

E-LEARNING IN HIGHER EDUCATIONAL INSTITUTION: CURRENT TRENDS OF DEVELOPMENT

G. Mozhaeva

National research Tomsk State University

The article considers the current state of e-learning in Russia, its legislative registration and development prospects. The problems interfering development of e-learning in Russia, and the factors contributing to its spread are diagnosed. The Coursera project created by major American universities is considered as an example of current trends of e-learning projects distribution and conditions of its development.

Keywords: e-learning, social networks, Web 2.0, Coursera project.

Rapid growth of information and information and communications technologies are exerting the deep influence on the processes occurring in the contemporary society and connected with formation of new ideology, social system, culture development, techniques and technologies, convergence of sciences and construction on this basis of essentially new technologies. The transition to the knowledge society as a new phase of development of the modern hi-tech society demands the changes in various spheres of the modern society and in the field of education.

Cardinal change of the lifestyle due to the information and communications technologies influence is connected with formation of the person of a new type who learns behavior standards, rules, samples, adapting to restrictions and advantages of the actual culture. In programs of socio-cultural development of the information society there are two lines connected with processes of globalization and individualization which are defined through formation of the global environment of intercultural interactions and the person who is creatively focused on the development. Thus, the world of culture changes under the pressure of the individual-collectivist programs developed on the basis of information society projects [10].

The change of culture character requires new educational practice that leads to change of external forms and essence of formation. The basic educational purpose changes: it consists now not so much in knowledge training as in maintenance of conditions for self-determination and self-realization of the person. In the new educational paradigm a student becomes the subject of cognitive activity, but not an object of pedagogue's ascendancy. A dialogue between the teacher and the student defines basic forms of the educational process organization directed on the development of active, creative student's activity that it is far from simple reproduction. The contemporary person should not only own certain volume of knowledge, but also be able to study: to search and find necessary information, use various sources of information for problems solving, constantly expand the competences, and continuously develop in dynamically varying world.

One of the leading world tendencies directed on the solution of contradictions between developing culture and the traditional methods in education is the transition to continuous, open education which forms the basis of the information society. In the XXI century an illiterate person is not the one who is not able to write or read, but the one who is not ready to train or to be retrained, if the circumstances demand that [4]. Electronic training (electronic learning, e-learning, further EL) becomes a strong assistant and allows the universities to provide the growing global demand for educational services.

In recent years electronic learning becomes an integral component of educational process at higher schools and is used in all training forms. The application of e-learning allows increasing the education quality due to quickly enriching world educational resources. It also occurs because using the elements of e-learning and distance educational technologies make possible to increase the share of independent students' work in mastering the material. The e-

learning becomes especially acute in conditions of new federal state educational standards that enjoin the reduction of classroom hours' volume and the increase and expansion of independent students' work forms. The e-learning opens new opportunities for organization of such kind of work.

At the same time, the further development of electronic learning requires the legislative support. In 2009-2010 the Russian Federation established the project "The Concepts of the Federal law 'About the industry of e-Learning'" [9]. The formation and definition of the ways of e-learning industry development in Russia became the main idea of the project, and the main goal was the legal guaranteeing of the process of industry e-learning creation and improvement of the national economy and Russian education system on its basis. However an attempt to create legitimate conditions for EL development in our country and the transformation of EL into the economy sector has not been realized.

This task was partly solved by the Federal law from 2/28/2012 # 11-FL "About modification of the Law of the Russian Federation 'About education' regarding application of e-learning and distance educational technologies" according to which "the e-learning is the organization of educational process with application of information containing in databases and used at realization of educational programs, providing its processing, hardware, and also the information and telecommunication networks providing transfer through communication lines and interaction of participants of the educational process" [12].

The law differentiates the e-learning (EL) and distance educational technologies (further DET), where the DET is "the educational technologies are realized by the application of information and telecommunication networks at indirect (at distance) interaction of students and pedagogues". As the basic condition for EL and DET application the law defines the creation and functioning "the electronic information-educational environment including electronic information resources, electronic educational resources, collection of information technologies, telecommunication technologies, corresponding technological means and educational programs providing their mastering by students in full volume despite their location" and allows to apply EL and DET "irrespective of the students' location."

