

# Use of Cloud Technologies in the Continuing Education System to Improve the Professional-Pedagogical Training of Teachers

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## Abstract:

This article reveals the content of using information technologies in modern education. The requirements for the use of information technologies, including cloud technologies, are also mentioned. Providing the educational process with information technologies will consist of legal, information-statistical, educational-organizational, scientific-pedagogical, educational-methodical resources. The information-methodological support created on the basis of modern information and communication technologies creates a basis for improving the quality of information exchange in educational, teaching-methodical, scientific-research and management processes. Modern information technologies, especially mega cloud technology, serve to inform and automate the educational process.

**Keywords:** Cloud technologies, Microsoft Outlook, Cloud technology, IBM, Dropbox, Google Dosc, Celes Force, Google, Ziyonet.

**Introduction.** It is known that the development and future of our country depends on achieving high efficiency in the field of education, their compatibility with the requirements of world education and to what extent they find their place in practical life. In the formation of the national information system, in the mass introduction of modern information technologies, computer equipment and telecommunications in all spheres of economy and social life, and "Information and communication technologies and systems" science is of great importance in using them, more fully meeting the growing information needs of citizens, entering the world information community and expanding the enjoyment of world information resources. Information and communication technologies (ICT) are all part of human society entering the fields. Modern information in solving management issues role of technology is extremely important.

**Methods.** Organizing and using information-methodical support of the educational process was taken as a research object. It is possible to include regulatory-legal, informational-statistical, educational-organizational, as well as scientific-pedagogical, educational-methodical information resources into the information-methodical support of the educational process. Observation, description, and analysis methods were used in the research.

**Results and Discussion.** As we all know, the 21st century is called the age of globalization, the age of technology. Today, science and technology are developing rapidly, which requires teaching using new technologies. The young people who are our future and pride are highly cultured, It is an urgent issue that every pedagogue employee, knowing that he is a responsible person, increases the efficiency of the lesson and makes effective use of new technologies in educating adults

In 1962 academician Axel Ivanovich Berg conducted scientific research on the automation of the educational system, the creation and use of pedagogical software tools, starting to study the technical means of education and programmed education with the help of computers.

Also, in the research works of scientists A.Hayitov and B.Mo'minov, methodical recommendations on the role of the computer in practical and laboratory training and the creation and use of pedagogical software tools were developed . In their opinion , they believe that it is appropriate to assign the formed tasks and actions , which consist of managing, teaching and checking the student at all stages of training, to pedagogical software tools . In this approach, the computer plays the role of a low-skilled "electronic teacher", such "electronic assistants" of the teacher are as many as there are computers in the classroom. "Electronic Teacher" each of them works in the management of the pedagogical software tool and strengthens special knowledge for students, forms and applies new concepts and means of action [2].

Pedagogical technical and software tools greatly facilitate the work scope of future informatics teachers and leave more time for individual creative communication with students, as well as speed up and increase the effectiveness of practical lessons. Of our republic I.A.Karimov, the first president, said: "The main goal of such reforms is to educate qualified specialists who are knowledgeable and spiritually mature , possess modern techniques and technologies and can manage. Implementation of deep reforms, transition to the market economy will depend primarily on the potential of personnel, their professional training .

New economic conditions have arisen in our Republic, which is on the path of independent development, which requires the implementation of a number of reforms in all spheres of the national economy, especially in the education system. Today, the rapid development of science and technology, the widespread use of computer technology, the ever-increasing scope of knowledge that should be given to students, it is precisely the fundamental improvement of education, which is suitable for national and local conditions and qualified It requires the development of programs and textbooks that enable the training of specialists, modern methods of education.

As I.A.Karimov, the First Head of the Republic of Uzbekistan, noted: "In general, the main requirements for future teachers can be defined as: professional knowledge, intellectual and spiritual maturity." It is the need of the hour for students to be able to apply their knowledge of computer science in their profession, in everyday life, to expand their knowledge and thinking.<sup>1</sup>

Today's education is improved in every way, it is organized based on the requirements of the time and it raises issues such as high efficiency. The quality and effectiveness of education is determined

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<sup>1</sup>Instructional manual for the use of interactive methods in the teaching of computer science. The date is 26.11.2020. <https://fayllar.org/barchamizga-malumki-xxi-asri-globallasev-davri-tekhnika-asri-de.html?page=2>

only by trained personnel. Based on this, it is appropriate to approach the training of personnel based on modern requirements.<sup>2</sup>

At this point, it should be noted that a modern teacher must work in constantly changing conditions, which in turn requires improvement of his professional qualities. The continuous development of pedagogical theories and methods, the development of new teaching and training technologies and their introduction into pedagogical practice indicate the need for additional training of modern teachers in the field of educational technologies.

Today, it is no exaggeration to say that our educational system lags behind the progress of science and technology. The main reasons for this global problem are that the development of information and communication technologies is ahead of the level of education of specialists, that is, teachers in the field of information technologies. The educational system does not have time to reconstruct its content and methodology in accordance with the rapid pace of scientific and technical progress and the changing nature of human activity.

