

Feedforward for University Geographical Online Education during the COVID-19 Pandemic

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Abstract

During the COVID-19 pandemic period in Romania, traditional face-to-face university education was replaced by the online one, realised on a series of platforms and employing web-based methods. This transformed it into distance education. Starting from papers published worldwide on e-learning during the period when universities were closed because of the health crisis, I presented and discussed the advantages, challenges, problems and recommendations concerning online education at the university level, briefly discussing the case of geography. To achieve this aim, a literature review is performed on papers treating online university education during the COVID-19 pandemic in 2020, and participant observation, considering my personal teaching experience on the subject. Challenges are discussed from the perspectives of both professors and students and solutions are identified. Conclusions emphasize the benefits of online education when appropriate approaches are employed.

Keywords: Digitalisation of universities, E-teaching, E-learning, Digital pedagogy, Geography higher education

1. Introduction and Theoretical Background

Starting with the 15th of March 2020, e-learning was introduced after the state of emergency was declared in Romania, which meant forced confinement, because of the Corona Virus Disease 2019 (COVID-19) pandemic. In the Fall semester of 2020-2021, in Babeş-Bolyai University of Cluj-Napoca, Geography will be taught completely online, after previous courses had been designed for direct (face-to-face) instruction.

The aim of my paper is to identify, based on scientific literature and personal observations in the institution, which are the most appropriate solutions for ensuring an improved performance of professors and students in Geography, at Babeş-Bolyai University.

Higher education is defined as “a socially immersive and participatory learning experience” (Watermeyer et al., 2020, p. 9) and it has been abruptly and radically changed by the COVID-19 pandemic. Although e-learning can enrich students’ experience and improve access for many (Walwyn, 2020, p. 2), capitalising on the opportunities offered by a new digital pedagogy (la Velle et al., 2020), studies show that learning management is crucial for successful e-learning in higher education and that the fluctuating student satisfaction depends on professors’ approach of online instruction and assessment (Edelhauser and Lupu-Dima, 2020, p. 6).

Recent research focused on factors supporting e-learning and on challenges to be faced during COVID-19 (Almaiah, Al-Khasawneh and Althunibat, 2020), on guiding assessment in higher education during the pandemic (Jose Garcia-Penalvo et al., 2020), and, generally, on digital technology and associated teaching and learning practices. Reporting on experiencing communication and connectivity for adapting to the COVID-19 pandemic and reality (Al-Taweel

et al., 2020), as well as on practice and mentoring during this period, can offer solutions for coping with new challenges in the higher education system (Assuncao Flores and Gago, 2020).

The pandemic is seen as a crisis and as an opportunity for paradigmatic changes in university education. The crisis is an opportunity for the modernization of education, for pedagogic approaches using digital solutions (Anderson, 2020; Trombly, 2020) and for ensuring the resilience of the system (Alvarez de Barrios, 2020). However, in this context of the emergency remote teaching and of the technology-led transformation of learning (Krishnamurthy, 2020), some discuss the utopian imagery referring to the fact that technology and the digital solution could save both population from the disease and the education system, suggesting ways to fight neoliberal educational reforms (Burns, 2020).

Despite the many solutions that learning management systems offer, some researchers argue that students' interaction, discussions and problem-solving capabilities are reduced (Alturise, 2020), while others advocate for the high communicative potential that distance learning methods have (Iglesias Leon et al., 2020) and underline that the success of implementation and e-learning readiness depend on technology (Ebner et al., 2020, p. 3).

E-learning implies distance and connectivity at the same time (Mulla et al., 2020, p. 449): "Online education is not limited to distance education, as it regards a grouping of learning/teaching procedures completed in cyberspace" (de Oliveira Araujo et al., 2020, p. 1). E-learning includes three components: "e-communication (material communication), e-training (LMS system approach) and e-assessment (assessment of learning outcomes indicators)" (Ana et al., 2020, p. 20). After placing the learner in the centre (Mulla et al., 2020, p. 447), research questions enquire about the best forms of delivering education that are most likely to advance students' learning, to develop their communication and social skills, to support their emotional and psychological development, and to ensure their professional development and resilience in their future job environment.

