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СОДЕРЖАНИЕ

КАЗАХСТАН В БОЛОНСКОМ ПРОЦЕССЕ

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РАЗВИТИЕ ТРЕХЪЯЗЫЧНОГО ОБРАЗОВАНИЯ В КАЗАХСТАНЕ

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E-DUCATION IS A FUTURE OF 4.0 UNIVERSITIES

"One of the most important areas we can develop as professionals is competence in accessing and sharing knowledge"

Connie Malamed

Education is currently viewed as a way to secure an adequate income while contributing to society's needs. The number of young adults wishing to obtain a degree is therefore constantly increasing. Estimates show that the demand for higher education worldwide will have expanded from 97 million students in 2000 to over 262 million by 2025 [1]. Current paper focuses on the basic insights on electronic tools implementation on the way to University 4.0 in order to meet the demands of the modern society.

In discussions of higher education, academics are typically at the forefront of conversation, and career and technical education, i.e. specialized education programs in the skilled trades, health sciences, applied sciences, modern technologies and other types of career preparation, such as dental assistant, emergency medical technician, computer networking, digital media, programming, carpentry and even agricultural sciences, which might help alumni to have an easier time finding jobs in today's difficult labour market, is often overlooked. It also might be a more cost-effective way for students to earn their degree, as it usually does not take as long as completing a college degree. Another possibility to reduce the amount of money students must borrow to complete their degrees, question especially sharp for some of the western countries, for instance in USA, is a competency-based learning, implied by Re-Inventing schools coalition, Young Women's Leadership Charter School and Western Governors University, which allows students to move through course material at their own pace through self-assessment and multisource or 360 feedback. Their exam scores rather than the number of hours spent in a classroom dictate how quickly students move through course material. Some institutions that are utilizing competency-based learning are advertising that students can cut the time it takes to complete a degree in half, and has appeared to be a successful model for many residency programs across Canada [2; 3].

Among the most important questions in nowadays education remain globalization in education and education reforms and emerging technologies in learning as well as learning for employment, emphasizing an inevitable grand role of virtual labs and e-learning, along with education economics, accreditation, quality and assessment, as could be noticed by looking at the list of leading world educational conferences like INTED topics.

Students learn well when they take responsibility for their learning. Learning increasingly takes place in an environment, which is constantly evolving to respond to the personal needs of each learner. The emergence of Open Educational Resources and Massive Open Online Courses (MOOC; now being effectively developed in KazNU) is expected to offer multiple advantages in terms of increased access to higher education, reduced costs and flexible timetables, to name just a few. However, there is little scientific evidence to prove the efficiency of these new models. Some critics even argue that they may well be just another attempt to further commercialise higher education. Meanwhile, blended

learning – a combination of traditional training with digital online content – is seen by many as the best alternative. Gibbs G. 1981's notice is still correct. Awareness and reflection are not merely symptoms of developments in learners, they bring about the developments. It is through engaging students in reflecting upon the process and outcomes of their studying that progress is made [4].

According to Wikipedia's definition distance education or distance learning is a mode of delivering education and instruction, often on an individual basis, to students who are not physically present in a traditional setting such as a classroom. Distance learning provides "access to learning when the source of information and the learners are separated by time and distance, or both". Distance education courses that require a physical on-site presence for any reason (excluding taking examinations) have been referred to as hybrid or blended courses of study [5; 6].

Michael Scott Cuthbert, Associate Professor of Music (Ph.D., 2006, Harvard University) is a musicologist who has worked extensively on music of the fourteenth-century, computational musicology, and minimalism and other music of the past forty years. His article, "Tipping the Iceberg: Missing Italian Polyphony from the Age of Schism," used computer simulations to contradict the unquestioned assumption that most written medieval music has been lost. Cuthbert's research lab has produced "music21," an open-source toolkit for computer-aided musical analysis, which has an installed user base in the thousands: "I think OCW (Massachusetts Institute of Technology OpenCourseWare Educational Platform) is amazing. One of the reasons I really love it so much is that, because I studied art, there were a lot of topics that I missed in the sciences. So OCW allows me to really brush up on those topics that really interest me... OCW is obviously great for self-learning. But what I think is sometimes overlooked is how valuable OCW can be for faculty who are creating their own courses. It allows anyone get an inside look at how other professors are organizing and teaching their classes, in a way they might never have seen. That kind of exposure is invaluable." He has recently published his own two MIT courses on OCW (21M.269 Studies in Western Music History: Quantitative and Computational Approaches to Music History, 21M.262 Modern Music: 1900-1960, and 21M.220 Early Music): "I hope that people find my course useful – but I also hope they'll tell me what they don't like about it. At places like MIT – all over the world, really – there are people who are trying to actually change and evolve knowledge, not just report what's already known. Disagreements and feedback are what creates diversity and new discoveries. That's what really interests me most." For the foreseeable future at least, Cuthbert seems to be close enough to the cutting edge of musical history research, that we can probably afford to listen and learn from him, rather than disagree.

