the grade: Online education in the United States*, The Sloan Consortium, MA, USA. https://files.eric.ed.gov/fulltext/ED529697.pdf
15. Radford, A. W., 2011, *Learning at a Distance: Undergraduate Enrollment in Distance Education Courses and Degree Programs*. United States Department of Education, Stats in Brief, NCES 2012-154.
16. Jaggars, S. S., 2014, *Choosing between online and face-to-face courses: Community college student voices*, American Journal of Distance Education, 28 (1), pp. 27-38.
17. Holzweiss, P. C., Joyner, S. A., Fuller, M. B., Henderson, S., Young, R.,2014, *Online graduate students' perceptions of best learning experiences*, Distance education, 35 (3), pp. 311-323.
18. Lee-Post A., Hapke, H.. 2017, *Online learning integrity approaches: Current practices and future solutions*, Online Learning, 21 (1), pp. 135-145. DOI: http://dx.doi.org/10.24059/olj.v21i1.843
19. Asgari, Sh., Trajkovic, J., Rahmani, M., Zhang, W., Lo, R. C., Sciortino, A., 2020, *An Observational Study of Engineering Online Education During the COVID-19 Pandemic*, 2020. in press, DOI 10.1109/ACCESS.2020 https://arxiv.org/ftp/arxiv/papers/2010/2010.01427.pdf https://catalogimages.wiley.com/images/db/pdf/9780470447000.excerpt.pdf
20. Barr, B., Miller, S. F, 2020,. *Higher Education: The Online Teaching and Learning Experience*, Report, Semantic Scholar. https://files.eric.ed.gov/fulltext/ED543912.pdf
21. Rovai, A. P., 2002, *Building sense of community at a distance,* International Review of Research in Open and Distance Learning, 3 (1) pp.1-16. https://doi.org/10.19173/irrodl.v3i1.79
22. Maeroff, G. I., 2003, *A classroom of one: How online learning is changing our schools and colleges*. Palgrave, Macmillan, New York, USA.
23. Drpljak, B., 2020, *Learning by doing and problem solving*, EDEN Webinar "No. 1 – Online transformation of universities – having faced the challenges of the pandemic, are they prepared for the new normal? - Part 1", September.2020.
24. Bonk, C., Maher, E. J., Essex, C., Halpenny, B., 2001, *Online Teaching in an Online World*, Semantic Scholar, Course Share.https://www.semanticscholar.org/paper/ONLINE-TEACHING-IN-AN-ONLINE-WORLD-Bonk Maher/8fe184bcfc0ceecdce10f23678723853e58053a7
25. Lima, R. M., Andersson, P. H., Saalman, E., 2017, *Active Learning in Engineering Education: a (re)introduction*, *European Journal of Engineering Education*, 42 (1), pp. 1-4.
26. Bishop J. L., Verleger, M. A., 2013, *The flipped classroom: A survey of the research*, In Proceedings 120th ASEE Annual Conference&Exibition, Atlanta, GA, USA, 23-16 June, 2013, pp. 1-18.
27. Bourne, J., Harris, D., Mayadas, F., 2005, *Online engineering education: Learning anywhere, anytime*, Journal of Engineering Education, 94 (1), pp. 131-146.
28. Asgari S., Englert, B., 2014, *Teaching Pattern Recognition: A Multidisciplinary Experience*, American Society of Engineering Education (ASEE) Conference- Zone IV, Long Beach, CA, April 24-26, 2014 pp.44-52.
29. Wong, P., 2005, *Online and face-to-face students' perceptions of teacher-learner interactions. A preliminary examination*, Distance Learning, 2 (5), pp. 1-7.
30. McInnerney, J. M., Roberts, T. S., 2004, *Online Learning: Social Interaction and the Creation of a Sense of Community*, Educational Technology & Society, 7 (3), pp. 73-81.
31. Mishra L., Gupta T., Shree A., 2020, *Online teaching-learning in higher education during lockdown period of COVID-19 pandemic*, International Journal of Educational Research Open 1, 100012, https://doi.org/10.1016/j.ijedro.2020.100012

32. Kelderman, E., 2011, *Online programs face new demands from accreditors*, Chronicles of Higher Education. http://chronicle.com/article/Online-Programs-Face New/129608/

33. Kamberi, S., Rahmani D., Feta, A., 2020, *Some Results in Effectiveness of Online Learning in Case of International Balkan University*, In: Abstract Book, 2nd International Conference International Conference of Applied Sciences, Engineering and Mathematics, Online Conference (IBU-ICASEM 2020), 4-5 June 2020, p 13.

34. Porjazoska Kujundziski, A., Schaer, E., Madeira, L. M., Polakovic, M., Kockmann, N., Glassey J., 2019, *Improvement of teaching effectiveness in higher education*, Academic Perspective Procedia, 2 (3) pp. 356-369, DOI: 10.33793/acperpro.02.03.9

35. Miguel, C.V., Moreira, C., Alves, M.A., Campos, J.B.L.M., Glassey, J., Schaer, E., Kockmann, N., Porjazoska Kujundziski A., Polakovic, M., Madeira, L.M., 2019, *Developing a framework for assessing teaching effectiveness in higher education*, Education for Chemical Engineers, 29 (2019) 21–28. https://doi.org/10.1016/j.ece.2019.06.001