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TRENDS IN E-LEARNING - TECHNOLOGICAL AND PEDAGOGICAL SOLUTIONS: AN OVERVIEW OF THE ROUND TABLE HOLD WITHIN THE FRAMEWORK OF THE YOUTH SCIENTIFIC CONFERENCE *KLIMENT'S DAYS 2017*

ASYA E. ASENOVA*, KAMELIA S. YOTOVSKA & VIKTORIA G. NECHEVA

Department of Methodology of Biology Teaching, Faculty of Biology, Sofia University “St. Kliment Ohridski”, 8 Dragan Tsankov Blvd., 1164 Sofia, Bulgaria

Abstract. This report presents the trends for the future development of e-learning and an overview of the Round Table on *Trends in e-learning - technological and pedagogical solutions* are outlined, held within the framework of the Youth Scientific Conference *Kliment's days 2017*, 16-17 November 2017, Sofia, Bulgaria at the Faculty of Biology of Sofia University “St. Kliment Ohridski”. The main objectives and guidelines for discussion of the organized event are outlined. Key conclusions and summaries are presented regarding future trends and perspectives in the implementation of e-learning.

Key words: e-learning, strategies for effective application of ICT, pedagogical models

INTRODUCTION

New approaches and strategies for teaching and learning have been implemented in recent years in the context of the accelerated development of information and communication technologies. E-learning enables universities to offer more flexible

**corresponding author:* A. Asenova – Department of Methodology of Biology Teaching, Faculty of Biology, Sofia University “St. Kliment Ohridski”, 8 Dragan Tsankov Blvd., 1164 Sofia, Bulgaria; asya_asenova@yahoo.com

training than traditional forms, while striving for a higher quality of the learning process at the same time. E-learning provides new opportunities for realizing the pedagogical concept of lifelong learning as well as of personalizing the educational process in the context of modern pedagogical concepts (ASENOVA & YOTOVSKA 2014A, B). This emphasis is placed not on the specificity of technology as a learning tool but on the specificity of the pedagogical capabilities of one or another technology in the preparation of professionals in a diverse educational context.

According to a number of researchers, the development of education in the higher education sector is heavily dependent on the IT infrastructure and places ever-increasing requirements such as maintaining and processing vast amounts of user data, dynamic resource sharing, rapid adaptation to changing information environment requirements, and service automation, measurability of technology costs, operational provision of various information services. The use of ICT in education is a key element in the documents of the European Commission. It ensures the efficiency of European educational systems and the competitiveness of the European economy (RECOMMENDATION OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL OF 18 DECEMBER 2006 ON KEY COMPETENCES FOR LIFELONG LEARNING 2006/962/EC; <http://europa.eu.int>; <http://ecet.ecs.ru.acad.bg/bvu>).

The major trends of the 21st century in the development of e-learning are the following:

- Dominance of mobile communications in e-learning;
- Intensive development of hybrid e-learning models (mobile-computer-based);
- Mass distribution of open source platforms for e-learning development.

Synchronization with the STRATEGY FOR EFFECTIVE IMPLEMENTATION OF INFORMATION AND COMMUNICATION TECHNOLOGIES IN EDUCATION AND SCIENCE OF THE REPUBLIC OF BULGARIA (2014-2020) and with the STRATEGY FOR DEVELOPMENT OF HIGHER EDUCATION IN THE REPUBLIC OF BULGARIA FOR THE PERIOD 2014-2020 is adopted. As a result the analysis of the Strategy for Development of Higher Education in the Republic of Bulgaria outlines the key priorities, which take into account the specific policies and management measures in the field of higher education in the period 2014-2020. Among these are the expansion and strengthening of the Lifelong Learning Network and wide application of various electronic forms for distance learning. E-learning is becoming the fastest growing industry in the world, focused on a great deal of human and financial potential (http://www.minedu.government.bg/news-home/2009/11-02-18_strategy2020.html).

In the process of globalization and dynamic technological development, higher education institutions need to increase their flexibility, customize their learning according to the needs and requirements of students and implement innovative

technological solutions to meet the growing demands of the labor market in a highly competitive environment. This requirement derives also from the start of the European e-Learning Initiative, which focuses on the following areas:

- Building infrastructure, providing equipment and providing access to the Internet of universities, schools, vocational training centers, and other organizations in the field of education;
- Information technology training at all levels – students in schools and universities, lecturers, employees in enterprises, *etc.*;
- Quality multimedia services and the development of quality training content;
- Networking of universities, schools, specialized training centers and cultural centers for exchange of experience, good practices in education and distance teaching and learning.

The management and regulation of the university education system, including and in relation to the development of e-learning, is based on legislation documents of different rank, with varying degrees of dominance in the management process, but in certain relations and relationships between them. In general, they describe the needed decision-making strategies in the process of solving professional tasks of different types, but also comply with the autonomy of the higher schools.

Within the framework of the National Program *e-Bulgaria 2010*, the following goals are set: average levels of the European indicators for development of the information society to be reached; projects related to a network of public broadcasting centers throughout the country to be launched and realized; computerization of Bulgarian schools; creation of computer labs, e-learning sites in state universities; building a high-speed information network between universities and research institutes (<http://europa.eu.int>).

