Methodology for Developing E-learning Courses in IT Education

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Abstract: The development of educational processes in the universities of Kazakhstan in modern conditions occur in the following areas: individualization of educational methods, the transition to a continuous educational technology, the use of information technology in the educational process. The emergence of a new form of distance learning has fundamentally changed the idea of organizing the educational process as a whole. The use of modern educational technologies allows to increase the number of university students served.
Relevance The article describes the implementation of this process, which is associated with the solution of a number of issues such as: developing an infrastructure for e-learning: developing new methods and training and sets of programs to support a single information space: developing e-courses: training students in using e-learning tools for training.
Methods In the context of ubiquitous informatization, interactive forms of interaction are needed, covering a large contingent of students, ensuring the mobility of the teaching staff. The only form corresponding to these requirements is distance learning presented in the form of a whole range of technologies ensuring the delivery of the main volume of the material being studied to students, interactive interaction of students and teachers in the learning process, providing the learner with the opportunity for independent work on mastering the material being studied as well as in the learning process.
Results Remote educational technologies in teaching students are one of the important activities of the university. The Faculty of Distance Learning provides technological support for the educational process, conducts training for teaching staff in distance learning technologies.
Discussion The authors of the article describe the technology of remote learning using information and communication tools of the Internet.
Development of distance courses based on state standards of the Republic of Kazakhstan and compiled taking into account the experience of European universities - leaders in the field of e-learning.
Conclusion The authors of the article believe that the increasingly widespread term "e-learning" includes the use of information and communication technologies (ICT), which, potentially, can be used in education, is rapidly expanding.

Index Terms: e-learning, information and communication technologies (ICT), distance learning technologies.

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I. INTRODUCTION

The organization of the educational process is carried out with the use of modern educational technologies based on the use of the Internet to provide the student with access to educational resources, as well as test knowledge test control systems.

When introducing distance learning technologies, the goals are set:

- study of the possibilities of distance learning technologies in the system of higher education;

-determination of a complex of organizational and pedagogical conditions that contribute to the effective implementation of distance learning technologies in the educational process;

- creation of a model of organization of the educational process based on the introduction of distance learning technologies.

The introduction of distance learning technologies includes:

1. Formation of a database of DOT and an application for working with it (students, tutors).

2. Organization of classroom and distance learning for DOT with the methodologists of faculties and departments.

3. Organization of continuous technical control of distance learning (creation of a centralized e-mail on the mail server Gmail.com with transfer to the DOT department).

4. Creating conditions for maximum individualization of education in the DOT system.

5. Systematic updating of information on the distance learning page.

6. Development of a schedule of consultations conducted using distance learning technologies (departments).

7. Conducting distance learning lessons within the network interaction in the DOT system.

8. Planning new directions for introducing new information technologies into the educational process.

9. Conduct continuous monitoring of the implementation of distance learning technologies. [1]

Expected results of the introduction of distance learning technologies:

1. Increasing the competence of teachers in the application of new information technologies in the educational process.

2. Creating the basis for the creative approach of the teaching staff to the process of presenting knowledge, taking into account all the innovations taking place in the educational space.

3. Development of recommendations for the use of new technology.

4. The quality of knowledge of students enrolled in DOT in all disciplines exceeds the quality of knowledge of students enrolled in the traditional system. Using distance education, the student gets the opportunity to:

• To get access to educational and methodical complexes of disciplines;

• Ask the teacher (tutor) a question and get advice;

• Send control (course) work (including electron

Mr. option) and get a teacher's review;

• Pass the knowledge control by passing a test test in the DOT system. (Open access to exam questions);

• Find out the schedule of the session (calendar in the DOT system and announcements on the main page of the site);

• View the news forum containing information about the organization of the educational process (comment);

• Get access to the ZhGU electronic library;

• Communicate with students and teachers in on-line mode. (links to email and chat). [2]

To introduce DOT in universities, work is underway to move to a network technology of education. LMS Moodle was chosen as the system for organizing distance learning on network technology. [3]

II. THEORETICAL FOUNDATIONS OF RESEARCH

Moodle is a distance learning environment designed to create high-quality distance learning courses. This software is used in more than in other countries by universities, schools, companies and independent teachers. By its capabilities, Moodle compares with well-known commercial educational management systems, at the same time it differs favorably from them in that it is distributed in open source codes - this makes it possible to "sharpen" it with the features of each educational project and supplement it with new services. [4]

