

GLOBAL E-TRENDS IN RUSSIAN HIGH EDUCATION SYSTEM

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The article shows that today the educational community is undergoing a number of changes. Universities are doing their best to attract international students. These are mobile youth (there are more than 5 million people in the world) with great abilities. The war for talent leads to rapid differentiation of educational institutions.

The authors believe that new technological innovations have come to education with a delay of about 10 years. Therefore, the main task of this research work, according to the authors, is to determine the impact of some trends in e-learning in the Russian education system and to analyze the readiness of Russian universities to such an impact. The authors conclude that the analysis of the results of research on the use of information and communication technologies in higher education suggests that there are no common concepts that would capture and present a lot of facts accumulated in the practice of education in a single system of concepts. The analysis of practice also allows us to draw the author's conclusion about the underestimation of ICT opportunities in the field of national higher education.

Keywords: global educational trends, universities, e-learning

JEL-codes: F69.

Introduction

Modern “post-industrial” era is distinguished by such rapid global changes and almost instantaneous copying of products and services that make it meaningless reaching the goal of long-term retention of a certain market position. The strategy ceased to be only a long-term plan and was formed as the concept of a management process which is characterized by a constant adjustment in the on-line regime. Today, the educational community is also subjected to these changes. Universities today are doing their best to attract international students. They are mobile young people (there are more than 5 million people in the world), possessing great abilities. The war for talent leads to the rapid differentiation of educational institutions. Technological innovations came with a delay of about 10 years in the sphere of education. Modern technical means play big role in our every year life and in the educational process. The media-tools are a useful educational technology thanks to their inherent qualities of interactivity, flexibility and integration of different types of educational information, as well as due to the possibility to take into account individual characteristics of learners and to increase their motivation and cognitive activity (Abeldina et al., 2015; Acar et al., 2008).

Modern information technologies are the basis of informatization processes in the educational sphere, the implementation of which involves:

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- improving the quality of education through the more effective use of available information;
- increasing the effectiveness of the educational process on the basis of its diversification and intensification;
- usage of means, methods and technologies with a focus on developing, advanced and personal-oriented education;
- integration of various types of activities (educational, research, methodological, scientific, organizational) within the framework of a unified methodology, based on the application of information technologies;
- the ability of future specialists in various industries;
- overcoming the crisis phenomena in the education system (Goryachev et al., 2014).

Use of new information technologies in education is becoming increasingly a widespread phenomenon in the modern Russian education. The universities introduce different online platforms (for example, Moodle, Joomla, Edmodo, Blackboard) for the development of educational communications between students and teachers. As a rule, materials, generated on these resources are positioned as educational or educational potential, but often they do not possess these qualities (Adelabu et al., 2014; Aggarwal et al., 2009; Ali and Magalhaes, 2008)

Methodology

The methods for the research are systems analysis and methods of expert judgments.

Stages of the research work

- the first stage was implemented through theoretical analysis of e-trends stimulating education system changes and intellectual capital development is performed;
- the second stage was performed through monitoring and analytical research work aimed at studying distance learning development in high education system of Samara region and its perspectives.

Results

The analysis of e-trends stimulating education system changes and intellectual capital development is performed.

In the sphere of education, technological innovations came with delay of about 10 years. The first online projects here appeared in the 1990s and were associated with the transfer of electronic materials to educational materials. True, they did not have a serious impact on the industry. In 2011, second-generation projects appeared on the market — mass open online courses (Massive Open Online Courses, or MOOC). It is believed that it was the point from which the digital revolution began in education.

Today, the annual growth of the online education market is 27%, the traditional — 5%. In 2016, more than 50 million people around the world studied using the largest online platforms (EdX, Coursera, Udacity, etc.), 800 thousand of them are Russians.

All new educational projects unite one thing — they are built on modern technologies, use a synthesis of advanced developments in the field of computer intelligence, digital technologies and behavioral psychology. The best educational startups already compete with traditional universities for their investments and talents.

Over the last 5 years appeared many companies using AI and Machine Learning to improve educational process. Especially in following sectors:

- Grading automation (ClassroomIQ, Mimir);
- Prediction the behavior of the students (to prevent an increase in dropout rates at MOOC and real schools);
- Personalization education programs (Area9, Aleks, Knewton, Tabor, CogBooks, Cognii, Infantium);
- AI-powered writing assistants;
- Other sectors like dynamic scheduling, matching teachers and schools.

