

Bulut texnologiyalari va ta'lim platformalarining ta'limdagi o'рни

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Annotatsiya. *Ta'lim jarayonida deyarli e'tiborga olinmagan zamonaviy va istiqbolli axborot texnologiyalaridan biri bu bulutli hisoblash texnologiyasi (bulutli hisoblash) bo'lib, u internet tarmog'idan foydalangan holda istalgan joydan ma'lumotlarni saqlash qurilmalari, ilovalari va xizmatlaridan foydalanishni ta'minlashga mo'ljallangan infratuzilma sifatida tushuniladi. Bulutli texnologiya bir vaqtning o'zida ko'p sonli o'quv materiallaridan iborat bo'lgan taqsimlangan ma'lumotlarni saqlash va qayta ishlash tizimlaridan iborat onlayn ta'lim tizimini tashkil qilish, butun ta'lim faoliyatini yagona platformada tashkil etish imkonini beradi.*

Kalit so'zlar: *ta'lim paradigmasi, axborot-kommunikatsiya texnologiyalari, bulutli texnologiyalar, bulutli platformalar, moodle, docebo, TalentLMS, edmodo*

The role of cloud technologies and educational platforms in education

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Annotation. *One of the modern and promising information technologies that is practically not focused on in the educational process is the cloud computing technology (cloud computing), which is understood as an infrastructure designed to provide access to data storage devices, applications and services from anywhere using the internet network. Cloud technology makes it possible to organize an online educational system, consisting of distributed data storage and processing systems, consisting of a large number of educational materials at the same time, to organize the entire educational activity on a single platform.*

Keywords: *educational paradigm, information and communication technologies, cloud technologies, cloud platforms, moodle, docebo, TalentLMS, edmodo*

Роль облачных технологий и образовательных платформ в образовании

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Аннотация. *Одной из современных и перспективных информационных технологий, на которую практически не обращают внимания в образовательном процессе, является технология облачных вычислений (cloud computing), под которой понимается инфраструктура, предназначенная для предоставления доступа к устройствам хранения данных, приложениям и сервисам из любой точки мира с использованием сети Интернет. Облачные технологии позволяют организовать онлайн-образовательную систему, состоящую из распределенных систем хранения и обработки данных, состоящую из большого количества учебных материалов одновременно, организовать всю образовательную деятельность на единой платформе.*

Ключевые слова: образовательная парадигма, информационно-коммуникационные технологии, облачные технологии, облачные платформы, moodle, docebo, TalentLMS, Edmodo

Introduction. The large-scale increase in the amount of information is making new demands in the educational process. There is a need to master information and use convenient tools for their adequate and effective use in the educational process. The revolutionary changes that are taking place in today's technology have led to the application of computer and technical tools, in general, ICT technologies, precisely in ensuring the adequate use of information in the educational process [1].

One of the promising Information Technologies is cloud computing technology (cloud computing), an infrastructure designed to provide access to data storage devices, applications and services from anywhere using the internet.

In conditions where the spread of innovation is increasingly structured according to the network principle, it becomes very important to organize the network mutual actions of educators. The network mutual action leads to a sharp increase in the effectiveness of scientific and educational activities in cooperation, helps to accelerate the implementation of the results of work, achieve positive social results that ensure equal rights and opportunities for scientific and pedagogical employees and educators. This is how network interaction is organized in a sufficiently efficient way using cloud technologies.

The modern ICT, as the main vector in its development, actively develops in the direction of the use of Cloud Technologies, offers modern educational organizations a huge amount of integrative and organizational functional capabilities for the optimal implementation and support of educational processes within the framework of the existing educational system, supplemented with the necessary basic components for the organization of the educational system.

