DISTANCE LEARNING IN AN ELECTRONIC ENVIRONMENT DURING THE COVID-19 PANDEMIC

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ABSTRACT

The COVID-19 pandemic has affected all areas of our life including learning and education. 2020 will remain in the history of world education with the unprecedented physical closure of schools and universities and the rapid transition of educational activities in a virtual online mode. Traditional teaching methods have been transformed in digital format. The learning process was conducted entirely in an electronic environment, which had to be organised and provided with electronic resources - different types of electronic media and information and communications technologies (ICT) in education.

The aim of the article is to examine the experience gained from e-learning in a social distance at universities in Bulgaria. This study focuses on academic staff perspectives of main challenges and problems in distance learning process during the pandemic at higher educational institutions using the example of University of Agribusiness and Rural Development (UARD). As part of our study, we interviewed academic and administrative staff in University of Agribusiness and Rural Development to investigate the challenges that were faced in the periods of social distance.

Lessons learned from "crisis education" analysis outline the strategic framework for the necessary changes in learning models, providing distance education, leveraging hi-tech, low-tech and no-tech approaches, so that today's education can meet future challenges.

KEY WORDS: distance learning, e-learning, information and communications technologies (ICT), COVID-19 pandemic

JEL CLASSIFICATION: I20, I21, I23

INTRODUCTION

The COVID-19 is a huge challenge to national education systems. According to UNESCO more than 1.5 billion students and youth across the planet are or have been affected by school and university closures due to the COVID-19 pandemic.¹ This unexpected change is being realized as a crisis measure to control the spread of the Covid-19 virus. In this sense, distance learning, which takes place in hundreds of educational systems and includes different types of synchronous and asynchronous forms of e-learning is determined by some researchers as "crisis education". A large number of universities across the world are shifting the focus from traditional education to a web-supported education that can be provided either fully online or through blended learning (hybrid learning) (Rudenko, 2020).

The pandemic caused rapid changes in higher education in Bulgaria. The parties in the educational process in the country - teachers, students, institutional heads and officials had to adapt to new reality. The interruption of the educational process in connection with the restrictions imposed by COVID-19 changed both the organization and the methods of teaching. Educational institutions had very little time to prepare for a remote-teaching regime. The measures taken by the institutions in Bulgaria were aimed primarily at ensuring an effectively functioning distance learning system.

Today, the major challenges facing education systems are related to how the new opportunities created during the crisis by the physical closure of educational institutions can be used to transform organizational and pedagogical models in contemporary education. The objectives of this study are: to analyze good educational practices and innovative models in distance learning in an electronic environment in Bulgaria; to reveal the advantages and limitations of using e-learning; to outline opportunities for changing the educational practice and organizational model.

NATURE AND CHARACTERISTICS OF DISTANCE LEARNING AND E-LEARNING IN EDUCATION

E-learning forms are used in distance learning when there is no need for direct contact between teacher and student. They are also used in face-to-face teaching through the introduction of various electronic media. E-learning, also referred to as

¹ <https://en.unesco.org/covid19/educationresponse/globalcoalition>

online learning, electronic learning, or web - learning, refers to the use of different types of electronic media and information and communication technologies (ICT) in education. Distance learning is a learning process where the student and the teacher are separated by location, but not necessarily by time difference. The created distance is compensated by technological means: audio, video, computer and communication technologies and tools. The discussion of the definition and practices of e-learning focuses on the intersection of education, teaching, and learning with ICT (Friesen, 2009) ICT refers to any product used to store, retrieve, manipulate, transmit, or receive information electronically in a digital form. ICT system is generally an information system, a communications system or, more specifically speaking, a computer system – including all hardware, software and peripheral equipment – operated by a limited group of users. The term is commonly used as a synonym for computers and computer networks, but it also encompasses other information distribution technologies such as television and telephones.² “In recent decades, the use of information and communication technologies for educational purposes has increased, and the spread of network technologies has caused e-learning practices to evolve significantly” (Kahiigi et al, 2008), especially for learning outside the premises of the school. E-learning/E-education has been introduced as a tool in the learning process in the majority of the international universities worldwide (Srivastava, 2018).