The law adoption is only the first step in the legislative registration of e-learning in Russia, received the acknowledgement in the new law "About education in the Russian Federation" [13]. E-learning demands a number of act enactments directed on order definition of the e-learning organization and application of distance educational technologies, and requirements to the electronic information-educational environment.

At the same time, programs of legislative support of e-learning have been developed and are being developed in more than 30 countries, including Third World countries.

In the majority of countries the educational reform on the basis of e-learning technology inculcation is a part of government's policy. For instance, the United States of America took the new strategy of the education system development, i.e. the substitution of class room training and work in libraries for training through the Internet using electronic libraries; France proclaimed the integration of ICT into the educational process of all spheres as the main task of national education system from the kindergarten to training in colleges, and in 2008 the program of e-learning was financed by the government: "100 % of courses in digital form for 100 % of trainees"; in Finland, Ireland, and South Korea special national programs on e-learning are realized which became the basic tool of educational modernization; in Great Britain the governmental strategy of the education development for 2008 – 2014 years provided deep mastering the new "electronic" pedagogy (e-pedagogy); in the Republic of Kazakhstan the e-learning is recognized as the key direction of innovative development of the educational system, i.e. the general inculcation of e-learning has begun since 2011, and by 2015 it is planned to capture up to 50 % of educational institutions with the e-learning (by 2020 - 90 %) [6]. The European union in the accepted Lisbon strategy for 2000-2010 recognizes the e-learning as the tool of construction of the dynamic competitive economy based on knowledge, and create the educational environment for the whole life [9].

Researchers started talking about e-learning in 1990th when distance education arose due to the development of information communications technologies which caused intensive development of e-learning. This first stage of EL development is characterized by active usage of presentations and testing programs, elaboration of electronic textbooks [7].

The following stage of EL development is connected with corporate learning. Thanks to its financial resources various electronic teaching materials (computer simulators, installations with remote access) are created which are more qualitative and complex. Moreover the electronic tutorials, the organizations and maintenance of educational process, various models of control of e-learning, approaches to estimation of EL quality and efficiency are being developed.

The third stage of EL development is connected with program systems creation providing the complex solution of e-learning problems, i.e. the content control systems, delivery of teaching materials, testing, interactive support of the training environment, knowledge management, learning management (Learning Management Systems - LMS).

At the XXI century's beginning the e-learning began actively integrating with traditional training in various organizational forms: as support of traditional full-time and correspondence courses or as a new level of distance learning development on programs of additional vocational training, refresher training of higher school teachers, applicants' training, the first and second higher education, Master's degree course [7]. In all developed countries the EL occupies its own niche in the educational sphere.

The population interest to e-learning has so much amplified that classical educational institutions began to consider online of courses as an obligatory component of the curricula. Various theoretical and practical online courses become more and more popular among the population.

Many major universities provide free online courses. Among them there are an Open British university (project OpenLearn), universities of Stanford and Berkeley, the University of California, the Technological Institute of Massachusetts and many others. One of most vivid examples is the Coursera project created in 2011, which has originally united open resources of three largest universities of the USA and within a year became the best educational website of 2012 according to the Time magazine version. The founders of Coursera, the professors of Stanford university Andrew Ng and Dafna Koller, have created their project on mass online training ideology, 'many a little makes a mickle', having allowed all volunteers to listen to online courses of lectures of world leading universities free of charge. Only within the first half a year about 1 million listeners have enlisted in the project, and to the beginning of 2013 year about 2,3 million users from 196 countries have been registered on the portal [2].

Now Coursera co-operates with 33 universities, among which there are the technological institute of California, universities of Stanford, Princeton, Michigan, Colombia, Pennsylvania and many other universities. There are eight universities beyond the USA: Swiss, British, Asian. In April, 2013 Coursera started the joint project with Russian partner Digital October [1], assuming the creation of subtitles in the Russian language for Coursera courses, the organization of actions in Russia in order to make the courses more convenient for Russian students.

Nowadays it is conclusive that the Coursera project launching raised the popularity of e-learning. Also the quality of online of courses is growing; technologies are continuously improved, offering various applications and platforms which promote creation of the universal virtual environment convenient both for using, and for material mastering.

E-learning, as any other innovation, faces various attitudes in the society and especially in the education system. The attitude of pedagogues to EL is rather critically who are afraid that they will be superseded from the educational system by EL development, it will replace the real teacher, will deprive of work.

