

Al-Farabi Kazakh National University
Institute of Computational Technologies of SB RAS
National Engineering Academy of the Republic of Kazakhstan
High Performance Computing Centre in Stuttgart
University of Pristina in Kosovska Mitrovica
Abu Dhabi University
Novosibirsk National Research State University
Novosibirsk State Technical University
Siberian State University of Telecommunications and Information Sciences
Institute of Information and Computational Technologies

ABSTRACTS

International Conference
"Computational and Informational Technologies
in Science, Engineering and Education"

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The book contains abstracts of the participants of the International Conference "Computational and Informational Technologies in Science, Engineering and Education". The proceeding of the Conference will be beneficial for specialists in the field of Mathematics and its applications, as well as for students, undergraduates, doctoral students majoring Computational and Informational Technologies.

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► **M. Mansurova** - Al-Farabi Kazakh National University, Almaty, Kazakhstan, email: mansurova01@mail.ru, **A. Pyrkova** - Al-Farabi Kazakh National University, Almaty, Kazakhstan, email: anna.pyrkova@kaznu.kz and **E. Alimzhanov** - Al-Farabi Kazakh National University, Almaty, Kazakhstan, email: aermek81@gmail.com

Design and development of online courses on edX platform

At present, there are many universities advancing the technology of online education. Educational programs with the use of information technologies including space television, computer networks, multimedia, etc. are interest. The universities lay special emphasis on the use of the available software: Linux, Moodle, Open Office, Google Docs and others in the learning process. In 2012, Anant Agarwal from MIT founded an intellectual MOOC (Massive Open Online Courses) platform edX. Then, the Harvard University and the Berkeley University joined this initiative. The system of online education edX was created for students and organizations aiming at improvement via advanced technologies, innovation pedagogics and professionally oriented courses. The developers of edX carry out investigations on how students are taught, how they learn the material, how to transform the methods so that to achieve the best results. Taking into account the experience of the universities-partners, the experience in the development of online courses within the project Tempus CANDI (2008-2013), the authors propose the methodology of developing online courses [1]. According this methodology the designing of courses starts with determining of the learning outcomes. It is the learning outcomes that affect the methods of teaching, the content, the sequence of material feed, working out tasks, the choice of different kinds of multimedia tools, development of the system of knowledge assessment. The strategy of knowledge assessment is in giving students the opportunity to demonstrate the achievements of the supposed learning outcomes. In the whole period of the course, a close correlation between the learning outcomes, the methods of teaching and assessment of knowledge is supported. In this methodology, of great importance are the stages of development of learning algorithm, the algorithm of knowledge assessment as well as planning of the kinds and content of audio and video materials. Since 2014 al-Farabi KazNU uses edX platform as a virtual medium which is a convenient medium for realization of all stages of the worked out methodology. At present, the teaching staff of KazNU using edX platform develop various online

courses. Online learning in Kazakhstan occupies a greater educational space. Engagement of national universities of Kazakhstan in the process of development and implementation of online education, collaboration with the leading universities of the world, participation of the representatives of industry in course development process guarantee the great demand and highest quality education, both online and in the classroom, and contribute to sustainable adaptation of new forms of learning in life.

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► **Vera V. Petrovic** - The School of Electrical and Computer Engineering of Applied Studies, email: vera.petrovic@viser.edu.rs, **Anja Jokic** - Faculty of Natural Sciences, Pristina University with temporary place of residence in Kosovska Mitrovica, email: profanaj@yahoo.com

Positive practice in the implementation of Moodle in e-learning

In line with the development of information and communication technology, today's education is not limited to only what required is. Every contemporary individual wants to improve and learn as much as possible and beyond. That is exactly how the popular term of lifelong learning originated. In order to survive in a variety of information and knowledge, it is necessary that one constantly improves himself and keeps pace with the world. As one of the ways to meet these needs, the e-learning was developed, which is progressively gaining momentum and popularity in the world. E-learning brings for sure certain number of advantages in the educational process. It is not an alternative to the existing educational process, but rather an integral part of it, its expansion and improvement. With the introduction of e-learning, have the role and the importance of teachers as mentors, coordinators and participants in the educational process grown. E-learning enables students to be in the center of the educational process, and to take an active role and responsibility for educational outcomes. E-learning is certainly a high quality education process, in which all actively cooperate with the aim of achieving the learning goals that have been set. Moreover the modern information and communication technologies are intensively used to create an adjustable virtual environment. Moodle is offered as one of the good software tools. This paper discusses the application software package Moodle in the process of e-learning on subjects that include content courses basis of informatics and computer science, and studied at the undergraduate level of higher education.

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