Technical and psychological readiness are among the first assessed and discussed. The latter is related to the increase of tasks and workload in education, as well as to more family responsibilities both for professors and students (Prokopenko and Berezhna, 2020, p. 133).

In spite of the low level of e-learning expertise, in Romania, digitalisation is perceived as progress in education (Edelhauser and Lupu-Dima, 2020, p. 6; Vlada et al., 2010; Vlada, Jugureanu and Albeanu, 2011; Vlada, Jugureanu and Istrate, 2009). During the pandemic period, the Zoom software is preferred in the education system of Romania (free and easy to use), by those who used videoconferencing (under 50% of the users) (Edelhauser and Lupu-Dima, 2020, p. 19, p. 21).

2. Material and Method

My research findings are the result of the literature review considering papers indexed in the Web of Science database by the end of August 2020, referring to university online education during the COVID-19 pandemic. The research material consisted of these papers from the existing literature published in 2020 and of the author's participant observation during the teaching-learning process, in the Spring semester, at the Faculty of Geography within Babeş-Bolyai University in Cluj-Napoca, Romania.

3. Results and Discussions

The topic I searched for on the Web of Science was "university education Covid". As of the end of August 2020, using these keywords, the database generated 133 entries. According to Web of Science, most of the published entries fall in the following categories: educational research (28), internal/general medicine (13), education scientific disciplines (9), and public environmental occupational health (8). Following next, with six, five and four entries are these categories: environmental sciences, health care services, information science/library science, management,

multidisciplinary sciences, dentistry, oral surgery/medicine, environmental studies, green sustainable science technology, health policy services, experimental medicine research, political science, and surgery. One can see that the research focus is on education, health, and environment, underlining the top societal priorities during the COVID-19 pandemic. Out of the 133 entries, 112 are articles, 12 are editorial materials, five are reviews, and four are letters.

In the following pages, I present the results of the literature review and of my participant observation in the Faculty of Geography within Babeş-Bolyai University in Cluj-Napoca, considering the advantages, challenges, problems, and recommendations referring to online education in the university during the COVID-19 pandemic.

3.1. Advantages of Online University Education

The most frequently mentioned advantages of online learning are flexibility concerning time and location of classes, thus supporting remote learning, easy administration, accessibility, and comfort. Another advantage is student-centred learning (i.e. self-directed learning, asynchronous learning) (Mukhtar et al., 2020, p. 4). Distance learning influences positively self-organisation and self-discipline, making all more responsible. University education is also more accessible regardless of students' residence and health issues. Finally, besides connectivity and inclusivity, online university education is an opportunity for pedagogical reinvention (Watermeyer et al., 2020).

3.2. Challenges and Problems of Online University Education

3.2.1. Technology-related challenges and problems

Poor Internet connection, slowdown or even collapse of the network during demand peaks, issues with the video and audio functions may impair students' experience and satisfaction with e-learning (Mulla et al., 2020, p. 448) and also the professors' with e-teaching. Other challenges are: limited capacity for the transmitted material (up to a certain number of Mb), different time zones (thus, asynchronous e-learning is advised for), lack of inappropriate hardware equipment (e.g. no printers at home, necessary for solving certain tasks) (Nuere and de Miguel, 2020, p. 9).

A challenge for both professors and students is learning the available online software from scratch, in record time, and sometimes even without systematic support from their institution. Added to this is the online access to no or a small number of library materials, in the context of no physical access to such resources.

