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MODERNIZATION OF THE E-LEARNING MANAGEMENT SYSTEM AT UNIVERSITY

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Abstract

The article describes the management system of e-learning in the higher education institute "Samara State Transport University" in order to determine innovative areas of education, integration of online resources in the modern information educational space according to international standards. The authors reveal the possibilities of popularization of scientific knowledge through the introduction of modern educational technologies in the educational process. The article shows the importance of the matrix structure application, its relevance in comparison with the existing linear-functional structure, which does not correspond to the dynamic processes occurring in the modern University. In turn, the matrix structure contributes to the imposition of a constant linear-functional scheme of the head University on purposefully organized target structures (matrix elements). The article proves the essence of the target structures providing the implementation of e-learning. It defines the elements of the e-learning management strategy, namely, the emphasis of the management of the higher education institute on the ideas of introduction of information and communication technologies into the organizational environment of the University; this implies the organization of the Department with clearly defined functional responsibilities. It becomes relevant to improve the skills of teachers and staff, monitoring the activity of teachers who apply and develop EA; introduction of various kinds of incentives, as well as the creation of a legal framework for the virtual use of intellectual property of the teaching staff.

Keywords: E-learning management system, legal framework, intellectual property, innovative areas of education.

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1. Introduction

Active use of e-learning methods with the possibility of using promising pedagogical, modern information and telecommunication technologies is a significant direction in the development of the education system nowadays. Countries with a large territory, such as Russia, are particularly in need of such technologies. The creation of effective e-learning systems helps to solve the problem of education for a large percentage of population, as well as promotes higher education for people who do not have an opportunity because of some reasons to study full-time.

E-learning is considered to be not only the basis of open and continuous education, but also helps to improve the quality of traditional University education, introducing innovative learning technologies, providing the educational process with diverse electronic educational resources. Moreover e-learning embodies the idea of an individual approach to each student, contributing to the education transition from the traditional paradigm of learning to a new one. Traditional system of education is characterized by principles of translation and passive acquisition of knowledge. However new system of education involves not only an independent "extraction" of knowledge by students, but a collaboration (teacher and student) building of new knowledge.

According to some experts, such opportunities of e-learning can strongly change the landscape of education all over the world and in Russia in the nearest future. The main competitors of universities within countries are small multi-user online courses, which are the first step towards the globalization of education. Therefore, how effectively each University will be present in the market of on-line education, mostly depends on the ways of influence on the effectiveness of e-learning, on the e-learning management system.

2. Problem Statement

The introduction of the e-learning management system in the in the higher education institute "Samara State Transport University" depends on the effectiveness of solving problems which are associated with several components. The first one is a human component which includes students, teaching staff and a system administrator. The second component is called processual, which includes four types of processes: learning processes, learning management processes, organizational processes and processes of development and maintenance of resources. The third component is technological that includes software. The e-learning format consists of three types of systems: 1) learning Management Systems (LMS); 2) learning Content management systems (LCMS); 3) authoring software products (Authoring Packages) (Federal Law of 29.12.2012 N 273-FZ "About Education in the Russian Federation", 2012).

The first element of e-learning management is considered to be the emphasis of the management of higher educational institutions on the ideas of introduction of information and communication technologies in the organizational environment of the University. Moreover the introduction of an adequate concept for teachers and the staff explains the basics of the use of on-line environment in training; international marketing of academic services; management of electronic educational resources by teachers and staff and profit from their implementation (Bespalko, 2002). This element of e-learning management strategy involves the organization of a Department or a number of employees, with clearly determined functional responsibilities, which are fixed in the documents of the University.

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A higher educational institution is considered to be an information infrastructure consisting of software, technologies, peripherals, the Internet access and a special organizational culture promoting the exchange of knowledge and experience. Thus one of the successful conditions of free exchange of information in a higher education is considered to be the staff with the skills and necessary competencies for the use of new educational technologies and ready to share this experience with each other.

A human component is a significant point in the effective e-learning management. An active use of e-learning in the educational environment of the University requires a well-formed information and communication and methodological competence (The labor code of the Russian Federation of December 30, 2001 N 197-FZ, 2001).

