

## Teaching in Blackboard LMS as One of the Methods for Improving Efficiency of Person-Centered Learning

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**Abstract:** Development of Russian education is impossible without introduction of modern didactic materials. One of the opportunities for improving education efficiency is introduction of electronic training aids. This will further distant learning that is especially important for Russia with its large territory, low level of transport infrastructure development, lack of opportunities for fast and convenient migration of population and other problems of communication and internal migration. However despite the mentioned problems, the distant learning is to be developed as an additional element not replacing lectures, seminars and meetings of teachers and students. The article investigates peculiarities of teaching in Blackboard LMS (Learning management system), its advantages and disadvantages. In addition, different world educational environments and effects of such technology introduction into the educational process are considered.

**Key words:** New educational technologies • Education in Blackboard LMS • Activation of cognitive activities  
• educational sector and information technologies

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### INTRODUCTION

Development of electronic training course at present is topical for information technology development aiming at facilitating teachers and students in the educational process [1].

Comprehensive development of a modern human being is impossible without forming of cognitive interests, relevant teaching of new information technologies in modern education and introduction of electronic training course [2].

The stage, experienced by the educational system at present, may be compared with the epoch that followed the appearance of book-printing. As it is known, this resulted in rejection from the system, when the teacher was literally reading his lectures and the listeners were writing them word for word and then learned by heart. The class-and-lesson system developed by Czech teacher and humanist Jan Amos Komensky became an answer to a new situation. In this system the students receive textbooks that may be used for studies at home and in the class. Similarly, now computer technique is destined to be a revolutionary change in the existing education technology. Information technologies result in the changes of the existing educational system at schools,

colleges, technical schools and universities and introduction of computers to all spheres of human activities – to reevaluation of the role of different knowledge. Main function of computers in education is solution to a number of problems directly related to information (accumulation, search and processing), introduction of experimental educational complexes allowing the students to independently receive necessary knowledge [3].

Dynamics of reforms in Russia and their orientation to the innovation development determine significant changes in the content and quality of specialists' training. So, the educational reform realized today is intended to provide its continuity and strengthen its relation with science and innovation activity. Growing requirements in retraining and raising the level of personnel expertise, the necessity to provide education for all population strata, including disabled people and the need to provide individual trajectories in education place require new educational forms and methods, new organization of training process and rise of its quality.

**The Main Part:** In the solution of the described problems the special role belongs to information and communication technologies (ICT), providing increase in

productivity of teachers and university personnel, transparency and flexibility of training process and independence from geographical location, disabilities, level of basic education and other factors that had earlier limited educational opportunities within the frameworks of traditional forms.

In the information sphere in the universities, there is a contradiction between the ever more widening application of electronic training aids, as means of university education and lack of determined specificity of such materials, which use fosters activation of training and cognitive activities of the students [4].

One of possible ways for resolving this contradiction may be an approach, where electronic training aids will be used on a systemic basis [5].

The environment of distant learning allows teaching distant students, creating additional motivation for training, providing monitoring, control and planning of educational activities at the level of the educational institution, students' groups and every individual student. The Distant Learning Environment improves quality of education, provides equal opportunities for accessing education by all categories of students and increases efficiency of investments in education [6].

Introduce the notion of electronic training resource (ETR). ETR is the complex training program system providing continuity and completeness of a didactic cycle of educational process: providing theoretical material, training activities and control of knowledge level; this is a program and methodical complex providing an opportunity to take the training course or its significant section using a computer independently or under the teacher's supervision.

Electronic training resource is a program complex with trainings aids and tests related to a certain subject.

Today ETR are actively introduced not only to the systems of open distant learning, but in traditional full-time studies: in the system of general education, primary professional education, secondary professional education and higher professional education. ETR are used for various purposes: to provide independent activities of students in mastering new material, realization of differentiated approach to educational activities, education quality control, etc. At that in various educational institutions, a rather large number of ETR covering the diverse domains are being developed.