3.2.2. Pedagogy-related challenges and problems

While face-to-face schooling was presented and represented as a threat (Murphy, 2020), the new ways of learning, teaching, and assessment made up a disorienting and unwelcome experience of e-teaching (Watermeyer et al., 2020, p. 2), results showing also students' decreasing success rates for an increase of their course load online (Hamann et al., 2020). Presence is lower in virtual classes than in face-to-face ones (Edelhauser and Lupu-Dima, 2020, p. 17) and the dropout rates are higher in e-learning (Edelhauser and Lupu-Dima, 2020, p. 4). Some part of the activities (i.e. practicals, field trips, internships in companies) is not possible to be conducted online (Sahu, 2020). Students are more anxious, worried about their practical training and thus enjoy less the provided online replacements (Peloso et al., 2020; Roy et al., 2020). Therefore, students need help to build their learning (contents and process) under these unfavourable circumstances.

Activities require much time as professors should develop expertise both in course development and design in the virtual environment and in the digital pedagogy enabling the e-teaching and e-learning processes (Mulla et al., 2020, p. 448). There is also the risk for professors to become talking heads, while students run the risk of losing interest (Gewin, 2020). Among the main problems are the following: instructional design; no or less interactivity (Mulla et al., 2020,

p. 447); students talk less; new teaching and learning skills need to be acquired in the digital environment for both professors and students, in record time; limited or no paralinguistic communication; difficult to enable micro-teaching; limited possibilities for group activities.

There are limitations such as inefficiency (unable to teach and learn skills, lack of student feedback, no possible assessment of students' understanding during online classes, limited attention span, lack of attentiveness, resource intensive), and difficulties or failure in maintaining academic integrity (lack of discipline, as some students misbehave during assessments, and plagiarism) (Mukhtar et al., 2020, p. 4, p. 27, p. 30).

The assessment part is still underdeveloped (Sahu, 2020), requiring that the authenticity of students' homework/projects and products should be tested and certified. Concerning limitation of utilization, automatized assignments decrease the quality of the assessment process in what professors' feedback and students' knowledge are concerned.

Resistance against e-learning in the academia can be explained by the usual resistance to change, but also by the perceived risk of pedagogical deprofessionalisation, workload intensification than in face-to-face activities (Gewin, 2020), of no balance between teaching and research, and by professors feeling unprepared or ill prepared for digitalization.

3.2.3. Social and psychological challenges and problems

The difficult assessing of losses affecting higher education is discussed (Ahlburg, 2020), together with social and psychological related challenges and problems that impact the system because of the mental health state of the involved human resource. The abrupt and violent change induced by COVID-19 may have affected the mental health of academics and students (Sahu, 2020), because of stress, uncertainty, anxiety, and fear (Baba, 2020, p. 1). Irrespective of the fact that a new teaching paradigm is born or not (and thus replacing the old one, based on face-to-face education) (Laura Picon, 2020), in the academia, disturbance in professors' professional and personal lives, and erosion of work-personal life balance was reported (Watermeyer et al., 2020).

Despite the counterbalancing provided by online activities, research reports the lost sense of community for students (Anderi et al., 2020) and the negative psychological effects of online education complemented by isolation (de Oliveira Araujo et al., 2020). Damaging the attractiveness of university education and life, with its whole experience (e.g. student life, socializing with peers, socializing with professors, etc.) cannot be ignored.

Moreover, the issue of inclusivity is debated. Vulnerable groups are affected more by this transition to online education. The disabled students, coping with online learning in a context of health crisis and historic cuts in the public education system, are disadvantaged (Douat, 2020). Vulnerable international students are in a similar situation.

3.2.4. Concluding remarks

To sum up the part on challenges and problems induced by online education in the university, research shows that these and the factors influencing e-learning are various. Factors influencing e-learning are: "trust (trust of Internet, security, digital signatures, electronic payment, law and regulation), e-learning system quality (efficiency, usefulness, ease of use, reliability, content design), culture (ICT literacy, e-society social media), self-efficacy (increase awareness, training programs)" (Almaiah, Al-Khasawneh and Althunibat, 2020, p. 11). Failure is triggered by "technological difficulties for students and professors, slow speed of Internet, lack of technical support, students lack of awareness concerning their e-learning, lack of university readiness; lower quality of online courses compared to face-to-face ones, especially because of lower interactivity level, lack of adaptation of content to the online environment and students' needs; weak IT skills of faculty members/professors; professors not accepting technology; professors' lack of training to use elearning; privacy concerns about the students' and professors' personal information; lack of

inappropriate technological infrastructure within universities” (Almaiah, Al-Khasawneh and Althunibat, 2020, p. 11).