Good example of online learning destination and MOOC provider is edX, founded by Harvard University and MIT in 2012, which offers 950+ high-quality courses in subjects such as humanities, math, and computer science from the world's best universities and institutions to learners everywhere with 2,300+ faculty and staff teaching courses and discussing topics online and 840,000+ certificates proudly earned by edX students. It has 90 global partners, including: The Laura and John Arnold Foundation, which supported the development of the edX platform and increase the number of high-quality courses available to learners; The Gates Foundation, which helps edX to develop courses as well as partner with community colleges to experiment with the use of the courses in a "flipped classroom"; Modern States, working with edX to help more students enter or return to the traditional college system and to make quality education more accessible; LaunchCode, which creates pathways to economic opportunity and upward mobility through online learning, apprenticeships and job placement in technology.

UNESCO defines education for sustainable development (ESD) as education that allows learners to acquire the skills, capacities, values and knowledge required to ensure sustainable development. It also defines it as education for life-long learning, and that fosters responsible citizens and promotes democracy by allowing individuals and communities to enjoy their rights and fulfil their responsibilities. The question of exploring the borders of student engagement and technology based learning could be demonstrated by the following examples:

- Students Organizing for Sustainability an international alliance that collaborate to progress students work on social responsibility and environmental sustainability (http://sosnetwork.groupsite.com/main/summary);
- Sustainability and Environmental Education (SEEd) is a leading player, both in the UK and internationally: "We empower; we facilitate; we catalyse to promote the new learning required by all of us to live sustainably. We know that sustainability (and how to live and work sustainably) is a developing area of knowledge and skills. Our goal is to keep people updated and thinking about good practice. Our policy work aims to share this practice and encourage supportive systems for educators to carry out this important work." June 2016, Young change makers for the Sustainable Development Goals, brought together groups of students in London aged 10-25 to explore how the launch of the Global Goals could enable them to act together in their schools, institutions and local communities;
- Global Universities Partnership on Environment and Sustainability (GUPES) was launched in June 2012, in the lead up to RIO+20 and the Higher Education Sustainability Initiative (HESI). The partnership currently counts over 500 partners worldwide. The goal of GUPES is to promote the mainstreaming of environment and sustainability practices and curricula into universities by supporting innovative approaches to education;
- Global Environmental Education Partnership (www.thegeep.org) mission is to build capacity and create a vibrant learning network in countries who are looking to strengthen their environmental education efforts. In addition, the EECapacity program, led by the U.S. EPA, Cornell University, and NAAEE, is currently leading a MOOC called Environmental Education: Trans-disciplinary Approaches to Addressing Wicked Problems. With more than 130 countries represented and 3,272 participants, this course has built an unprecedented network of environmental educators around the globe. Another demanding course is entitled "Facilitation for Learning for Sustainability". Strong sustainability

focus, enabling participants to apply newly learned techniques to real-world situations. Interested in the learning process. "A great leap forward in the application of many concepts that I have learned throughout my career. Excellent opportunities to learn new skills. I will recommend this course to anyone I know who works with groups of people in formal and informal education on any subject or specialisation." Will Husby, Ecoleaders, 2015.

Another example is a set of electronic lectures, including Polymerase Chain Reaction (PCR) developed in correspondence with Center for distance education, KazNU. The PCR course is intended for a full-time study in computer classes and online learning network (as present on introductory and supplementary level to the general training or upon becoming a part of a larger on-line course or electronic manual) and might be useful not only for the students of our own faculty, School of Biology and Biotechnology (as was shown on third year bachelor students specialty "Biotechnology" during the course "Molecular diagnostics"), but also during classes with the students of other specialties (for instance such as law, mathematics and computer modelling).

E-ducation doesn't just happen. The success of the distance learning throughout the semester within the framework of the course "Organization of scientific research on creation of naturally based medicines" taught by Professor Galiya E. Zhussupova to two graduate students (who currently are at the University of Valencia, Valencia, Spain) was in providing the complete list of information, including guidelines and recommendations to the study of theoretical material, set of material for lectures and seminars, including a complete list of normative documents in the form of temporarily administrative normative documentation, industrial regulations for production of medicines in the form of substances, ointments, tinctures, syrups, capsules, suppositories, developed at the Department of Chemistry and Technology of organic substances, natural compounds and polymer of al-Farabi Kazakh National University. In general, distance learning technologies at our University are used in the learning process for students of corresponding department (second higher education and the first higher education on the basis of medium-specific), as well as for students who went abroad on scientific and language training programs.

The ability to measure innovation is essential to an improvement strategy in education. Knowing whether, and how much, practices are changing within classrooms and educational organizations, how teachers develop and use their pedagogical resources, and to what extent change can be linked to improvements would provide a substantial increase in the international e-education knowledge base improvement and sustainability on the way to 4.0 Universities [7].

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