E-learning can be two main categories: synchronous and asynchronous. In synchronous learning, the student and the teacher are online and interact at the same time from different places. They deliver and receive the learning resources via video conference, Internet, mobile or chat. Asynchronous e-learning is pause-and-resume kind of learning. Thus, the student and the teacher cannot be online at same time. Asynchronous e-learning facilitated by media such as e-mail, blogs, discussion forums, CDs, DVDs, e-book's etc. Students may learn at any time, download documents, and chat with teachers and other classmates. Many learners prefer asynchronous instead of synchronous learning because they can learn at their preferable time. Students may spend more time refining their contributions, which are generally considered more thoughtful compared to synchronous communication (Hrastinski, 2007). Table 1 summarizes main considerations for using one or the other category.

² <https://europeyou.eu/es/what-is-information-and-communication-technology/>

Table 1. Synchronous vs. asynchronous e-learning

	Synchronous e-learning	Asynchronous e-learning
In which cases?	<ul style="list-style-type: none"> • Small group of students • Exchange support • Discuss less "complex" issues • To plan or coordinate work, tasks 	<ul style="list-style-type: none"> • Large group of students • Discuss "complex" issues • When synchronous meeting cannot be scheduled
Why?	<ul style="list-style-type: none"> • Increased commitment and convergence on meaning 	<ul style="list-style-type: none"> • Increased person ability to process information • More flexible
Learning from the sources of:	<ol style="list-style-type: none"> 1. Virtual Classroom 2. Audio and Video Conferencing 3. Chatting 4. Application Sharing 5. Messaging 6. Webinars 	<ul style="list-style-type: none"> • Self-paced online courses • Discussion forums, groups, blogs • Discussion boards • Emails • Online libraries

Source: Adapted from Hrastinski, S. (2008)

According to Hrastinski (2008), for the discussion of complex issues, synchronous e-learning, by media such as videoconferencing, instant messaging and chat, and arranging face-to-face meetings as a complement, may be essential as support for students to get to know each other and for planning the tasks at hand. However, when discussing complex issues, in which time for reflection is needed, it seems preferable to switch to asynchronous e-learning and use media such as e-mail, discussion boards, and blogs (Hrastinski, 2008). Synchronous and asynchronous learning complement each other and the combination of them provide variety of ways to exchange information in e-education process.

In terms of social isolation imposed by the Covid-19 pandemic, it is necessary to evaluate both the advantages and disadvantages of distance learning in electronic environment.

STUDY ON STAFF PERSPECTIVES OF MAIN CHALLENGES AND PROBLEMS IN DISTANCE LEARNING PROCESS DURING THE PANDEMIC AT UARD

The purpose of this study was to examine possible challenges that were obstructing the adoption of e-learning platforms in the education and the experience

gained by them during the academic year 2020/2021 on e-learning process. The study adopted the descriptive research design.

Specific objectives are to determine:

- the extent the academic and service staff utilized e-learning in their teaching;
- the ICT competences possessed by the UARD academic staff;
- the problems faced by academics in proper utilization of e-learning packages.

A questionnaire was used to elicit answers to the following research questions that guided the study:

- Staff attitude towards e-learning in general;
- Staff first impressions on e-learning platform of UARD “Electronic University”, on its positive or negative aspects;
- Staff preparedness for a university e-learning environment
- Staff readiness for participation
- Possibly proposing improvements

43 members of academic staff and service staff at the UARD were asked to evaluate their experience with e-learning during the isolation imposed by the COVID-19. Summarizing the results of our survey, we can point out that answers showed positive attitudes toward the e-learning, with slight differences in some of them. The main advantages of online learning are highlighted in the answers, such as: “It is convenient, affordable and saves time”; “It corresponds to the modern development of technologies and teaching methods”; “The only options during the crisis by the physical closure of educational institutions”; “Possibility of self-dependent work”; “Flexible way of learning”. It is noteworthy that the vast majority of respondents felt that real-time face-to-face interactions were fundamental regards the social value that is derived in a traditional learning as an essential factor in learners’ attitudes. It makes sense that the new model of online interaction between a teacher and a student appears to take some time. The statements relating to platform flexibility and accessibility were rated good enough. The overwhelming majority of respondents expressed their satisfaction with the university e-platform, and they found it easily accessible, convenient, multifunctional. A small number of respondents indicated some difficulties faced while using the E-University platform. This can be explained by the lack of adequate training or experience with those platforms. All of the participants

in the survey declare their readiness for participation in e-learning. Some of them declare it conditional, if it is necessary, for example during the pandemic. The majority of respondents proposed conduction of an additional trainings and establishment and publication of instruction manuals for using e-platforms and e-resources by bough the teachers and the students. Their degree of exposure and the quality of the accessibility of ICT is a significant consideration that can influence attitudes and readiness to e-learning in higher education.