The use of technologies in education can lead to an increase in efficiency, a decrease in various costs, and an increase in effectiveness. Therefore, it is important for educational institutions to create websites that meet modern requirements using technologies such as HTML, CSS, JavaScript, J Query, Asp.Net, and PHP. one of the issues is the simplicity of the user interface, and the design does not tire people. In addition, the world's oldest and highly ranked universities manage to introduce their educational institutions to students and professors from all over the world using such platforms, and implement the process of students' admission to universities online. Web technologies in education. The use of technologies in education can lead to an increase in efficiency, a decrease in various costs, and an increase in effectiveness. Therefore, it is important for educational institutions to create websites that meet modern requirements using technologies such as HTML, CSS, JavaScript, J Query, Asp.Net, and PHP. one of the issues is the simplicity of the user interface, and the design does not tire people. In addition, the world's oldest and highly ranked universities manage to introduce their educational institutions to students and professors from all over the world using such platforms, and implement the process of students' admission to universities online. Web technologies in education. Against the background of the rapid development of Information Technology and soon unsystematic attempts to introduce the most modern ICT into the educational process, the previous format of educational activities is no longer able to effectively and significantly optimally provide the necessary level of the main components in educational activities, and as a result, a slight decrease in the growth of educational results of learners is observed, In accordance with traditional ideas, modern information and communication educational environment (ICT) is considered the main supporting components of the computer and global Internet network, the use of which in educational activities is used in the time Fund of pedagogical staff.

Literature review. Problems of introducing ICT into the educational process M.M. Abdurazzakov, V.P. Bepalco, A.G. Gein, S.G. Grigorev, V.V. Grinshkun, A.A. Kuznesov, I.V. Robert, T.K. Selevko, O.I. The work of Shilova and others has been widely covered. Educational platforms are **digital spaces designed to provide access to educational, interactive, and**

personalized content. These platforms encompass various formats, from virtual classrooms to mobile applications and specialized websites. Below, we will analyze the most **common types of online educational platforms.** Although Learning Management Systems (LMS) are often the preferred choice for educators and institutions to host their content, other more specific digital platforms can be of great help. In fact, many of them are already integrated within the LMS as mentioned earlier.

Here are some of them: **Virtual Classrooms:** Virtual Classrooms are online environments that simulate a traditional learning experience. They allow students to access course materials, participate in discussions, and take assessments from anywhere with an internet connection. **Educational Applications:** These are mobile applications specifically designed for education. They offer interactive lessons, exercises, and student progress tracking. **Online Learning Platforms:** These platforms provide complete online courses, often in collaboration with educational institutions. Students can earn certificates and degrees through these platforms.

Educational Social Networks: Platforms that foster collaboration and knowledge sharing among students and educators. These networks can include forums, study groups, and communication tools. **Digital Libraries:** Virtual repositories of educational resources, such as eBooks, articles, and videos, available for download or online reading. **Personalized Learning Platforms:** They utilize algorithms to tailor content to each student's individual needs, providing a highly personalized learning experience, by relying on various methodologies such as learn methodology, for example.

Leading scientists in the field of informatization of Education (M.M. Abdurazzakov, A.A. Andreev, S.A. Beshenkov, Y.A. Vagramenko, I.E. Vostroknutov, S.G. Grigorev, A.R. Yesayan, S.D. Karakozov, A.A. Kuznesov, K.K. Colin, M.P. Lapchik, Z.F. Mazur, V.M. Monakhov, I.V. Robert, N.I. Rijova et al.) work emphasizes the need for a goal-oriented organizational process of providing the educational sphere with the theory, technology and practice of the use of Information Communication Technologies in the training of specialists. With a methodology for introducing network services to the teaching process, in particular, for the organization of mutual Network actions of learners, Ye.K. Gerasimova, N.Y. Goncharova, S.V. Zenkina, A.A. Kuznesov, O.L. Mnasakanyan, M.M. Nimatulaev, G.M. Nurmukhamedov Y.D. Patarakin, M.A. Surkhaev, M.V. Fedoseeva and other scientists were engaged. However, the use of network services on the basis of cloud technologies in the educational process, the selection of cloud services from them for further introduction to educational activities of educators and educators, and the provision of information security in the work with cloud services have not yet been fully covered today.