But the best results were demonstrated by companies using AI and ML to create personalization algorithms for education process because society and business understand — “one-for-all” educational programs don’t work because of the difference in mental development both sectors have a demand for such technologies. Integrating such systems with intelligent and adaptive systems that can measure the learning preferences of the user can enable learners to obtain the most suitable learning objects that might be matched with their learning styles. Moreover, even in the classroom teaching, knowing the learning styles of students can also help teachers to adopt appropriate learning materials for efficient learning (Hamada and Hassan, 2017). Such system exploits the modularity of digital content to serve individual learners with content personalized to their learning style and help teachers to track progress and efficiently allocate time and determine teaching approach. More complex systems offer not only personalization but also macro analytics to learn the best methods of teaching certain concepts for learners of different types that can be applied more broadly than an individual piece of content or course.

New technologies are causing "industrial revolutions" that change the work of companies. Business dictates new requirements to people's competencies and the speed at which they are received.

There is a number of “retired professions” leaving the market. The most striking example of recent years is the massive bankruptcies of travel agencies, losing competition to services like Booking.com or Airbnb. At the same time, thanks to new technologies, the professions of the future appear, in which intellectual skills and qualities, which help to make non-standard decisions, are in demand.

Today it is already impossible to build a successful professional trajectory for years to come, but the traditional education system is based on the principle of long-term planning.

The list of the most popular competences will be updated more often. If earlier a new profession arose once in 20–30 years, today it is every 3–5 years. The ability of the education system to respond quickly to new requests, to train specialists not for 5 years, but for 5 months, becomes a condition for the country's competitiveness. To this challenge, most educational institutions in the world have only to find an answer (Khasaev and Ashmarina, 2014).

The modern education system is based on the use of large amounts of information, modern information technologies and online education technologies. The important trend in the development of education is the personification of education, and an effort to make individual education for each student; the heads of educational institutions increasingly turn to adaptive technologies and quantitative evaluation of the educational process. They also need to develop criteria for assessing vocational skills, students’ creativity and critical thinking skills. The solution to these problems is through the use of large data technologies to analyze large amounts of information about educational activities, students’ performance, their involvement in scientific and other activities, and, on the basis of analysis, adjust educational programs, individual training

courses, university management systems, thereby increasing qualitative indicators of educational activity.

In addition, there are still a number of problems that have to be solved. The requirements of the labor market are changing significantly. There is a gap between competencies formed in the university and scarce competencies required in the market. However, the existing system of education with its strong academic approach to the formation of competences does not meet the expectations of employers. Universities do not always pay enough attention to the formation of professional competences, the development of communicative skills, creative and analytical thinking, the effectiveness of which should be appropriately identified, evaluated and coordinated.

To evaluate these results, next-generation strategies are needed that have the potential to quantify various cognitive skills, social and emotional development, and the results of in-depth training; such strategies should provide students and lecturers with feedback, which will stimulate further development. This evaluation is based on the analysis of the training process — the collection, analysis and reporting of data on students in order to understand and optimize the training process in the environment where it takes place. In addition, universities insufficiently pay attention to the problems of qualitative analysis of the training process, based on a set of indicators of students' achievement and involvement. In turn, the results of analytical process could be means of assessing and fundamentally improving the students' training process. The software for data mining must collect and process large amounts of information, allowing students and lecturers to monitor the training process and exchange feedback for further progress.

The equally important problem is students' achievements. Improved analytics using the Big Data technology will help to reduce the number of expelled students and increase the percentage of those who received the diploma.

Another problem that is inherent in modern universities is the massive training and insufficient individualization of students' training. This is a very important problem since the lack of consideration of each student's achievements and the alignment of individual trajectories of his/her training significantly reduces the student's motivation to gain new knowledge and continue his/her studies at the university.

At the same time, collected and processed Big Data on students' training can show how students' certain activities contribute to their progress and achievement of specific educational and other goals and how effective and productive university courses offered to students are and how students are involved in the training process.

The analysis of distance learning development in high education system of Samara region

The most modern trend in the development of modern higher education is the promotion of distance learning and the gradual replacement of education by distance education. To promote the distance education system effectively, the development of information and communication technologies is vital. The authors of this work analyzed distance learning technologies in the leading universities of the Samara region.

The results of the authors' research showed that a number of Samara higher educational institutions have already demonstrated high readiness for the projected changes and are actively implementing information and communication technologies. Samara State Economic University launched the site "Virtual Campus", but so far only for students of the Master degree faculty. This

site was organized on the basis of the MOODLE platform, which is a content management system (CMS), specifically designed to create qualitative online courses by teachers.

