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The Use of Modern Information Technologies in Educational Process

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ABSTRACT

The introduction of any new technology has an impact on our lives, work, study, etc. So are the "cloud" services that provide the highest level of security and confidentiality of data storage, allowing us to save on the purchase of licensed products, resources and programs. The introduction of cloud services into use is relatively slow, but it is changing many areas of our lives. Cloud technologies are especially popular in accounting, when you do not need to install a special platform on your own computer in order to access various accounting programs. Also, with the help of the cloud today you can get all sorts of remote specialist services, so it is not surprising that entrepreneurs and businessmen now can hardly do without these wonderful technologies. The article deals with the issues based on analyzing the efficiency of the using cloud technologies in the educational process.

Keywords: *technology, data storage, cloud services, cloud technologies.*

INTRODUCTION

Information technology in the field of education in the modern world is a necessary condition for the progressive development of society. Teaching technologies occupies one of the main places among the many new directions in the development of education. The relevance of the application of new information technologies in education lies in the fact that they not only perform the functions of tools used to solve individual pedagogical problems, but also provide qualitatively new opportunities for learning, the formation of skills for independent learning activities, stimulate the development of didactics and methods, contribute to the creation of new forms training and education. With the development of computer tools and their introduction into the educational process, its participants have new

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opportunities, new approaches are being implemented. The use of new technologies has become an integral part of the educational process. The federal state educational standard requires a new approach to the methodology of teaching the subject of informatics and ICT. A student-centered approach to learning is becoming the basis for effective and high-quality of education, which requires the use of the latest teaching aids. There is a problem of constructing a lesson with the help of information and communication technologies. Purchase hardware, then install certain software. Each technical unit must be licensed and have a certain package of legal documents. Many educational organizations are not able to buy the latest hardware and software products. Therefore, they find a replacement among cheap programs that do not reveal the huge potential of those whose price is higher. To provide students with a quality education, it is necessary to use web services.

DISCUSSIONS

The active development of the information society and its influence on the educational process has become very noticeable in the last decade, where information and the ability to work with it are the main values. One of the main ways to modernize modern education is its informatization. Informatization is a directed process of system integration of computer tools, information and communication technologies to obtain new system-wide properties that allow more efficient organization of the productive activities of a person, group, society [1]. There was a need to use information and communication technologies (ICT), which will allow to implement the principles of student-centered learning. In the modern lesson, there are two main participants - the teacher and the student. Each of them has their own responsibilities and features in the work. The change in learning conditions led to a transformation of the approach to the study of various subjects and the organization of educational activities. The educational standard of

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the second generation [2] obliges to consider the lesson in the context of information technology. The following requirements are imposed on teachers: to use ICT tools to achieve traditional educational results, which are provided for by the current standards; select and use ready-made electronic learning materials and various web resources in their work; plan the use of ICT tools in the development of lesson plans (the use of traditional teaching methods); organize work in a computer class or in other classrooms with ICT tools; conduct evaluation activities using ICT tools; use ICT tools for current reporting and professional development. In order to provide quality education, a teacher must have a content (selection of educational material, study of various methods of studying the subject), activity (selection of educational technologies, including ICT) and procedural (conditions for achieving pedagogical goals) component.

At the same time, a modern student must have the following skills: to correctly select data from a huge amount of information; interact in the information space with other participants in the educational process (perform tasks, monitor their results, form a portfolio, contact the teacher); observe the rules of information culture and ethics; know the legal side of information borrowing; model and design with specific software; organize individual and group activities; be able to allocate your time wisely [3].

How cloud technologies work will become much clearer if we consider the following example of one of the first ways to use cloud technologies. In the United States, the OnLive cloud service was launched, which makes it possible to play modern games even on the simplest equipment. Technically, it looks like this: the game itself is located on a remote server and the graphics are processed there, which is delivered to the computer of the end user already in a “ready” form. Simply put, those calculations that are performed by a video card and processor during a normal game on a computer are already performed on the server here, and

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our computer is used only as a monitor. Cloud technologies are closely related to the concept of cloud computing, and sometimes they can even be considered synonymous. The essence of cloud technologies is as follows: We may not have any programs on our computer, but only have access to the Internet. · Paid or free, it depends on what we need. You can also store your information in the cloud. The "cloud" in this case refers to a network of interconnected Internet servers, and we may not know where this server is physically located. In cloud computing, there are usually three distinct categories or tiers: The lowest tier is sometimes referred to as infrastructure as a service (IaaS, infrastructure as a service). At this level, users get basic computing resources such as processors and storage devices and use them to build their own operating systems and applications. The next level is Platform as a Service (PaaS, platform as a service). Here, users have the option to install their own applications on the platform provided by the service provider.