The second stage is considered to be the organization of training programs for teachers and staff, financial support for scientific and academic exchanges, including international ones. On the one hand, these exchanges improve information and communication competence, on the other hand, the necessary methodological training, which is important to obtain such skills as creating control and measurement and training materials for the e-learning environment. The use of the educational material, which has an exceptionally competent psychological and pedagogical justification, can contribute to a good didactic potential of electronic technologies.

A well-organized motivation system should increase the percentage of the teachers using e-learning. It is necessary to include on-line teaching in the academic workload, as the creation of an electronic content and online work, especially at the beginning, requires a lot of time. An important aspect may be the distribution of allowances to teachers' salaries through the system of an effective contract (Federal Law of 29.12.2012 N 273-FZ "About Education in the Russian Federation", 2012).

The third stage is focused on the activity of teachers using and developing e-learning. Moreover, this stage takes into account various kinds of incentives because of personal and corporate contributions to the creation and sale of the products of higher education institute. It should be noted that an objective assessment and an adequate approval develop a sense of one's own involvement in innovations. Besides, it helps the staff understand that successful work is based on the qualitative participation of each member of the organization. At the same time, the strategy of non-material incentives is seen in the coordination of mutual requirements and expectations of both the management team and employees. It is important to take into consideration constant feedback that helps maintain employees' interest to the solving problems (Vdovushkina & Dmitriev, 2015). This feedback contributes to the internal organizational productivity of the university (The labor code of the Russian Federation of December 30, 2001 N 197-FZ, 2001).

3. Research Questions

The creation of a competitive e-course requires teaching materials, electronic educational resources and media content. Moreover it requires methodological recommendations for creating an electronic training course in the e-learning system, as well as methodological developments for the effective studying of the material. These methodological recommendations and developments should include a detailed review of optimal ways for students' individual work and its self-control, the correctness of the tasks, recommendations for qualitative use of consultations, monitoring the acquisition of theoretical material and doing practical exercises. Accordingly, it requires the presence of specialists whose functional

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responsibilities are marketing of educational programs based on the use of e-learning, monitoring of the legislative and regulatory framework of e-learning, including international standards, researching and promoting world experience of e-learning.

4. Purpose of the Study

The development of a competitive electronic content is possible only in conditions of intensive joint work of teachers, scientists, i.e. highly qualified specialists in special areas, as well as in the field of didactics, teaching methods, psychology, pedagogy and programmers who know IT technologies. Therefore, a staff of IT specialists, website coordinators consulting teachers and University staff is required to create various forms of e-learning. At the same time, the organizational unification of the procedures for cooperation between teachers, software developers and site coordinators is considered an object of rational choice and compromise of its participants in a certain time period and is fixed in institutional attributes – university regulations, orders, agreements, etc. (The labor code of the Russian Federation of December 30, 2001 N 197-FZ, 2001).

It is actual nowadays to conduct intramural competitions of e-courses, which help create and implement the most successful methods. Besides, competitions develop a creative approach of planning and promoting scientific and academic interactions (The labor code of the Russian Federation of December 30, 2001 N 197-FZ, 2001), and the growth of their economic efficiency.

E-courses, like all types of intellectual resources are considered to be competitive scientific and educational products. As a result, nowadays they are the main financial resources of a higher education institute. Taking into account the economic point of view, the ICT application is considered as a set of rules "aimed at determining the conditions under which an individual or collective choice of the allocation or the use of resources can be made" (Voronina, 2014, p. 370).

Therefore, it requires the creation of a legal framework for the virtual use of the intellectual property of faculty members. It is necessary to create a legislative environment, including local regulatory support, federal and industry regulatory support of e-learning, external regulatory support and other regulatory documents.

5. Research Methods

In the process of research and testing of the e-learning management system, methods of theoretical research were used. They include study and analysis of the literature on the subject of the research, system analysis, logical modeling of social processes. On the basis of these methods the initial theoretical ideas of the study, its basic concepts and directions were determined. Moreover, some empirical methods such as observation, study of documentation, modeling, analysis of the results were taken into consideration during the research and testing of the e-learning management system.

6. Findings

The e-learning management system appears to be mobile, dynamic and viable. Therefore, the linear-functional structures prevailing nowadays in a traditional University, which characterize hierarchical

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relationships, contradict to the introduction of important and relevant changes and the development of innovative processes.