The effective organization of undergraduates independent work is proposed to be done through the use of information and communication technologies. New means of communication allow the teacher to communicate with students on a flexible schedule through teleconferences, blog, e-mail. These technologies also provide an opportunity to carry out individual control over the training, the teacher has the opportunity to observe the progress, the time of assignments and the pace of work of individual students. This makes it possible to build a specific schedule for students, and to consult each student individually. On the other hand, students also have the opportunity to monitor their academic performance and correct their results on time (Davies and Graff, 2005; Cheung and Vogel, 2013).

In fact, the term “virtual campus” first appeared in Europe around the mid-1990s. It was introduced in national programs and strategic documents of the European Commission. More than 10 years ago, European politicians began to stimulate an analysis of the potential of ICTs to improve the quality of education in higher education system. The European Commission's strategic reports pointed to the fact that “new technologies” are of strategic importance for the creation of “universities of the future”. The direct result of these reports was a small number of projects aimed at exploring the possibility of creating virtual universities in Europe.

Although the age of the term “virtual campus” is 15 or so years old, it is still in its infancy, and changes very quickly. Over the years, observers have noticed a shift in concepts: from “clearly”, openly, 100% online virtual campus, to virtual, in terms of mobility, and in some ways, as a way for traditional universities to open their borders, to cooperate (inter) And / or attract non-traditional students through e-learning.

As a result of the research, the greatest activity of non-state educational institutions and branches in the promotion of their distance programs was revealed. These educational institutions quite reasonably seek to occupy that segment of the market of educational services, which is not yet being interested too much by the key universities in the region. So, in the Samara branch of the Moscow City Pedagogical University, the specialized structural subdivision — the center for distance learning was allocated. Also, a program was developed to implement distance learning based on the distance education system “Prometheus”.

In addition to the MOODLE platform, Samara State University made some attempts in using the platform Edmodo working out special educational courses for extramural students based on involving social media into the university training process. Studying the perspectives of using social networks in the higher education, the researches emphasize some advantages and disadvantages of these resources for the educational process. Among positive aspects are mobility and efficiency, technological adaptability, recognizability, the difference in the methodology of the teachers' work from the traditional, familiar, well-known communication environment for students, accessibility, interaction, etc.

On the other hand, the use of social networks in the university educational process has a number of difficulties: the lack of a developed concept and scientific and methodological support for the effective application of these technologies in the learning process; lack of access to social networks from the university's classrooms as a result of their blocking or lack of necessary technical support, as well as a large amount of entertainment content, distracting from training activities, psychological barriers, etc. (Goryachev et al., 2014; Selim, 2007).

An analysis of the results of studies on the use of information and communication technologies in higher education suggests that there are no general concepts that would allow us to capture and present a multitude of facts accumulated in the practice of education and upbringing in a single system of concepts. The analysis of practice also allows us to conclude that there is an underestimation of the possibilities of ICT in the sphere of domestic higher education. This is primarily due to the complexity and low readiness of higher education institutions to introduce and use information and communication technologies in their activities.

Discussion

The study of the online technology's application in higher education in the classroom and in a distant form (Graham et al., 2010) shows that for the changing the traditional learning process organization, in addition to development of an activity plan, it is necessary to involve additional resources and knowledge. That means regulation of such aspects as communication time, rules for building communication in the network, formation of additional types of interactions between students, online and offline, defining the roles between instructor and teacher.

A significant research problem in the study of e-learning projects is the development of training courses programs with optimal distribution of time management, online and offline regulation of interaction forms, training and adequate knowledge assessment (Băjenaru, 2012).

Conclusion

Many e-learning experts are against narrow understanding of informatization in the educational sphere, making a bet not on auto-training management systems, universal tools for preparation of training content, educational and testing materials, collection of information about students' progress and others, but also on social networks. These resources are considered as means for building own training or working space expanding opportunities for joint work of participants in the educational process.

Synthesis of "classical", classroom forms of teaching and modern computer technologies, clear determination of the target students group (for example, correspondence students, students with disabilities) create conditions for using electronic programs and online resources in the professional education.

The use of information and communication technologies as additional means of learning, organizational forms of the education process creates conditions for the modernization of the Russian higher school education, providing its accessibility, democracy, the high quality of the academic preparation of future bachelor students, master students and specialists.

