PEDAGOGY AND EDUCATION

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INFORMATION TECHNOLOGIES IN THE
SYSTEM OF HIGHER EDUCATION

Abstract. The article discusses the need for widespread introduction of a component based on modern information technologies into distance learning. A brief analysis of the existing main educational initiatives of leading companies in distance e-learning is presented. Variants of a conscious choice of educational services and specific steps for their implementation in the educational process are proposed. It is emphasized that the use of these technologies in the educational process will improve the quality of training students in higher educational institutions, as well as reduce material costs for their education.

In the rapidly changing conditions associated with the intensification of information exchange, the higher education system is entrusted with the function of scientific and methodological support of the system for improving the professional training of specialists.

Increasing the effectiveness of professional training in the conditions of extramural education, ready to carry out professional activities at a high level, requires the improvement of existing and search for new forms and methods of organizing the educational process, taking into account the use of complexes of technical and didactic means that ensure the relationship between classroom and extracurricular forms of classes.

The cardinal changes that are currently taking place in all spheres of society are accompanied by a rapid increase in the number of professions that require in-depth professional training focused on a specific area of professional activity of a specialist.

Due to the high level of computer literacy of students and the increase in independent work, the need for the use of information and communication technologies in the learning process increases. Along with new computer technologies and the Internet, new teaching technologies are also developing. One of such forms of education, which can be implemented on the basis of modern information technologies, is distance learning [1, 2].

Specialists on strategic problems of education call distance learning the educational system of the 21st century. The relevance of the topic of distance learning lies in the fact that the results of social progress, previously concentrated in the field of technology, are now concentrated in the information sphere. The era of computer science has arrived. The stage of its development at the moment can be characterized as telecommunication. It is an environment for communication, information and knowledge. Based on the fact that professional knowledge is aging very quickly, it is necessary to constantly improve it. Distance learning today makes

it possible to create systems of mass continuous professional education, general exchange of information, regardless of time and space. Thanks to the concept of gadgets that are currently developing, telecommunication technologies in distance learning will enter educational practice as an effective basis for training and continuous support of a high qualification level of specialists.

The use of distance learning technologies is the implementation of a set of measures aimed at using computers and computer technologies in teaching and educational work, in managing the educational process. Distance education integrates existing teaching methods and provides them with a qualitatively new level. The main idea of the methodology of modern systems of distance education is the creation of an educational and professional information environment, which includes computer information sources, electronic libraries, video and audio libraries, classic textbooks and teaching aids.

When introducing distance learning into the educational process, a number of issues arise related to equipping an educational institution with modern computer equipment and software. It is necessary to clearly understand what a distance learning system should be able to do.

According to Gotskta [1], an online learning system should have the following basic capabilities:

– placement of course materials on the Web on web resources;

– registration of a student online;

– passing the course, including offline work with the material and online communication with the teacher;

– knowledge testing, testing of students in the learning process, certification of students at the end of the course.

Also, the distance learning system should have the ability to present information of the following types: Text, Graphics, 3D graphics, Animation, Flash animation, Audio, Video.

Based on the foregoing, the problem of choosing a platform on which a virtual learning environment will be built is key and this choice depends on a number of factors: what requirements are imposed on the environment, what functional

characteristics should be present, which users the environment is targeted at, and, importantly, by what means you possess to acquire and support the required platform.

There are two types of learning software platforms:

– based on commercial software;

– based on Open Source solutions.

The most common way to purchase a distance learning system is to purchase a ready-made solution with documented capabilities, on the basis of which the customer organization solves the problem of deploying distance learning. The cost of software usually includes detailed documentation, methodological and technical support. At the same time, the customer organization independently puts the system into operation.

Another way is to deploy a free distance learning system by an organization. This way allows you to significantly reduce the cost of implementing a project for deploying a distance learning system, "sharpen" the system to fit your needs and requirements, but almost all the burden of implementing the system falls on the IT service of the organization. The implementation project can take a long time.

For higher education institutions, in particular, the most acceptable is the choice of a freely distributed distance learning system.