In July 2014, a Strategy for Effective Implementation of Information and Communication Technologies in Education and Science of the Republic of Bulgaria (2014-2020) was accepted (<http://ecet.ecs.ru.acad.bg/bvu>; http://www.minedu.government.bg/news-home/2009/11-02-18_strategy2020.html).

The main goal of the Strategy is to provide equal and flexible access to education and scientific information at any time and from anywhere (from a desktop computer, a laptop, a tablet, a mobile phone). It is planned a unified information environment to be created serving school education, higher education and science. One of the priorities in the vision of the Strategy is the development of accessible, universal and compatible (standardized) electronic content (including access through own mobile devices) and a significant reduction in paper document flow in the field of education and science, as well as the development or adoption of recognized standards and metrics for ICT competence and putting ICT skills as an element in the career development of staff in education and science. Some of the main

objectives of the Strategy are: to create equal opportunities for everyone to obtain quality education services at the level of contemporary requirements and trends regardless of the place of residence and training by using modern ICT; building up personalities adapted to life in the information society with all its capabilities, threats, challenges and risks.

Besides the trends for the future development of e-learning mentioned above, and in accordance with them, the present paper provides an overview of the Round Table on *Trends in e-learning - technological and pedagogical solutions*, held within the framework of the Youth Scientific Conference *St. Kliment's days 2017*.

RESULTS

Based on the outlined trends for the future development of e-learning, a Round Table on *Trends in e-learning - technological and pedagogical solutions* was organized within the framework of the Youth Scientific Conference *St. Kliment's days 2017*, 16-17 November 2017, Sofia, Bulgaria at the Faculty of Biology of Sofia University "St. Kliment Ohridski".

The main objectives of the round table were:

- To discuss and outline the vision of the role and future development of e-learning, with respect to different users: learners, e-learning content designers as well as business needs;
- To discuss and analyze good practices in the context of e-learning as well as to share personal experiences and challenges;
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The objectives thus formulated respond to the need to draw a common vision of the direction in which e-learning will develop and the steps that higher education institutions have to make towards getting in line with European policy.

The following ten contributions were presented during the discussions at the Round Table, led and facilitated by Assoc. Prof. ASYA ASENOVA, PhD and Chief Assist. Prof. KAMELIA YOTOVSKA, PhD from the Faculty of Biology of Sofia University "St. Kliment Ohridski":

Lecturer	Report
Assoc. Prof. Morris Grinberg, PhD New Bulgarian University Department of Cognitive Science and psychology	Using assistant technology for eye-tracking with a view in Bulgaria
Assist. Prof. Polina Mihova, PhD New Bulgarian University Department of Health Care and Social Activities	Parameters of evaluation of online learning platforms
Assoc. Prof. Vladislav Slavov, PhD Technical University Faculty of Automatics	Virtual labs in the context of engineering education
Radoslav Tsochev, Dipl. Eng. Cisco - Bulgaria	Capabilities of teleconferencing systems for training
Ivaylo Blagoev, PhD Bulgarian Academy of Sciences Institute of ICT	E-learning and business
Julius Afzali, PhD Technical University - Sofia	Application of the 3D printer in the training
Pavlin Dulev, PhD New Bulgarian University Department of Informatics	The future of e-learning
Assoc. Prof. Blagoy Uzunov, PhD, Prof. Maya Stoyneva-Gärtner, PhD, DrSc & Chief Assist. Prof. Anelly Kremenska, PhD Sofia University “St. Kliment Ohridski” Faculty of Biology	Electronic courses at the Faculty of Biology - good practices and results
Assoc. Prof. Asya Asenova, PhD Sofia University “St. Kliment Ohridski” Faculty of Biology	Place of e-learning in the professional training of future teachers of biology
Chief Assist. Prof. Kamelia Yotovska, PhD Sofia University “St. Kliment Ohridski” Faculty of Biology	A technological model of a university course for the training of biology teachers in a virtual environment

CONCLUSION

One of the highlights of the organized follow-up discussion in the framework of the Round Table was related to the theoretical aspects and the unification of a common framework regarding the overall process of implementing e-learning at different levels as well as the application of new technologies to promote innovation in the educational process and support the development of learners' creativity. Another aspect of the discussion was related to the development of information and communication technology infrastructure in terms of computer networks, hardware and software. A special focus of the Round Table discussions was related to questions and comments on the pedagogical aspects of applying new technologies to the educational process and their integration within a specific educational context. The dynamics with which new technologies are developing, improving and emerging was analyzed, as well as the emergence of innovations that influence each other and pose additional uncertainty concerning the forecast for the future. Last but not least, the importance of ICT for helping to develop new training methods and increasing the motivation of different groups of learners was discussed including those on children with special educational needs. In general the discussion has culminated with an assessment of the important role that ICT plays in shaping skills and competencies for the 21st century.

CONFLICT OF INTERESTS

The authors declare that there is no conflict of interests regarding the publication of this article.

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