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References

1. Abeldina Z., Moldumarova Z., Abeldina R., Moldumarova Z.I. (2015). Virtual learning space in the system of e-learning // *Mediterranean Journal of Social Sciences*, 6 (5), pp. 478-483.
2. Acar E., Wall J., McNamee F., Carney M., Öney-Yazici E. (2008). Innovative safety management training through e-learning // *Architectural Engineering and Design Management*, 4 (3-4), pp. 239-250.
3. Adelabu O.A., Adu E.O., Adjogri S.J. (2014). The availability and utilization of E-learning infrastructures for teaching and learning // *Mediterranean Journal of Social Sciences*, 5 (23), pp. 1348-1355.
4. Aggarwal A.K., Makkonen P. (2009). Critical success factors for successful globalised e-learning // *International Journal of Innovation and Learning*, 6 (1), pp. 92-109.
5. Al-Alak B.A., Alnawas I.A.M. (2011). Measuring the acceptance and adoption of e-learning by academic staff // *Knowledge Management and E-Learning*, 3 (2), pp. 201-221.
6. Ali G.E., Magalhaes R. (2008). Barriers to implementing e-learning: A Kuwaiti case study // *International Journal of Training and Development*, 12 (1), pp. 36-53.
7. Băjenaru, G.C. (2012). Pedagogical challenges in designing e-learning programs in the XXIst century // *Quality — Access to Success*, 13 (SUPPL.3), pp. 711-714.
8. Cheung R., Vogel D. (2013). Predicting user acceptance of collaborative technologies: An extension of the technology acceptance model for e-learning // *Computers & Education*, Vol. 63, pp. 160-175.
9. Davies J., Graff M. (2005). Performance in e-learning: online participation and student grades // *British Journal of Educational Technology*, Vol.5, Issue 4, pp. 657-663.
10. Goryachev M.D., Goryachev M.M., Ivanushkina N.V., Mantoulenko V.V. (2014). Net resources usage in modern education // *Samara University Journal*, Vol.5(116), pp.220-227.
11. Graham C.R., Hilton J., Rich P., Wiley D. (2010). Using Online Technologies to Extend a Classroom to Learners at a Distance // *Distance Education*, 31(1), pp. 77-92.
12. Hamada M., Hassan M. (2010). An enhanced learning style index: implementation and integration into an intelligent and adaptive e-learning system // *Eurasia Journal of mathematics science and technology education*, Vol. 13, Issue 8, pp. 4449-4470
13. Khasaev G.R., Ahmarina S.I. (2014). Main trends and perspectives of HEIs competitiveness improvement // *Vestnik SSEU*. Vol.8 (118), pp. 62-65.
14. Luo N., Zhang M., Qi D. (2017). Effects of different interactions on students' sense of community in e-learning environment // *Computers & Education*, Vol. 115, pp. 153-160.
15. Neisbitt J. (1990). *Megatrends 2000. Ten New Directions for the 1990s*. William & Morrow Company, Inc.
16. Selim HM. (2007). Critical success factors for e-learning acceptance: Confirmatory factor models // *Computers & Education*, Vol. 49, Issue 2, pp. 396-413.
17. Shakleina T.A., Baikova A.A. (2014). *Megatrends. Main evolution trends of global character in XXI century*. Moscow. Aspekt Press.
18. Sun P.C., Tsai R.J., Finger G., Chen Y.Y., Yeh D. (2008). What drives a successful e-Learning? An empirical investigation of the critical factors influencing learner satisfaction // *Computers & Education*, Vol. 50, Issue 4, pp. 1183-1202.

ГЛОБАЛЬНЫЕ ТЕНДЕНЦИИ ЭЛЕКТРОННОГО ОБУЧЕНИЯ В РОССИЙСКОЙ СИСТЕМЕ ВЫСШЕГО ОБРАЗОВАНИЯ

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В статье показано, что сегодня образовательное сообщество подвергается ряду изменений. Университеты делают все возможное, чтобы привлечь иностранных студентов. Это мобильная молодежь (в мире более 5 миллионов человек), обладающая большими способностями. Война за таланты ведет к быстрой дифференциации учебных заведений.

Авторы полагают, что технологические инновации пришли в сферу образования с задержкой около 10 лет. Поэтому основная задача этой исследовательской работы, по мнению авторов — определить влияние некоторых тенденций электронного обучения в российской системе образования и проанализировать готовность российских университетов к такому влиянию. Авторы приходят к выводу, что анализ результатов исследований по использованию информационных и коммуникационных технологий в высшем образовании предполагает, что нет общих концепций, которые позволили бы уловить и представить множество фактов, накопленных в практике образования в единой системе понятий. Анализ практики также позволяет сделать авторский вывод о недооценке возможностей ИКТ в сфере национального высшего образования.

Ключевые слова: глобальные образовательные тенденции, университеты, электронное обучение.

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