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CLOUD TECHNOLOGIES IN ART EDUCATION

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ABSTRACT
The possibilities of using cloud technologies in ART education, as well as possible difficulties in implementation, are considered. The main examples of modern services built on the basis of cloud computing technologies for ART education.
KEYWORDS: *cloud technologies, cloud services, computer technologies*

Today it is difficult to imagine our life without such electronic devices as a computer, laptop, tablet or cell phone. These devices have changed the lives of millions of people on the planet, greatly simplifying it.

Over the past 20 years, computer technology has made a huge breakthrough in its development. But few of us, ordinary users of personal computers and the Internet, know about the existence of cloud technologies that can already make our life even easier and help us forget about some problems.

At the beginning of the 21st century, the development of a technological concept began to provide users with remote access to data storages, applications and services. This technology is called "cloud computing". Relatively recently, the use of these technologies in education has begun. And this concept is gradually entering the educational sphere.

The new format of education is in demand, firstly, because it allows for a high level of accessibility of education, and secondly, it improves its quality. However, we are not talking about a complete transition to e-learning. It is much more efficient and productive to use blended learning. The use of cloud technologies in education will allow science to overcome all existing barriers: geographical, technological, social.

Cloud computing is a new service that involves the remote use of data processing and storage facilities. With the help of "cloud" services, you can access information resources of any level and any capacity using only an Internet connection and a Web browser.

Today, "cloud" technologies are actively used in all developed countries, providing fundamentally new, cost-effective opportunities for business, management, education and research.

In this regard, the issues of studying cloud technologies are now of particular importance.

Cloud technologies are not the Internet itself, but a set of hardware and software that processes and executes client requests. "Cloud services are a way to access information resources of any level and any capacity using only an Internet connection and a web browser."

The issue of the possibilities of cloud technologies in e-learning is not yet well developed, so this topic should be given attention.

There are currently four deployment models for cloud systems. These include:

- Private cloud. Used by only one organization, but with several divisions. May be the property of both the organization itself and a third party;

- Public cloud. For the general public. May be owned by commercial, scientific and

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government organizations;

- Hybrid cloud. A combination of several different cloud infrastructures (private and public) that are unique entities but interconnected;

- Public cloud. Designed for use by a specific community of consumers from organizations with common goals.

Consider the basic models for building a cloud and analyze to identify the possibilities of using them in the educational process:

- Software as a Service (SaaS) - "Software as a Service", a model for providing cloud services, when the provider offers for use its applications that are launched in the cloud infrastructure, available to the client using a web interface or program interface.

- Platform as a Service (PaaS) - "platform as a service". The user is given access to use the software platform: operating systems (OS), DBMS, application software, software development and testing tools.

- Infrastructure as a Service (IaaS) - "infrastructure as a service", a model for providing cloud services, in which the user gets the opportunity to manage processing and storage facilities, as well as other fundamental computing resources.

Based on the analysis of all cloud models and research on the experience of using them in foreign countries, we can say that the most commonly used cloud model in educational institutions is "Software as a Service" (SaaS). The advantages of using this model: its use does not require the educational institution to create its own data center and its maintenance, it makes it possible to reduce financial and organizational costs, and also to install their applications on the provider's platform.

Following e-learning, the development of Internet simulators, cloud technologies began to develop in education. This is one of the most promising innovations in the education system in recent times. Cloud technologies significantly reduce the cost of information infrastructure, and also, in order to improve the quality of education, allow creating and distributing additional services.

The introduction of cloud technologies in the learning process is one of the most promising innovations in the education system today. Due to them, the costs of information infrastructure are significantly reduced, additional services are distributed and used in the educational environment to improve the quality of education. In addition, cloud services in the development of individual learning methods are an extremely effective tool, and this allows you to make the learning process more productive and interesting.

Cloud services are applications that are accessed by the Internet using a browser or other network applications. Unlike the usual method of working with software, the user does not take the resources of his computer or server of his local network, but the power that is provided to him as an Internet service.

At the same time, the user is provided with unlimited access to his data and the ability to work with them from a convenient device and from anywhere, and at the same time, the user does not control the operating system, software base and other processes through which this work takes place. Data and applications are stored in the "cloud", and the user retains the minimum required functionality.

All software updates, virus checks, and other maintenance are performed by the cloud service provider. This means that managing documents, editing them becomes easier than when they are placed on the user's computer.

Cloud technologies provide resources as an online service: there is no need for a flash card, since the information is stored in the cloud storage, no additional software is required to be installed

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on your PC. The main function of cloud technologies is to meet the needs of users who need remote data processing. Therefore, in e-learning, the main essence of which is the ability to study at a distance, cloud technologies are presented as a tool to improve the quality of education and greater student mobility.

At the moment, there are several services that allow not only reading, but also editing documents online, including:

- Google Drive (Docs) (https://drive.google.com);
- Zoho (http://zoho.com/);
- ThinkFree (http://www.thinkfree.com/);
- Feng Office (http://www.fengoffice.com/).

Among them, Google Docs was perhaps the most developed and potentially the most widespread resource - it can be used by anyone with a Gmail account. After joining the Google Drive service, it has a unique and fundamental advantage over all its competitors - the ability to cloud store and synchronize data, even those created by third-party applications that were not part of Google Docs. Table 1 shows that Google Drive surpasses even MS Office in a number of attractive properties.