Challenges also include: “financial support issues (projects delay, lack of financial support), change management issues (lack of awareness, lack of citizens’ interest, resistance to change), e-learning system technical issues (usability, ease of use, usefulness, access to e-service)” (Almaiah, Al-Khasawneh and Althunibat, 2020, p. 11). Other challenges and problems refer to bureaucracy of management in state universities; process-oriented education instead of focus on results; educational conformism; professors’ and students’ lack of motivation and self-discipline (Klapkiv and Dluhopolska, 2020, p. 90).

Despite challenges to online education – communication issues, assessment of students’ learning results, technology use, online experience, anxiety and stress induced by the pandemic, time management and technophobia (Rajab, Gazal and Alkattan, 2020) –, case based research reports that e-learning had a positive impact on the educational practice and system (Rajab, Gazal and Alkattan, 2020).

3.3. Recommendations for Quality Online University Education

Solutions should be simple (concerning technology), personal (based on interaction), and fast (referring to the learners’ needs) (Ana et al., 2020, pp. 23-24). Offices for pedagogy and IT support, which could offer permanent pedagogical and IT staff support are advocated for (Mulla et al., 2020, p. 447), as well as counselling (in financial, social and health matters) for all those involved in the process. Implementation of digital health along the process of instruction is paid much attention to (Mulla et al., 2020, p. 449).

3.3.1. Technology-related recommendations

Flexibility in using the available IT resources is advised (Klapkiv and Dluhopolska, 2020, p. 90). To ensure a high-quality e-learning setting for emergency remote teaching to be turned into higher quality e-learning, instructions should be published concerning the use of technology for e-learning in the university. Solutions also include availability and use of collaborative learning platforms, virtual libraries, and virtual classes (Edelhauser and Lupu-Dima, 2020, p. 27) and permanent update of the ICT used for online education (Nuere and de Miguel, 2020, p. 5).

In addition, especially for replacing practicals, innovations such as technology and simulation-based learning that can support experiential education should be implemented where necessary (Peisachovich et al., 2020; Roskvist, Eggleton and Goodyear-Smith, 2020; Walwyn, 2020). Moreover, a video portal could be set up (lecture and event videos) to promote building a community of learning (Ebner et al., 2020). Likewise, social media is important for communication in the university system during this period (AI-Youbi et al., 2020; Edelhauser and Lupu-Dima, 2020, p. 18).

A functional anti-plagiarism system, to check students’ projects and solved tasks should be available. And all this could not be implemented properly without the non-teaching staff toiling to maintain the technology working.

3.3.2. Pedagogy-related recommendations

Professors are contributing to improve the existing educational models in the online environment, striving to enable learning, thus shifting the focus from teaching. They also shift from instructors to enablers (Nuere and de Miguel, 2020, p. 4). Discussing the changing role of educators nowadays, depending on major disruptions and students’ new needs (Hill et al., 2020), research shows that the role of university professors is also updated in terms of giving advice to students concerning their learning process, not only mentoring them related to the learned contents (Prokopenko and Berezhna, 2020, p. 133).

Quick adaptation to online teaching and online learning is the solution, with advantages and disadvantages (Moorhouse, 2020; Zhu, 2020). Innovations are called for in the form of synchronous and asynchronous online learning based on high levels of interaction (Scull et al., 2020).

Under these circumstances, it could be useful that an educational technology team to be set up at the university level, whose activity is to focus on the users' education and training, considering e-learning and innovative teaching (cf. Ebner et al., 2020, p. 7). The education technology team should offer regular consultation hours besides available online materials, it should develop materials for lectures adapted to the virtual environment, thus transforming residential courses into quality remote online ones and offering permanent support to all faculty members to transition online (to professors for online teaching and to students for online learning) (cf. Ebner et al., 2020).