Main part. A number of technologies are used today to organize online education through the Internet. Cloud computing technology is the most effective way to organize an educational system through the internet. Cloud technology makes it possible to organize an online educational system, consisting of distributed data storage and processing systems, consisting of a large number of educational materials at the same time, to organize the entire educational activity on a single platform.

The organization of cloud Education Services has the following advantages over other methods:

- Ease of connection and simplicity of implementation;
- Low cost and universality of the platform price;
- High security;
- Reliability;
- Easy adaptability of the system to the network platform;

There are also a number of disadvantages to organizing cloud systems. The main thing from them is that it is required to connect with a permanent network.

There are a number of advantages to organizing cloud computing systems:

- no special software is required on the subscriber device, only an internet connection is required;
- all training data and educational systems software are hosted on a single platform.
- The system can be accessed from anywhere in the world where the Internet is available;

- All services are online and there are no problems like downloading and using;
- It will be possible to turn the entire university into an electronic University and manage it through the internet.

Today, on the basis of cloud computing technologies, many developments have been developed for the organization of the educational system. There are many internet systems available today to organize cloud services. The most commonly used of these systems include:

- Box.net;
- Dropbox.com;
- Diigo.com;
- Smartsheet.com;
- Microsoft Office 365.

Let's look at the sequence of organizing an educational system based on the Dropbox cloud server service. Dropbox cloud service system <https://www.dropbox.com> organized on the basis of the site. On this site, the organization of the system and the placement of data on it is carried out in the following sequence.

Through the web interface, the user performs registration to access the system.

Once the registration is done, the following can be done through the window that appears on the website:

- Create new folders;
- Upload new files;
- Create or add new directories;
- General connection organization;
- Edit and delete files.

Thus, the above-mentioned systems make it possible to organize not only educational, but also various systems based on cloud technologies.

The use of modern online platforms in education today is one of the important conditions for improving the quality of education and ensuring functional literacy of students by mastering the professional experience of professors in the field of education. Here are number of them with their advantage and disadvantage sides.

Moodle is a free platform that allows users to create individual courses. The platform can manage virtual classes, create certificates and evaluate training courses using analytics. A social network can be created by exchanging messages between participants and teachers in the course forum. The platform can be widely used for collaborative learning technology, that is, it can help to organize an active learning form and solve tasks in training sessions. A voluntary evaluation system can be used. It offers to work with courses in 3 different ways: forum, structure (without linking the educational module to calendars), calendar (with linking the educational module to calendars). The platform has the following elements: Wiki, questionnaire, glossary, questionnaires, tests, organization of lessons in different ways. A WYSIWYG HTML editor can be used to enter lessons, and TeX or Algebra tools can be used to enter mathematical and physical formulas. In addition, the platform has a mobile version for working on mobile devices, integration with the OneNote plugin of Microsoft Office, support for SCROM and APIs, and the ability to sell courses using the PayPal system.

Analysis and results.

Amenities:

- Simple and dynamic interface that can be easily configured;
- Supports open forum, plugins and resources;
- Ready-made templates;
- Mobile software for mobile devices;
- Collection of necessary equipment for the educational process;
- A comfortable environment for organizing the activities of teachers and students;
- Very good automated test system;

- Supports various pedagogical scenarios and strategies;
- Open source (OpenSource);
- Completely free to use; - Another advantage of using MoodleCloud, a service provided through cloud technology, is that it works through Moodle's head office;

Disadvantages:

- It is possible to create demo courses using cloud technology and work with only 50 users, the service is paid depending on the number of users;
- Learning the platform and working on it is somewhat difficult;
- To use the platform, it is necessary to install a separate server and to configure it, and the support of a good web developer;
- It is necessary to log in with a 3-level domain name for organizations in the service provided through cloud technology;
- There is no possibility to install your own or personal plug-in in the service provided through cloud technology;
- The service provided through cloud technology contains various advertising content;

Docebo is designed to improve the working environment and efficiency of the educational process, to create multi-functional remote online courses that work through cloud technology. The platform allows enterprises and organizations to improve the skills of their employees with the help of rapid courses, to create courses that meet voluntary requirements. The platform consists of 4 modules: Learn - formal training, Coach & Share - social training, Extended Enterprise - training other users, Perform - knowledge management. Learn is the main training module, the rest of the modules can be purchased as an optional extra. The platform can view 17 types of reports: users, courses, test results, sales of training courses and save them in PDF format.