At the same time, the number of EL supporters grows as the development of information and communications technologies. E-learning is a serious challenge for modern universities and the traditional educational system. In the conditions of rapid society development, techniques and technologies, changes of information culture character, development of social services and

technologies making ICT accessible to everyone and changed communication character, the current online education contains huge potential for realization of absolutely new ideas. However, EL can hardly replace completely the traditional system, it will just expand the educational opportunities for the society, create additional comfortable conditions for personal development, for refresher training, for realization of the principle “Education through the whole life”, forming the foundation of continuing education and demanding the search of new methods of knowledge transfer and training technologies.

Information technologies and e-learning can not replace completely the traditional form of training, supersede the teacher from educational sphere. Their role is to change the character of interaction between the teacher and the student in educational process. In the system of EL the teacher turns to the adviser, the tutor helping the student to build an individual trajectory of learning, to teach him to obtain knowledge. Students, in turn, from passive consumers of the educational product turn to active participants of the process of new knowledge creation and accumulation.

Being based substantially on independent work, personal activity, construction of personal educational trajectory, EL demands from the student a high motivation and academic discipline, ability to work independently that calls into question the assumption of replacement of traditional training by the electronic.

Besides, the modern technologies can not replace completely the live communication between the teacher and the student (at least, for the present), carrying out some workshops demanding the auditorium presence of participants of the educational process. Therefore, the most perspective sort of training can be considered the blended learning; this is so-called mixed (or combined) training based on the combination of principles and EL technologies and traditional full-time learning. In this case the combined training also becomes more and more various and assumes carrying out simultaneous classes for distributed audience when a part of students is in the auditorium with the teacher, and another part connects to the educational process in the on-line mode (a webinar, videoconference, Skype) through house computers or from a remote audience. Moreover, a part of students that for various reasons could not participate in on-line training, it is able to study the material by means of off-line technologies, e.g. through the distance learning system, having the access to training materials, video recording of the webinars, and etc. Mixed training comprises the organization of independent students’ work through mass use of electronic courses developed in various environments, virtual and remote laboratory complexes, systems of distance learning, social networks and services Web 2.0, partial transferring of separate types of classes to the virtual electronic environment, and the project activity organization.

Estimation of results of e-learning occurs usually through testing or examination, but sometimes the mechanisms of horizontal estimation can be applied: some students join to estimation process through critical responses to the work of other students and the analysis of these responses; the teacher analyzes these estimations. The horizontal estimation gives the opportunity to students to discuss the training course content in details.

In recent years the attitude to e-learning in Russian higher schools became quieter, but it has not led to its wide spreading. It is connected, first of all, with the following problems:

- absence of electronic content; some courses have no electronic educational resources;
- teachers’ unreadiness; the considerable part of higher school teachers is not ready to work with distance technology application and does not understand inevitability of educational informatization in the conditions of the information society;
- the contradiction between psychological readiness of students and teachers for working in the EL field;
- lack of support; in higher schools there are few experts (methodologists, tutors, advisers) in the EL field, providing the qualified support for teachers and students in the training course;
- absence of necessary standard base in the field of EL;

- the copyright problem; the unwillingness of teachers to perform their resources in open access;
- absence of support of the university leadership (unless EL became a part of the state educational policy).

Simultaneously, e-learning becomes more and more claimed in the full-time education as it permits to solve many problems connected with inculcation of new educational standards and transition to level system of education.

E-learning comprises various formats including training through interactive lectures given by best teachers, game simulators, interactive and audiovisual tests, distance virtual laboratory and practical works providing the teachers' control, modeling of process simulating the reality, the organization of network project activity, creation of network communities according to the training profile (to subject, course, group, etc.). It is provided by regular support of individual curriculum, network online and offline consultations, efficiency of communications, training individualization, adaptation to style of learning of each student, fixation of training. Information technologies applied in e-learning, even more often are used for efficiency increase of full-time education, force the teacher to search for new pedagogical methods and techniques for auditorium work, and allow to raise students' motivation to study [7].

It provides advantages of e-learning which become more and more obvious today. It is freedom and flexibility, access to quality education, possibility to receive the current information at any time and in any place accessible in the world, possibility to develop educational Internet resources, carrying out the project activity, expansion of communicative component of educational activity, formation of information culture and mastering modern information and communications technologies by participants of the educational process, creation of specialized social networks, possibility of distance interaction, constant support of educational activity, independent work with various electronic resources, saving of time, the individual schedule of training, possibility of documenting of training process by means of DL or social services applied in educational sphere, etc. E-learning makes the training process more creative and individual, opens new possibilities for creative self-expression of students.