Advantages of Moodle:

• distributed in open source code - the possibility of "customization" for the features of a particular educational project, the development of additional modules, integration with other systems;

• ample opportunities for communication: file sharing of any format, mailing, forum, chat, the ability to review the work of students;

• the ability to use a credit rating system (point);

• full information about the work of students (activity, time and content of study, portfolio);

• software interfaces provide the opportunity for people of different educational levels, different physical abilities (including people with disabilities) to work, using different languages of instruction (Kazakh, Russian, English and German).

In the process of developing a distance education system, a modular course display system is used.

To implement the distance learning network technology, the educational organization must have:

- informational and educational portal;

- equipment with access to the telecommunications network;

- tutor classes, electronic reading rooms and electronic libraries;

- online training multimedia content;

- network testing complexes;

- network content management educational systems;

-educational, educational and technical personnel who have been qualified for DOT.

The informational educational portal must meet the requirements of the educational organization's website implementing DOT and additionally contain a module.

TO module should contain:

- authorization system (definition of access and user rights);

- role management system;

- means of protection in case of failures and accidents;

- means of protection against malicious programs;

- means of recording user work;

- advanced content management system;

- the formation of contingent management;

- testing system.

III. ANALYSIS AND DISCUSSION

According to the Distance Learning Organization Rules, to increase the effectiveness (quality) of training, we offer organization (export of questions from the GIF format).

The "Didactic Distance Learning Tools" section includes a mandatory set of EEMCD, a typical curriculum, a working curriculum that includes the content of subjects, a CTP, a list of recommended literature (main and additional), a unit breakdown of the course, a schedule of remote consultations;

- electronic lecture course;

- materials of practical and seminar classes;

- laboratory workshop (assignments, examples, guidelines);

- tasks for independent work of a student and independent work under the guidance of a teacher;

- materials on the organization of boundary control (tests, test tasks, individual tasks, etc.);

-materials on the organization of the final control (test examination tasks, questions for the exam, tickets, examination tests).

The supplementary kit includes methodical instructions for the performance of coursework, computer-based training programs: simulators, tutors, reference materials, multimedia versions of teaching and teaching aids, and other materials to help master the discipline's educational materials.

The contact hours include: consultations, control measures: 0 Examination, protection of laboratory work, essays, term papers, projects, final state certification. The consultation of the teacher (synchronous and asynchronous) is a prerequisite for the implementation of distance learning. The university of distance learning prepares materials for current, intermediate and final certification and provides them to each trainer. For persons entering the distance learning before the beginning of studies, the university conducts an introductory course on familiarization with the technologies and the DL system. Thus, the goals and objectives of use to simplify as much as possible the process of implementation and development of the developed distance learning systems for students. The achievement of the goals is facilitated by the support of the university management, flexibility and wide functionality of the developed solutions.

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Having introduced the e-learning system at the university, we invest in its future and keep up with modern development trends.

E-learning includes the use of information and communication technologies (ICT), which can potentially be used in education.

The basic principles of e-learning are:

- flexibility of the learning process (access to learning at any time);

- accessibility of training and teaching materials (access to training anywhere);

- adaptability of educational material depending on the requirements and level of consumer knowledge.

From a practical point of view, e-learning is as follows:

- students and teachers have registration data to access the e-learning system;

- in the e-learning system for students, e-learning courses are available on the subjects being studied, including audio, video, slide, and text-graphic lectures; laboratory and practical classes; individual (home) assignments (essays, essays, tasks, etc.); videos; animations; glossaries.

- a set of intermediate (for each topic) and final tests was developed for each discipline:

- students and teachers use all possible means of communication for communication (e-mail, chat, forum, video tutorials).

IV. CONCLUSION

In the process of introducing distance education and the educational process, it becomes necessary to develop new methodologies for developing training courses, with the help of which a given level of quality of educational services would be provided. Certain steps are being taken to address these issues. In the program on general education discipline "Informatics" added a section on e-learning that includes:

- basics of e-learning;

e-learning methods;

- methodology for creating a course and evaluating its performance, communication technologies used in e-learning;

- modern technologies for creating distance courses.

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