When choosing a form for presenting material on the topic “Google Docs Office Suite”, one of its main features must be taken into account: orientation towards working on the Web. Google Drive does not have a document application that can be installed on a computer and used when there is no internet connection.

Today, any computer usually has at least a text editor installed, as a maximum - a complete office suite, be it Microsoft Office, Open Office or another editor. If we talk about students, they are trained to work with the main office applications - MS Word, MS Excel, MS PowerPoint or, in connection with the transition to open source software, their counterparts from the Open Office suite. By the time you start getting acquainted with the Google Docs course, the student is already usually familiar with one or more office suites and does not need a full course of training in working with applications of this kind, getting to know their interface, purpose, etc.

Thus, the course can be limited to familiarity with the features of the Google Docs package, its capabilities and limitations. Therefore, when developing a course, it is advisable to use the format of electronic learning materials. On the other hand, this makes it possible to focus on presenting new theoretical material and demonstrating the features of the office suite.

On the basis of the functionality offered by the Google Drive service, we determine the range of possibilities that require consideration in the laboratory workshop. All selected materials are divided into five sections, for each of which questions on knowledge of theory and practical tasks are prepared.

Note that cloud technologies expand the capabilities of the teacher:

- No licensed software required;
- An effective tool for the development of individual teaching methods;
- You can work not only directly in the classroom, but also at any point where there is Internet access;
- One document can be edited by several people at the same time (organization of group projects, remote work).

It makes up the cloud version of Mocrosoft Office (Outlook, Word, Excel, Power Point, OneNote Web Apps) and collaboration tools (Lync Online, SharePoint Online, and Exchange Online).

Using cloud technologies in education, students are not required to be physically present at

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the place where they receive their education. Such technologies are a great advantage in the constant deadlines of modern life.

There is no need for expensive gadgets, complex software and special skills to work with them. Teachers from other countries have already joined the innovations and appreciated its unique advantages. In a blog post on GETideas.org, an Indiana State University faculty member wrote: "Now you can study anywhere, indoors or outdoors. The teacher at the blackboard is not required. In order to start learning, you just need to have access to the Internet. South Korea has already launched a program to replace paper textbooks with electronic ones. They will be available thanks to a special cloud infrastructure from any convenient learning device with Internet access.

This technology allows students to use educational materials of any kind, as well as work together with teachers or a group. Thus, cloud technologies provide ample opportunities in e-learning, for example, for learning foreign languages under the guidance of teachers who are native speakers. Also, with the help of this technology, you can get advice from a specialist in any field of knowledge, which is located in another part of the country. The use of an integrated educational cloud environment opens up new perspectives for society.

An example of preparing a group project for distance learning. Students are divided into groups and receive topics for their projects. The teacher prepares the necessary documents for each individual group and, using e-mail, opens access for all group members. You can create any document, be it a text file, spreadsheet, presentation, or booklet. Yandex service developers believe that cloud technologies should provide the following scheme of action: after starting work on their laptop, a person can continue writing it when they leave home, on their phone on the road, and send it from a tablet. Approximately according to the same scheme, students can work on their project at home, at the university, and in some other place. The teacher has the opportunity to comment on the documents to correct them by the students. At the same time, it is also possible to determine what contribution each of the students made to the work.

In addition to working with students, the teacher can actively use cloud technologies for himself. An example is the creation of a schedule of training sessions, consultations, an indication of the deadlines for the delivery of projects, abstracts, informing students about the postponement or cancellation of classes.

Having studied the examples of the use of cloud computing, we can say that most often educational organizations use the cloud model as "software as a service". In this case, the educational institution avoids the economic and organizational costs of creating its own server and its maintenance, it becomes possible to install its own applications on the platform provided by the service provider.

Let's highlight the positive aspects of using cloud technologies in the educational process:

- Economic. Since the educational process is organized in a virtual space, there is no need to occupy a room, a classroom;

- Technical. To carry out activities, only access to the Internet is required;

- Technological. Most cloud services are easy to use and require little to no training or minimal support;

- Didactic. The provided online tools ensure safe interaction between teachers and students.

It should be noted the inconvenience of using cloud technologies in education, which do not affect didactic opportunities and benefits. This is the absence of domestic providers of cloud services, the legislative framework for the use of cloud technologies. However, there are still Russified services, these are Box.net, Dropbox, Google Drive, Evernote and 4shared. They provide the ability to

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upload and share documents, create and organize folders with documents, download files, create notes and thematic notebooks, conduct surveys, create diagrams and diagrams, automatically back up all files on the Internet, manage sharing, and it also provides the opportunity to use multiple resources for teachers, students and administration.

The dynamics of information technology stimulates the development of distance learning systems, which are characterized by a high level of interactivity and allow people to participate in the learning process at any convenient time, located in different countries and having access to the Internet in a human-friendly rhythm of cognitive activity .

Like all actively developing technologies, cloud technologies penetrate into all spheres of human life. In different areas, their implementation occurs at different speeds. Distance learning systems (DLS) do not yet actively use their potential.

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