That being the case, it is necessary to constantly update the knowledge and skills of pedagogical staff and create conditions for improving the entire educational system. Also, the introduction of innovative technologies into the educational process allows to increase the qualification, responsibility of personnel, readiness to learn new approaches to professional activity in order to provide students with modern knowledge. Modernization of the educational system requires changes in the educational activities of students.

Issues related to the methodology of organizing educational activities are considered in psychological and pedagogical literature. In this regard, Russian scientists Yu.K. Babansky, NV Kuzmin, AA Kuznetsov, MP Lapchik, IV Robert, VA Slastenin, TI Shamova, GI Shukina, DB Elkonin and other scientists studied the methods and forms of organization of educational and cognitive activity in the educational structure, its control and they learned methods of evaluation, motivation for learning, methods and methods of increasing the effectiveness of educational activities.

For information, the word "cognitive" is derived from the English (Latin) word "cognize", which means to know, understand, understand and think, or "cognition" - to know, to understand. On the other hand, cognitive activity is a phenomenon related to a person's direct perception and feeling of reality.

By educational activity, we mean targeted educational activity that activates the interaction of students with the environment in which the processes of education, upbringing, development and knowledge are carried out. Also, educational activities help to improve the personality, deepen knowledge in theoretical and practical activities.

In this dissertation, the main focus is on the possibilities of using cloud technologies in training future computer science teachers. The use of the opportunities of cloud technologies increases the quality of education, the level of mastery of the material, makes the educational process continuous and systematic. The virtual space based on cloud technologies allows for the development and support of educational information resources, as well as conducting scientific work and methodological research, and connecting with other educational institutions.

The use of network services based on cloud technologies provides the necessary conditions for the successful implementation of a number of tasks aimed at increasing the quality of education and the level of personnel training, in particular: the openness and accessibility of information bases and knowledge, financial and material savings through resources, network resources includes

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<sup>2</sup>Tools and methods of forming professional competence of future informatics and information technology teachers. Ergashev B. Saidov J. Islikov S. 2nd edition of 2021. <https://cyberleninka.ru/article/n/bolajak-informatika-va-tools-and-methods-of-forming-the-professional-competence-of-information-technology-teachers>.

continuous development of the educational process, systematic control over teaching and a number of other tasks.

The organization of the educational process using network services based on cloud technologies is carried out interactively, through the interaction of teachers and students, and also helps students to interact more effectively with each other. With such training, systematic and effective cooperation is ensured online on the basis of information technologies and telecommunications.

In the virtual educational environment based on cloud technologies, all the components of the educational process, that is, educational materials, teaching methods and organizational forms, are taken into account and fully implemented.

A virtual learning environment is a social tool created for individual learning, development, communication and solving intellectual tasks. Cloud technologies in this environment are the main means of cognitive activity and cognitive activity of the individual.

Here, let's talk about Google Drive cloud storage.

Google Drive is a cloud hosting where files can be stored. The service has been provided by Google since April 24, 2012. In 2014, the number of monthly active visitors of the service reached 240 million. Main functions: saving files on the Internet, editing and copying them. Google Drive includes files in various formats created in Google Docs, Sheets, Presentations, and other office programs. The service offers 15 GB of free space. Active users will be able to purchase more space for additional money.

Over the years, Dropbox has languished largely due to the launch of new cloud storage platforms by the big players in the industry. Google, Microsoft, Apple, Mega are the companies that provide us with this type of services, most of them provide services at almost the same prices. But **what is Google Drive itself?**