The highest level of cloud computing is called Software as a Service (SaaS, software as a service). It is this level that is of greatest interest to educational institutions. At the same time, not only data, but also related applications are stored in the "cloud", and the user only needs a web browser to work. The ideology of "Cloud Computing" is to transfer the organization of computing and data processing to a large extent from personal computers to the servers of the World Wide Web. Cloud computing technology contains a specialized range of data processing and transmission technologies, when computer resources and capacities are provided to the user as Internet services. The user has access to his information, which is permanently stored on Web servers, only as a client during Internet sessions, with the placement of this information (and the results of its processing) on personal computers, laptops, netbooks, smartphones, etc. Currently, there are three categories of "clouds":

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Public (public); 2. Private (private); A public cloud is an IT infrastructure used simultaneously by many companies and services. Users of these clouds do not have the ability to manage and maintain this cloud, all responsibility for these issues rests with the owner of this cloud. Any company and individual user can become a subscriber of the offered services. They offer an easy and affordable way to deploy websites or business systems, with great scalability that other solutions would not provide. Examples: online services Amazon EC2 and Simple Storage Service (S3), Google Apps/Docs, Salesforce.com, Microsoft Office Web. A private cloud is a secure IT infrastructure that is controlled and operated by a single organization.

An organization can manage the private cloud itself or outsource this task to an external contractor. The infrastructure can be located either on the premises of the customer, or at the external operator, or partly at the customer and partly at the operator. The ideal option for a private cloud is a cloud deployed on the territory of the organization, maintained and controlled by its employees. A hybrid cloud is an IT infrastructure that uses the best qualities of a public and private cloud to solve a task.

Thus, Cloud technologies are data processing technologies in which computer resources are provided to an Internet user as an online service. Like any technology, cloud technologies have both their advantages and disadvantages. The main advantages include: Availability - clouds are available to everyone and everywhere where there is the Internet, and from any device where there is a browser. Low cost - reducing the cost of maintaining a virtual infrastructure, paying only for the actual use of resources. Flexibility - unlimited computing resources (memory, processor, disks), virtualization. Reliability - specially equipped data centers have additional power sources, security, professional workers, regular data backup, high bandwidth of the Internet channel, high

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resistance to DDOS attacks. Security - "cloud" services have a fairly high security with proper provision.

A nice feature of the "cloud" model of software platforms is that there is no need for a thorough study of system requirements, buying more and more expensive components and multi-stage installation of the program: you just need to open a browser, go to a certain site and create an account there, following the rules for providing the service. After we do this, you can use the profile from any device (personal computer, laptop, PDA, tablet or smartphone) without worrying about transferring information from one medium to another: it is stored on a server, access to which is enough Internet connection, username and password. There are many public cloud services that allow you to work with office applications, but most of them are paid for by organizations that decide to use them to collaborate with their employees. Microsoft's cloud office service is called Office 365. Its main competitor is Google Docs. There are both free and paid versions of these products. We will consider a service from Google, one of the largest IT corporations in the world. Google's cloud service is called Google Drive. It includes document creation capabilities (Google Docs) and cloud storage (Gmail email, Google Translate auto-translator, Google Maps mapping service, Google Talk messenger). Google Drive lets you store files online and on your hard drive, and access them from anywhere, even on the go. Changes made to a file on the web, computer, or mobile phones are reflected on all devices that have Google Drive installed.

The number of services offered by Google is staggering. And while many apps can interact directly with your data held by Google, the company's services are always designed for easy web-based access. This became apparent with the creation of Chrome, a browser that prevents other companies from interfering with people's access to Google services. In essence, Google has taken its web-based

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concept of the cloud even further with its Chrome OS, and the upcoming Chromebooks running without local apps are its custodians. In reality, the operating system is nothing more than just a browser. Apple's approach to its iCloud is different. At Apple, everything revolves around applications, in other words, Apple's approach to the clouds is application-centered. When it comes to syncing your basic personal data, a wide variety of apps come into play, which can be iOS apps like Contacts, Calendar, Camera, iTunes, iBooks, App Store, Mac apps like Address Book, iCal, iPhoto and iTunes, or Windows apps like Outlook, Photos, or again iTunes. And while syncing basic information like contacts or a calendar isn't very different from Google's approach, working with documents and data brings out the real difference between Apple's approach and Google's.

The iCloud document syncing capabilities are not geared towards using public sources like the Web. Instead, Apple provides developers with a set of APIs that they can embed into their apps. Result: Documents and other data that were created in an application are mostly tied to that application. On the other hand, this approach gives you much more control over your document. Because Since the file is mostly tied to the application in which it was created, you have a much larger set of tools for editing it, no matter where you access it from. Apple's iWork apps are a good example of this. In them, formatting, image arrangement, slide transitions and table functions will be transferred from one device to another. The result will look, play, calculate and print the same everywhere. We don't have to worry about the fact that when you move from Office to the Web, to the mobile app and back, your formatting will move out. This allows us to apply a lot of specific features of specific applications everywhere. The fact that Apple is providing all its app developers with iCloud storage and sync APIs should bring impressive editing experience from iPhone to iPad, Mac or PC and back (assuming the app of choice has Mac/Windows versions). It also allows seamless access to data and documents.

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CONCLUSIONS

The rapid spread of cloud technologies sets us the task of integrating cloud services into the system of an educational institution. Cloud computing has broad application prospects in the field of education, scientific research and applied development, as well as for distance learning. Thus, during the period of transition to new educational standards, cloud technologies help to form a new information culture for teachers and students, and provide a unique opportunity to combine project methodology and information and communication technologies.

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