EL demands the creation of virtual electronic environment of training or the platform of e-learning for its realization which would permit to solve all problems mentioned above. In the modern market of educational services the platforms for EL tend to the individually-focused personal page when the united window of access allows gaining teaching materials, carrying out communications among groupmates, and participating in social networks.

The development of e-learning requires modern equipment at educational institutions that is necessary for inculcation of new educational programs and maintenance of their realization; qualified experts and teachers are also required for integration of new educational programs and maintenance of their realization; the qualified technical personnel providing uninterrupted functioning of the equipment. It is necessary to create the information-educational environment of e-learning including the complex of digital educational resources, the package of information and telecommunication technologies, the equipment, high-speed telecommunications providing interactive technologies, the hardware and software platforms, system of the modern pedagogical technologies providing training in the information-educational environment.

Development of e-learning assumes constant consulting-methodical and organizational support of new educational programs inculcation and maintenance of their realization at educational institutions and makes new demands to teaching-methodical content of curricula. It is necessary to have a clean view of educational resources (the list of offered educational programs, electronic textbooks, electronic resources of information, electronic libraries, and etc.) for creation of an individual student's trajectory and drawing up of individual curriculum. The educational institution should have the interactive electronic content on all subjects including in the curriculum.

One of the important conditions of successful implementation of e-learning at higher school is the comprehension of the fact that e-learning is inherently the training technology focused on students [5]. All the electronic environments created at present in the world put the student in the centre of the educational process.

E-learning is generally carried out with use of automated system of distance learning (educational process management), (for example, 'Electronic university', Moodle, 'Prometei', 'Dozent', WebTutor, and the like), permitting to organize an access to information and teaching-methodical maintenance of programs (specialized databases, electronic manuals, audio- and video material, testing systems), to carry out mediated communications, using a various information technology for providing continuous Internet support of educational process. Thus, in conditions of e-learning expansion at the university it is possible and necessary to develop various program platforms claimed by teachers, providing integration of these electronic environments.

A peculiar alternative to LMS usage is social services of Web 2.0 which are focused on interaction of students among themselves and teachers on the basis of tools of social software: blogs, wiki, infos, mental cards, podcasts, social networks [8; 14].

Continuous development of social services strengthens their role in e-learning. At the same time the social services are pointed both at formation of the global environment of intercultural interactions and reflect the globalization tendency, and at formation of creatively developed person. The former is realized through such new services as CouchSurfing, LinkedIn, Google Docs, the latter is in the services similar to Freelance, workle.ru, Workzilla, and etc. The example of bright new social educational products promoting the growth of popularity of e-learning are LinguaLeo, Busuu, pointed at development of linguistic competences.

Application of social services and technologies allows us to realize a number of essential tendencies of contemporary educational paradigm connected with transition from knowledge consumption to its manufacture; from masterfulness to transparency of educational process when "the performed works of students are stored in the system that allows to avoid subjective and authoritarian valuations of students' activity"; "from an expert to the assistant" when the teacher turns to one of the co-authors of teaching material created collectively by a team of developers or with participation of students; "from a lecture to the conversation" where individual and personality conversation is dominated; from "training about something" to "to training how to do it"; from "an access to information" to "the access to people» that is provided by modes of consultations, personal messages, and the system of e-learning support [11].

Speaking about prospects of EL development, it is necessary to note the inexhaustibility of information and telecommunication technologies, including possibilities of social services which are more actively applied to educational activity. Even more often EL uses new means and technologies connected with development of Web 2.0: an electronic portfolio, audio- and video-podcasts, virtual environments, e.g. Second Life (SL), webquest technologies and others.

Mass implementation of EL at higher schools accelerates essentially the development of mobile and tablet technologies. A distinctive feature of mobile training from the electronic one is the primary use of portable devices in the course of access to knowledge and educational communications: mobile phones, smart phones, tablets.