Features:

- Modern, convenient user interface;
- Integration with business systems (CRM);
- Sale of courses;
- Supports SCORM, AICC and Tin Can compliant materials.
- Can work with PPT, PDF, docx, xls and video formats.
- It is possible to organize automatic tests and questionnaires.
- One of the main advantages is creating courses using a modular structure based on the requirements of the educational institution or organization creating the course;
- User list can be imported;
- Can be implemented quickly;

Disadvantages:

- The full use of the platform is paid, but it can be used with a 14-day demo version. To use the demo version as well, you need to send an email to the corporate mail.
- Payment must be made to use various widgets on the platform.
- There is no editor of personal electronic resources on the platform;
- Organization of webinars using GoToMeeting/Training/Webinar, Adobe Connect, Cisco Webex paid iSpring Learn LMS is simple and convenient for the user, it can be used anywhere, for this, materials can be downloaded to a mobile device and used at a convenient time. It presents data in 19 different ways and allows you to monitor the quality and effectiveness of the educational process and use your own educational strategy through complete statistics of the educational process. The platform is intended for online operation only. In addition, iSpring also has a collection of programs designed for creating electronic training manuals. The iSpring Learn platform can be easily provided with course materials by creating the necessary course materials and posting them online through the iSpring Suite editor. In addition, there is a video course with 26 lessons for using the platform. To use the platform, it is not necessary to read the instructions of a separate platform for hours, because it is not so difficult to perform administrative tasks.

Edmodo is an LMS platform that helps organize distance learning through cloud technology. Edmodo was able to create a separate social network for education, because its general interface is reminiscent of Facebook. Using the platform is very convenient for an ordinary teacher, as the interface and principle of operation are simple. In order to access the training courses created on the platform, the learner is given a special code or a unique link, and with it he has the right to attend the course. There will be tests, assignments and questionnaires in the courses.

Features: - Free; -

There are no ads;

- Registration is easy, users are divided into 3 groups: teachers, students, parents.

Disadvantages: - It is necessary to work only with the interface in English; - Formed groups cannot be combined; - Only one form can be created from the tests, there is no possibility to create another interactive way;

Conclusion. During the study, the need to create and effectively use educational tools based on modern information and communication technologies in an era when the scope of the information and educational environment for students in the educational process is expanding, and based on them we can draw the following conclusions:

- based on the analysis carried out, the software environments used to organize educational processes based on cloud technologies are identified, the purpose of the work and the main issues to be solved within its framework are formulated.

- the technology of creating semantic models of e-learning resources was developed, and on its basis the laws of connection between the content of the e-Learning Resource were determined.

- appropriate software for the placement of e-learning resources in a cloud-based technology-based training system will be created.

Today, students' worldviews are changing, and as a result, the activities of universities are also changing. Students and faculty are increasingly using digital learning materials and tools to make their work easier and more efficient. It is also clear that knowledge and skills will not be sufficient without the formation of relevant skills. It is no longer possible to include in the curriculum everything that students need to know within the framework of mandatory courses. The main task of a professor-teacher is to teach students how to learn, manage their knowledge, find, analyze, evaluate and apply knowledge when necessary through various methods. The formation and development of such abilities requires a transition to online learning methods and the use of complex structured learning environments. Taking into account the information presented in the article, the use of modern online platforms in education today is one of the important conditions for improving the quality of education and ensuring functional literacy of students by mastering the professional experience of professors in the field of education.

In order to improve the effectiveness of mastering subjects in the educational system, it was determined that it is necessary to provide students with educational tools aimed at developing independent educational activities. On the basis that the use of cloud technologies, one of the components of modern teaching technologies, takes a leading place in the development of independent educational activities of students.

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