This is a useful idea, to set up a community of coaches (to coach faculty members and help develop online resources that could ensure efficient online instruction and e-learning), and, in the process, to encourage and use the contribution of educational departments in the university. Thus, coaches for professors and students could be available in order to create a teaching community and a learning community. Under such conditions, institutional leadership is significant in finding qualified human resources within and outside the university, which could enable the advanced and well-ahead organization of all learning activities. All this would build confidence in addressing learners' needs for both professors and students (Kessler et al., 2020, p. 596).

Changes in training academics should be implemented. Training with specialists is needed for designing e-content and e-tests (Edelhauser and Lupu-Dima, 2020, p. 27). Training is needed in online course design (a redesign of the material and content approach). Much time and patience are needed to identify the best teaching approaches for a certain subject matter and then for a topic within it. Students' feedback is important to improve the lecture and overall course activities (Gewin, 2020). To invite students to present their learning experiences can help adjust our teaching approaches (Sahu, 2020).

Student engagement is behavioural, cognitive, and emotional (Edelhauser and Lupu-Dima, 2020, p. 4). Students' self-regulation of their learning is required. To enable this, it is important for professors to receive students' feedback, even if anecdotal, while eye contact during synchronous online activities is important. Professors should provide detailed instructions, as more information about organization, coordination and solving tasks are required than in face-to-face interactions. A structured approach would ensure the necessary virtual environment for students to be able to learn independently. At the same time, students should become self-accountable during online assessment, their professional training and future practice depending on this awareness of their responsibility (Vanka, Vanka and Wali, 2020).

So far, research shows that in order to ensure accessibility and quality of online education, one needs to be succinct, to reduce goals or the number of course objectives that can be attained (Gewin, 2020), this meaning to focus on the core learning objectives that can be *achieved with the available tools and resources*, to reduce cognitive load and increase interactivity (Mukhtar et al., 2020, p. 27), to adopt a combination of synchronous and asynchronous instruction, to support students' learning styles, to provide "leaner-generated contexts and content" (Edelhauser and Lupu-Dima, 2020, p. 4), which is at least co-creating content and materials with students, involving them in a process of active learning, to identify and support struggling students, and use software that can detect cheating and plagiarism (Mukhtar et al., 2020, p. 30).

Training in e-teaching is necessary for faculty members and training in e-learning is necessary for students. Availability of a website with sharable IT and pedagogy resources, of internal discussion forums about resources and best practices in the virtual educational environment, is compulsory for successful online university education. Thus, offering pedagogical support for

remote learning should be realized also in the form of a central university website with resources for online teaching, a unique and reliable place with a set of sharable materials. To develop remote teaching resources and remote learning materials on a common space should be grounded in learning research (Kessler et al., 2020, p. 594). The website should have one section on pedagogy, led by those who are experienced in online teaching and one about IT support tools.

This new website with resources for faculty (to teach) and for students (to learn), could also host community events, where good practices are shared, concerned with the use of technology to support online teaching and learning. Complementarily, the higher education institution should provide faculty members with virtual sessions and tutorials on online teaching (webinars and training sessions) and should provide proactive support for all students (including tailor-made support for the vulnerable categories) (Kessler et al., 2020, pp. 592-593). To sum up, studies advocate for fast and permanent educational and information support for academics and students (Terenko and Ogienko, 2020).

Also, social media during the COVID-19 crisis has proven useful for a sustainable management of higher education. Research shows that traditional communication is revolutionized by social media and contributes greatly to the following areas: administrative resilience, education sustainability, community responsibility, students' positive feeling, community bonds, and delivery of promised value, in an integrated strategy able to answer efficiently to users' needs and questions (AI-Youbi et al., 2020, p. 1, p. 5). A social media account of the university and of the faculty, having the following higher education management uses during the pandemic is advised for and aims at educational sustainability: "online defence for master's and doctoral students; student award announcements for various online competitions; online short courses on using Blackboard and online meeting platforms; communication [...] of spiritual, reassuring and encouraging messages to students, helping them to be positive and to overcome the side effects of the pandemic; disabled students and students with autism [to be] provided with specialized online courses to keep them engaged in the academic environment during COVID-19 pandemic; academic advice and psychological counselling" (AI-Youbi et al., 2020, p. 13). To do this, more investment is needed in digital learning.