The analysis of the use of distance learning systems in the educational sector in the leading higher educational institutions of the world [3] is presented in Fig.1.
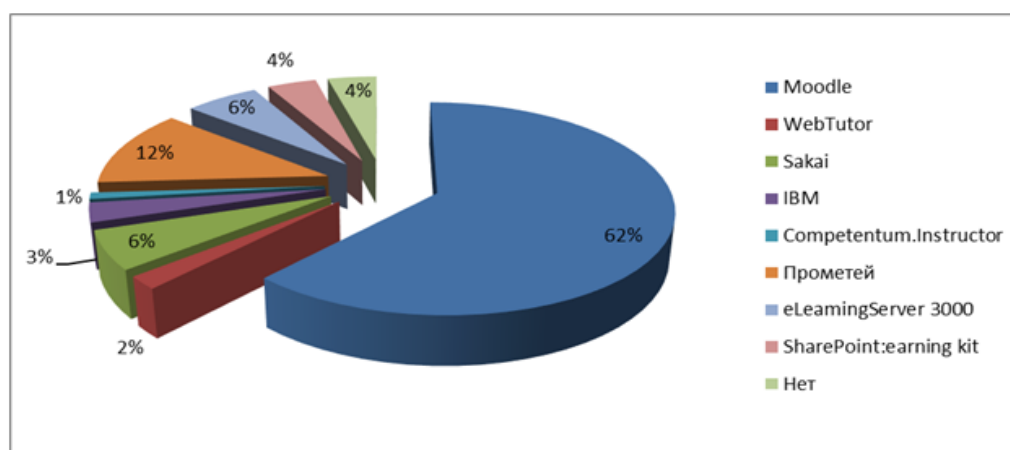

Fig. 1. **Distribution of distance learning systems in the educational sector**

It can be seen from the above figure that the Moodle system is in the first place by a huge margin. It is a free open source software product, which allows it to be customized in accordance with the needs of the educational institution, as well as to provide a full cycle of distance education.

Also promising is the new EDX online learning system launched by Harvard University and the Massachusetts Institute of Technology.

The main goal of the project is to combine the efforts of two leading universities to create modern online courses for free of charge and provide them to students around the world.

According to the authors, these two systems Moodle and EDX are the most promising for use in distance learning for higher educational institutions.

Moodle stands for Modular Object-Oriented Dynamic Learning Environment. Moodle is a free learning management system focused primarily on organizing interaction between teacher and students, although it is also suitable for organizing traditional distance courses, as well as supporting face-to-face learning. To use Moodle, it is enough to have a web browser, which makes the use of this learning environment convenient for both the teacher and the learners [4].

EDX is a free online education system. It is an automated computer-based and Internet-based learning management system.

EDX, like any other learning management system, is a web application located on a server and accessed through a browser. The server is usually located in a university or faculty building, but it can be located anywhere else. Basically, a Learning Management System gives the teacher the ability to create and manage access to a course website so that only enrolled students can view it. In addition to access control, the Learning Management System provides a wide range of tools that will make the training course more effective. The platform has social media accounts where course participants can ask questions and communicate. [4,5,6].

Conclusions. Distance learning based on information and telecommunication technologies will allow: to organize seminars, lectures, practical classes for students geographically located in different cities of the country; if students have certain gadgets with appropriate software, they can participate in seminars, practical classes

and lectures without being present in classrooms; thanks to the opportunities provided by professional social networks, professional forums, it is possible to analyze cases (situational tasks and real events) with the help of a distributed study group, it allows to use the intellectual resources of many professionals to solve the problem, creating brainstorming situations; distance learning and the information and communication technologies accompanying its functioning allow to establish an objective assessment of the knowledge gained by students and their professional suitability, taking into account their activity when working with cases and grades obtained during the final tests; the result of such training is the formation of a personality with the necessary set of key competencies, capable of solving various professional tasks.

For the successful functioning of such distance learning systems, it is necessary to resolve the issue of protecting professional information networks from unauthorized access.

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