ETR designing compared with other information systems is characterized by proper specificity. During ETR designing there are two stages. The first and major

stage is determination of didactic conditions. This is the process of didactic conditions determination that essentially distinguishes development of educational electronic resource (ETR in particular) from the development of any other information product. In the work of I.G. Zakharova the necessity of the method of downgoing design of ETR is emphasized; this method includes profound preliminary conceptual and technological elaboration of the developed product considering its all possible applications and peculiarities of integration into the educational process. In this case, ETR design starts from determination of educational objectives (knowledge, skills and abilities) considering additional opportunities provided by ETR. After determination of main pedagogical concept the content of educational discipline is formed, the program is detailed into themes and modules, educational methods are selected and modules and scenarios of ETR work are designed. At the following technological stage the problem of transforming the methodical idea into interface, designing and realization of the functional structure of ETR are solved.

There are seven main technological stages of design and development:

- Analytical stage including development of general idea of ETR, building of information model of the studied discipline (sections of discipline, themes), formulation of main didactic problems and objectives of education and preliminary determination of general content of the course;
- Strategic stage, including identification of students' "image", development of textbook mission, selection of determinant strategic line of education (selection of penetrating and/or basic pedagogic technology, methods and means);
- Stage of training closely bound with the previous stage and including development of composition and general plan of ETR development;
- Technological and construction stage being a direct realization of idea as a software product, its debugging and adjustment and correction;
- Stage of introduction including approbation of final software product;
- Stage of control and diagnostics; on its results the conclusion on the quality of software product may be drawn and ETR may be evaluated in general from the point of view of its compliance with functional requirements;

- Stage of forecasting, including analysis of feedback “user – team of authors”, improvement of ETR considering remarks and requests of users and transfer of new vision related to the problems of ETR development on the solution of the following didactic problem.

According to this approach, the peculiarities of designing of both content and educational technologies of ETR are as follows:

- The method of subject area structuring is used and as a result the training material is divided into integral logically complete blocks;
- Main information components of educational activities related to studying ETR material for training organization are distinguished;
- The single (but distributed over the entire volume of ETR) thesaurus of subject area is constructed;
- Practical assignments methodically conjugated with system content are developed and then included into different innovation technologies transformed into interactive versions.

Consider another classification of ETR design stages.

In ETR design the following main activities may be distinguished: identification of the problem, conceptualization, formalization, realization and testing.

Identification includes determination of the roles of process participants, characteristics of the solved problems, objectives and used resources. At this stage the working group membership is identified; if necessary the problems of additional training are solved: in the area of information technologies for pedagogues and the problems related to presentation of didactic materials in specific subject area for programmers.

Conceptualization includes determination of content, objectives and problems of educational discipline that fix the conceptual basis of knowledge. The pedagogue determines what types of information will be presented in ETR (texts, graphics, animation, sound and video fragments) and what relations should be set between them. For instance, what accompanying sound is the most preferable during examining knowledge and what materials should be presented in the form of static graphs with text comments and animation video, etc.

Formalization includes analysis of didactic problems that should be solved by used ETR, search and formalization of possible methods of their solution based

on the model of educational process and characteristics of available data and technologies underlying ETR. At this stage, possible scenarios of didactic materials presentation for students and principles of evaluation and feedback are studied and then algorithms for students' interaction with ETR are built.

Introduction of Environment of distant learning allows reaching the following effects:

- Increasing university attractiveness for students and teachers due to using avant-garde technologies allowing satisfying modern requirements in flexible and efficient educational model.
- Involvement of additional categories of people: disabled and working people due to personal configuration systems and distant learning methods.
- Improvement of economic attractiveness of the university due to the development of the replenishable base of high-quality resources and services upgraded on the ongoing basis.

Today in Russia, the market of Distant Learning is developed unsystematically and without centralized planning; there is lack of understanding of objectives and purposes of industry development that is substantially different from the situation in Europe.

The educational sector may be divided into the state educational institutions and private companies providing educational services.