According to the literature analysis (Bul', 2003; Voronina, 2014; Dmitriev, 2015; Vdovushkina & Dmitriev, 2015), the matrix structure becomes more perspective due to the fact that linear (vertical) control of functional organs involves the same levels of control.

The matrix structure contributes to the introduction of a constant linear-functional scheme of the head university on purposefully organized target structures (matrix elements) since the relations of the subjects of management are represented as subordinated relations (rector – head of the Department) and coordinating relations (each subject of management performs the provided functional duties). In this case, the target structures are project groups or teams (teams) that contribute to the implementation of e-learning.

These groups are directed by a representative of the administration of the head University and include professionals from different departments. The cooperation of responsible people of different levels for projects and the employees of functional departments contributes to the introduction of horizontal communications. This cooperation stimulates qualitative and effective use of material and human resources and encourages employees to work in different projects.

Students' e-learning should be realized in the context of managed learning, which provides individual learning paths and depends on the results of the control. The effective use of such environments requires the integration of training systems and the corporate information environment of the university. This means that students and university staff must have access to information systems of the institution, that is, each student and employee must have a personal account and an access code to the main university information services (file service, email, Internet, etc.).

Students should have access to corporate databases through accounting and management information systems and services. In addition, students should have access to digital educational resources - full-text university and external libraries (including digital versions of materials published by university teachers), presentations of lectures, disciplines and video support.

To solve this problem educational-methodical system of teaching materials (educational-methodical complex) should be created based on network technologies with open access to resources, which allows integrating the intellectual potential of the university (Bukhantseva & Dudina, 2009).

An important factor in the successful management of e-learning is considered to be the interaction of a student with various departments of the university. Different types of communications: the dean's office – a student, the library – a student, the commandant of the hostel – a student - can use services based on e-mail, a corporate portal. These services are considered to be a component of the general information system, which has data about students, study groups, telephones, and specialties (Bikmukhametov, Kolganov, Shaikhislamov, & Sagmanova, 2012).

The e-learning management in the higher education institute "Samara State Transport University" expects faculties' responsibility for budgeting, financing, planning and internal assessment of educational and training products; the introduction of appropriate faculty units for the assessment, their communication systems; balancing between centralized and decentralized management with the introduction of new educational and training technologies.

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There are operational losses as one of the activities of a market organization that affects the achievement of its leading goals in the external environment - competitiveness and productivity. The authors believe that the coordinated work of the organization and focus on efficiency and productivity can resist external environment (Williamson, 1983).

It is advisable to create some supporting services to manage the activities of university departments of a general and special profile (The labor code of the Russian Federation of December 30, 2001 N 197-FZ, 2001).

The effective introduction of the e-learning management system in the higher education institute "Samara State Transport University" requires some rules to be followed by both employers and employees. That is why, it is important to introduce this system to the whole staff of the University. Moreover, it is necessary to teach all the employees to use this system. Documentary support for this stage may be the following:

- an order to introduce an e-learning management system in the higher education institute "Samara State Transport University";

- an order to conduct training on the use of the e-learning management system in the higher education institute "Samara State Transport University".

The next stage of the introduction of the e-learning management system in the higher education institute "Samara State Transport University" is the correction.

After that, the system undergoes initial testing during which the disadvantages are corrected. The documentary support for this stage may be the following:

- an order to conduct some additional research on e-learning management system, preventative measures, regulation and resolution in the higher education institute "Samara State Transport University";

- a report on the additional research of e-learning management and preventative measures, regulation and resolution in the higher education institute "Samara State Transport University";

- a protocol for evaluating the effectiveness of the e-learning management system in the higher education institute;

- a report on detected shortcomings in the e-learning management system;

- an order to introduce a modified e-learning management system in the higher education institute;

- an order to organize advanced training on the e-learning management in the higher education institute;

- an order to organize advanced training on the e-learning management according to the education plan;

- a protocol of the commission on the work done (Figure 01).