Mobile training is not the direct consequence of use of social services in education, but it is close tied with them. The occurrence of portable devices promoted the increase of popularity of social network services and users involvement into them. Owners of smart phones and tablets began to spend even more time in social networks, showing high activity. Therefore the combination of mobile and social technologies in education allows the latter to answer more effectively and operative to the inquiries of modern generation connected with availability of knowledge, convenience of its obtaining, timeliness and an urgency.

At the same time the integration of mobile and social technologies opens up new possibilities for e-learning, for example, in the form of technologies of added reality. In 2012 the Google company presented the concept of a new portable device, personal gadget – 'Project

Glass' (Google glasses) [3]. This concept can practically erase the borders between physical and virtual reality, opening new possibilities to e-learning being earlier inaccessible. Google plans to launch batch production of these devices by 2014 which certainly influences the e-learning development.

It is important to notice that development of e-learning, naturally, generates the whole spectrum of new scientific directions at higher schools which are connected not only with the development of new information, communications and pedagogical technologies, but also with the research of cultural interfaces of EL tools, the social phenomena generated by EL development, with studying of features of EL management.

Thus, the effectively operated e-learning is one of the important factors of innovative development of contemporary education in whole and of higher educational institutions in particular. Balanced EL, supplementing the full-time education, should become a priority direction of development of the educational system in the conditions of globalization, mass internetization and socialization of services and technologies. The e-learning is even more often considered as a new paradigm of the XXI century's education, becomes one of effective ways of hurdling of the Russian educational system isolation.

BIBLIOGRAPHY

1. A Pilot Translation Collaboration with Digital October in Russia. [Electronic resource]. – URL: <http://blog.coursera.org/post/47541935276/a-pilot-translation-collaboration-with-digital-october>
2. Kurs22: portal on education. [Electronic resource]. – URL: <http://kurs22.spb.ru/news/115-obrazovatelnoe-soobshchestvo-rf-obespokoeno-veroyatnostyuytesneniya-tradicionnogo-obrazovaniya-distancionnym.html>
3. Project Glass [Electronic resource]. – URL: <https://plus.google.com/+projectglass/posts>
4. Zillion. Online education. Distance learning at higher schools of Russia. [Electronic resource]. – URL: <http://zillion.net/blog/28/distantsionnoie-obuchieniie-v-vuzakh-rossii>
5. Andryushkova O.V., Kozlova A.V. Complex approach to modernization of educational process at combined form of teaching. // E-learning at traditional university: collection of articles – Novosibirsk: NSTU edition, 2010. – P. 25-36.
6. 'E-learning' will appear in Kazakhstan. [Electronic resource]. – URL: <http://www.zakon.kz/4464247-v-kazahstane-pojavitsja-jelektronnoe.html>
7. Kazanskaya O.V. From distance learning to electronic one // Informational technologies in education. – Novosibirsk: NSTU edition, 2009. – # 1 (17). – P. 4-5.
8. Komelina E.V., Gusakova T.M. Use of Web2.0 technologies in educational process at higher school // Teaching Informational Technologies in Russia: Open All-Russian conference [Electronic resource]. – URL: http://www.it-education.ru/2009/reports/Komelina_Gusakova.htm (17.09.2010)
9. Concept of Federal law "About the industry of e-Learning" (project). [Electronic resource]. – URL: <http://mmc1012.unn.ru/News/ExpertSovet.php>
10. Loskutnikova V.M. Anthropological aspects of educational informatization // Open and distance education. Issue 1(9), 2003. P. 66 – 71.
11. Parshukova G.B. E-learning in Web 2.0 epoch // E-learning at traditional university. – Novosibirsk: NSTU edition, 2010. – P. 120-124.
12. Federal Law from 28.02.2012 # 11-FL "About modification of the Law of the Russian Federation 'About education' regarding application of e-learning and distance educational technologies" [Electronic resource]. – URL: <http://www.rg.ru/2012/03/02/elektronnoe-obuchenie-dok.html>

13. [Федеральный закон от 29 декабря 2012 г. № 273-ФЗ «Об образовании в Российской Федерации»](http://www.zakonrf.info/zakon-ob-obrazovanii/) [Electronic resource]. – URL: <http://www.zakonrf.info/zakon-ob-obrazovanii/>

14. Feschenko A.V. Social networks in education: analyses of experience and perspectives of development / Open and distance education. – #3 (43) 2011 – Tomsk: TSU, ACEU, 2011. – P. 44 – 49.