3.3.3. Social and psychological recommendations

Self-awareness, self-motivation, along emotional stability, are very important for professors' and students' mental health. Therefore, studies discuss solutions to reduce isolation, to ensure effective learning, and inclusiveness for socially vulnerable students, considering community, creativity, and connectivity (Kalloo, Mitchell and Kamalodeen, 2020).

To sum up, all those involved in online education should show flexibility and patience. Recent research on university online education during the COVID-19 pandemic offers plenty of advice on IT and pedagogy, the most frequent recommendations being concerned with teaching and assessment (reduced cognitive load, faculty development, increased interactivity, case based-learning, revision classes, proper assessment, development of standard operating procedures), and quality enhancement (proctoring, using premium applications) (Mukhtar et al., 2020, p. 4).

3.4. Geography Online Education

The Faculty of Geography at Babeş-Bolyai University in Cluj-Napoca, Romania, traditionally provides mainly presence training, with physical lectures, and, at present (Fall semester of the 2020-2021 academic year), educational activities are performed exclusively online, encouraging lectures on conferencing platforms.

Although striving to take e-teaching and e-learning from an elementary to an advanced form, certain difficulties cannot be solved because of the special conditions or the equipment required

for unfolding activities, like in the case of Physical and Technical Geography. Thus, the requirements of practical subjects cannot be met. The same situation is true for field trips or in the case of in-service training in state and private institutions and companies. Also, difficulties appear especially for highly dialogic lectures and seminars, where professors act as facilitators.

Making teaching materials available for other colleagues, sharing materials and experience in e-teaching and e-learning, and getting feedback from peers and students should be supported both at the leadership level and technologically, by making available a dedicated shared online space. Resources for e-learning should be on a single platform of the university or of the faculty. However, similar to other faculties in universities worldwide, quality of delivery depends on the professors' technological skills and quality of their hardware at home, not only on their professional/subject-based and pedagogical knowledge.

4. Conclusions

My paper provides information for a successful use of e-learning, aiming at the policy makers in universities and faculties to revise and improve the current situation of the educational process. The above-mentioned results of the literature review and participant observation could pave the way to improved online education. At the same time, it should be considered how learning takes place online, being aware of the pedagogy of online teaching and e-learning.

Literature argues that our attitudes and behaviour towards online teaching will change, online learning will change learning styles and teaching styles and various reports on current approaches to online learning enable us reimagine universities and the roles of academics and students. However, for quality e-learning, time, expertise, and investments are required, as pedagogical skills in e-teaching and e-learning are necessary and the human resource should be trained considering that, at present, many are unprepared for the digital challenges in education. Higher digital literacy of professors and students is needed.

Although results show that online education trains students to be self-directed learners, which is important for lifelong learning (Mukhtar et al., 2020, p. 30), so far, the effectiveness of e-learning is merely anecdotal, as more research is needed to understand how online education can replace and whether it should replace (at least in pandemic times) face-to-face classes (Moorhouse, 2020, p. 3). In addition, close collaboration of professors, students, and technicians is mandatory for successful implementation of online education, while flexibility is a keyword for success in e-learning.

Finally, focus should be not only on how contents is taught, but also on what is taught and can be taught by means of a specific technology (Walwyn, 2020, p. 1). Therefore, both the teaching practice (i.e. pedagogy) and the contents should be rethought to match each other.

Meanwhile, struggling to find the balance between a dystopian perspective (e-learning is time-consuming and ineffective) and a utopian one (e-learning should completely replace the classical face-to-face education), this health, societal and educational crisis caused by the COVID-19 pandemic could be considered an opportunity to look for alternatives to the traditional ways of formal education.

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