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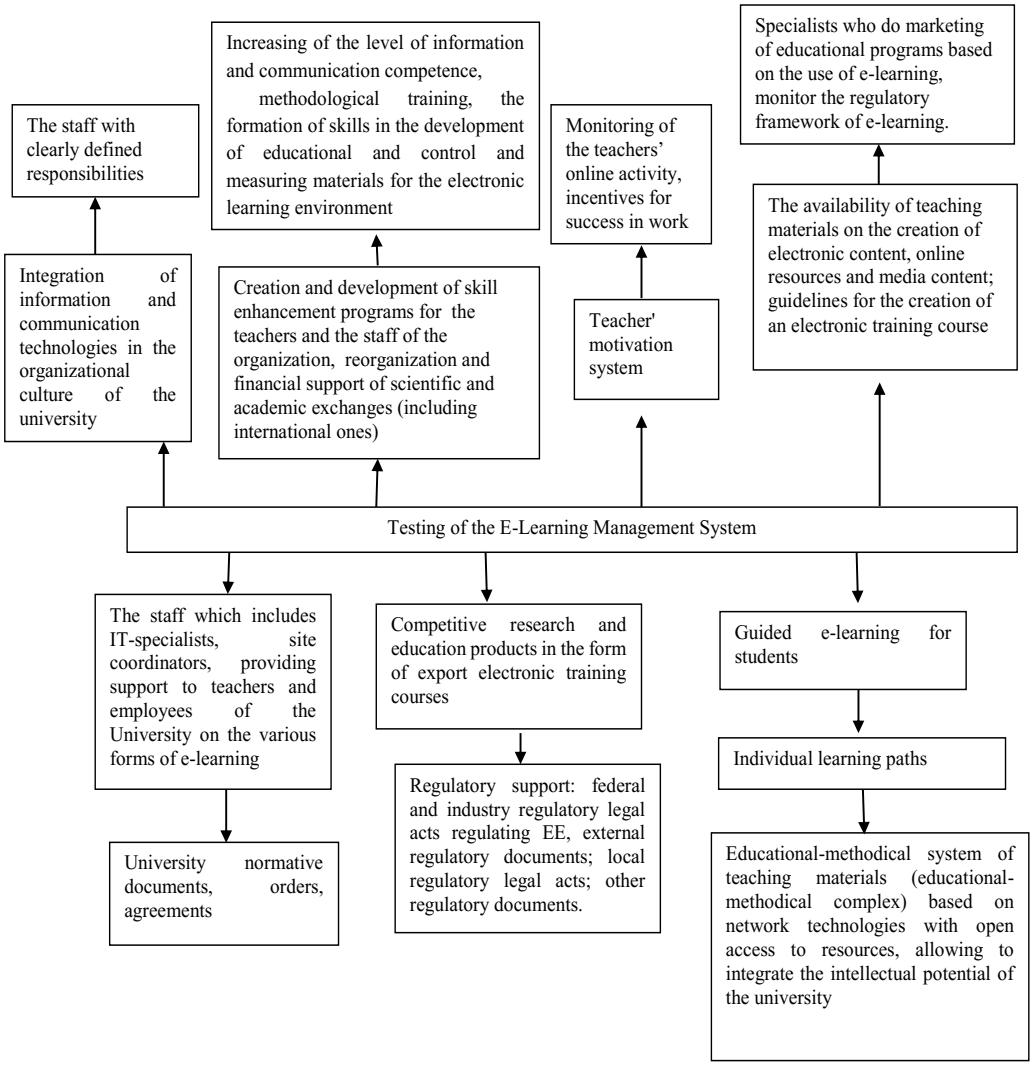

Figure 01. Testing of the E-Learning Management System

7. Conclusion

Summing up the analysis of testing the e-learning management system in the higher education institute "Samara State Transport University", the following conclusions should be made. A number of socio-economic problems can be solved with the help of e-learning, such as to increase the general educational level of the population; to expand access to higher education levels; to meet the needs of people in higher education; to organize regular professional development of specialists in various fields. The e-learning system should focus on providing the population of various regions of Russia with the opportunity to get modern education. This requires a detailed study of the normative, educational, methodological and organizational support of e-learning. Management skills of the e-learning system are becoming an important tool in the work of a teacher, as the conscious application of appropriate technologies helps to improve the quality of education, a creative start for preparing people for life in various social environments, provides the leading character of the entire education system

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