Compared with the situation in the world the Russian universities are much behind the time: today there are only several institutions that may realize the network educational process from the first to the last discipline, specialty or direction of education. The leaders in the area of distant learning are Tomsk State University of Control Systems and Radioelectronics, Tyumen State University, Moscow Institute of Economics, Management and Law and Moscow Institute of Technology. Besides, the worth of noting are Moscow State University of Economics, Statistics and Informatics, the Russian New University, Moscow Industrial University, etc. Moreover, in the territory of Russia there are about 100 foreign educational institutions working through Russian intermediaries.

The distant business education is rather widespread. The largest schools in Russia are the Distance Learning Center of the Academy of National Economy within RF government, Moscow Business School, International Institute of Management LINK, Institute of Master's Programs (MESI), etc.

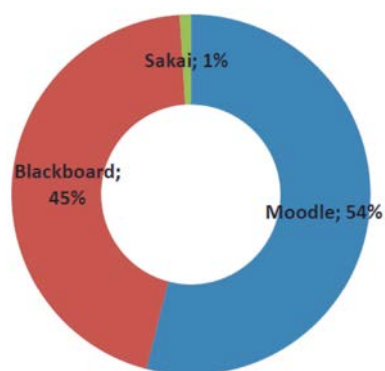


Fig. 1: Analysis of educational activities efficiency

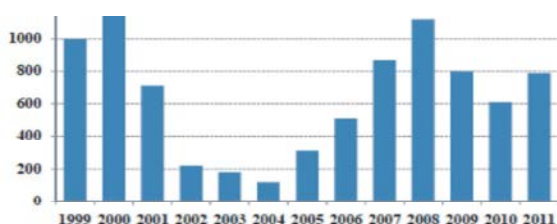


Fig. 2: Investment into development of the companies specialized in e-learning technologies for the period from 1999 to 2011 according to Ambient Insight, Mln. USD.

The companies of the USA and Europe dominate in the world market with 70% share. There are several main leaders in the market. This is the most popular system in the world with closed source code Blackboard and two most popular systems with open source code – Moodle and Sakai. According to <http://www.zacker.org>, they divide the market as follows [7]:

From TOP-200 best world universities according to The World University Rankings for the year 2011 at present over 70% use the systems and solutions of Blackboard company [8].

According to "Ambient Insight", for the period from 1999 to 2011 over 8.5 billion US dollars were invested into the development of companies dealing with e-learning technologies [9].

According to the author an interactive course may be introduced in the educational process exceptionally as an additional educational element not replacing lectures, seminars and meetings of teachers and students. The course is an additional aide in teacher's activities.

The author opposes complete replacement of classical education by distant learning.

Besides, the survey among the students showed that they are not ready to completely change to interactive training not attending lectures.

Totally 56 students of the 3<sup>rd</sup> year participated in the survey. The survey consisted of 10 questions. The survey allowed identifying a number of proposals and evaluations of the system operation.

As the survey showed the majority likes this educational environment (38 people of respondents), 45 people are interested in it and 42 people feel comfortable with this environment. However many people noted its imperfection, but as a whole they were ready to use this environment as an extra option to lectures and seminars. This conclusion correlates with the results of investigations performed in the US [10] that allowed determining that LMS is the especially efficient educational instrument in terms of time saving.

## CONCLUSION

Considering of the above listed objectives and possible users results in the following conclusion: in the nearest years it will be impossible to focus only on e-learning. Methodical materials should be developed and oriented to their targeted use in the Internet, local networks, students PCs and in remote training and consulting centers and branches. Besides, the presentation should allow easily e-mailing necessary materials, controlling education quality and further processing of results in different modes: working directly in the network with operational processing by the server, e-mailing results or sending in another carrier with further processing and presentation in respective form. In usage of traditional training materials in electronic form there are purely pedagogical problems (to agree training forms with their possibilities and to form teachers' interest) whereas from the technological side the arising problems are soluble.

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