In addition, an analysis of the e-learning process conducted for the study period was made.

Main characteristics are summarized in the table 2. Analyses of the results showed that technical support of the e-learning process is not sufficient. In our opinion, an e-learning framework should be outlined, which should be developed in such a way that it is practically applicable. The e-learning framework should offer guidelines for developing learners' skills both through the application of appropriate learning methods for the e-environment and through the use of technical means (software and hardware). The study further revealed that the majority of the professors and the students have the competence of using the computer and e-learning application but additional training is needed to keep their knowledge and skills up to date with new realities. Some challenges for effective utilization of e-learning are considered: inadequate ICT infrastructure on the part of professors and students, internet access problems, lack of update computer packages readily available for application on the part of participants, lack of time and administrative support in providing ICT materials; insufficient technical support from ICT professionals; lack of internet service knowledge on the part of academics; lack of adequate training to them on how to integrate e-learning gadgets etc.

Based on the survey, we can conclude that e-learning is successful in UARD for the period during the crisis by the physical closure of educational institutions. Students appreciate the effort made by their professors to provide the e-learning process with materials in the disciplines, namely full-text lectures, additional literature, video lectures and synchronous communication. But on the other hand, the participants in e-learning report the negative consequences of this type of training. For example, too many hours in front of the computer, lack of real connection with their professors and other students, problems with internet connection, poor technical equipment (some of

them do not have the appropriate hardware). As stated in UNESCO IESALC (2020), the main technical difficulties faced by students in higher education during the pandemic are mainly related to hardware and internet connection, communication with fellow students and teachers, compliance with regular schedule of the learning process (UNESCO IESALC (2020)). The COVID-19 crisis has also affected low-income students, who have reported problems with lack of technical equipment. The results are a decrease in motivation due to poor technical support, and hence the inability to cope with the assigned tasks and exams.

Table 2. Characteristics of the Distance Learning process during the pandemic at UARD for academic 2020/2021

Forms of e-learning	<ul style="list-style-type: none"> ✓ Synchronous (videoconferencing, virtual classrooms, webinars) ✓ Asynchronous (online courses in platform "Electronic university")
Video conferencing software products	<ul style="list-style-type: none"> ✓ Google meet ✓ Zoom ✓ Skype
Learning Management System	✓ MOODLE ³
Forms of current control	<ul style="list-style-type: none"> ✓ Synchronous (solving cases, presentations) ✓ Asynchronous (assignments, tests, course projects in platform "Electronic university")
Form of exams	<ul style="list-style-type: none"> ✓ Synchronous (theoretical tests) ✓ Asynchronous (assignments, tests, course projects in platform "Electronic university")

Based on the analysis, main conclusions are made regarding the characteristics of organizational and pedagogical models for distance learning in electronic environment during the pandemic in educational system in Bulgaria as follows:

- Changing the educational paradigm by introducing different models of blended learning (combining elements of face-to-face learning and IT-assisted face-to-face learning, synchronous e-learning and distance learning in an e-environment). Effective use of a combination of synchronous (students learn live in the real classroom or in a virtual classroom) and asynchronous (students

³ The MOODLE course management system is an opensource system that can be used for creating online courses.

learn independently or interact as a team in cyberspace at different times) approaches.

- Increasing investments in distance learning to prepare for future periods of university closure, to improve distance learning in an e-learning environment in the university to create an appropriate e-infrastructure for the implementation of blended learning models.
- Emphasis on the well-being of students and academics
- Increased funding for teacher training and education in terms of: identifying behavioural and cognitive changes in students; providing support for learning and personal development; conducting various forms of e-learning. Advantageous use of innovative methods to support academics, such as online professional development, coaching and supervision.

CONCLUSION

Distance learning in an electronic environment has become a current and promising trend in education. The COVID-19 pandemic brought many challenges necessitated an educational reform providing participants in learning process with new models of communication, learning and professional engagement.

UARD has successfully made the transition to online forms of course delivery thanks to the availability of online study options. A virtual learning environment "Electronic university" enables students to have consistent learning experiences on the joint learning platform. Technical support and adequate ICT infrastructure has been critical to the success of the distance learning delivery mode at University of Agribusiness and Rural Development in the early and ongoing stages of the COVID-19 pandemic. Lessons learned from "crisis education" analysis outline the strategic framework for the necessary changes in learning models, providing distance education, leveraging hi-tech, low-tech and no-tech approaches, so that today's education can meet future challenges.

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