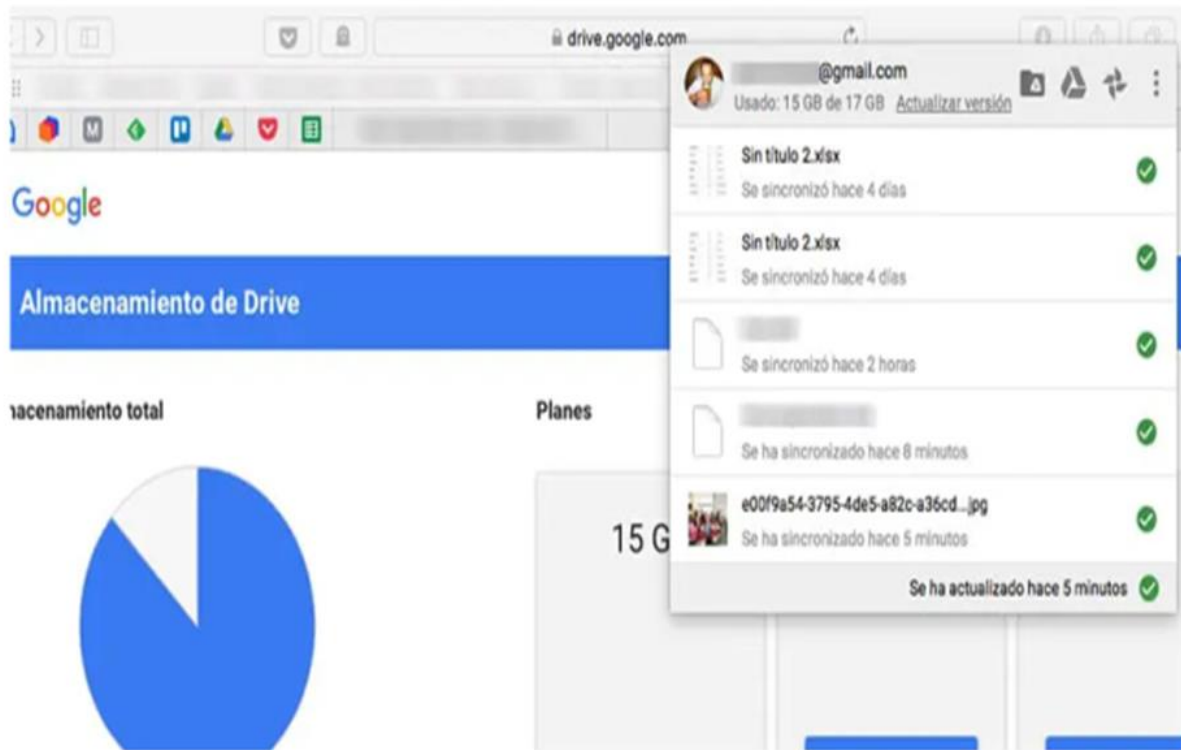


**Figure 1**

**Google Drive was first introduced to the world in 2012**, and since then, both the storage space and the number of functions it offers have increased, making it one of the best alternatives available in the market today. Like Google Photos, Google Drive is **Google is a cloud storage service**. If you are a Gmail user, Google automatically provides you with 15 GB of free space in Google Drive, so if you have a Gmail account, you do not need to sign up for this service. Google Drive is available for all platforms on the market, desktop or mobile, so accessing our data in the cloud will never be a problem. Google Drive, like most cloud storage services, allows us to carry all the documents we have on our smartphones. In addition, Google Drive provides a number of programs for us to create

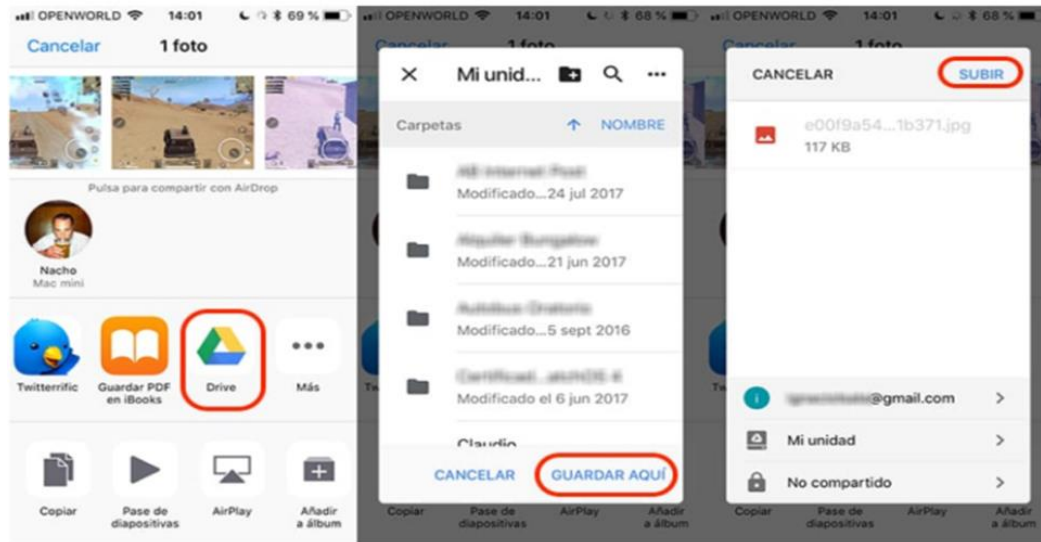
text documents, spreadsheets and presentations, although the format it uses is not compatible with other programs such as Microsoft Office and Apple iWork, which is not always good, for creating documents of this type. The idea of using programs is that we need to format them properly before serving them. Another advantage that Google Drive offers us is **the availability of the collaboration function.** It allows multiple users to work on the same document, which is an ideal feature for users who are usually away from the office and working remotely.

How to use Google Drive. If we have a Gmail account, we have at our disposal 15 GB of storage space on Google Drive, completely free, which is shared with Google Photos and is free for all Gmail users. To access cloud storage services, go to Google.com and click on the My Drive command. If you have previously saved some type of content, it will be displayed in this folder. Otherwise, no file will be displayed. In the left column we can see both. The area occupied by the S trace is still empty.



**Figure 2**

To start uploading documents to our cloud, we have several methods. The first way is through the program that Google provides us for computers. When installing this program, it asks us which directories we want to sync in the cloud. The second method is to drag the folders or documents we want to save directly to the browser with the Google Drive tab.



**Figure 3**

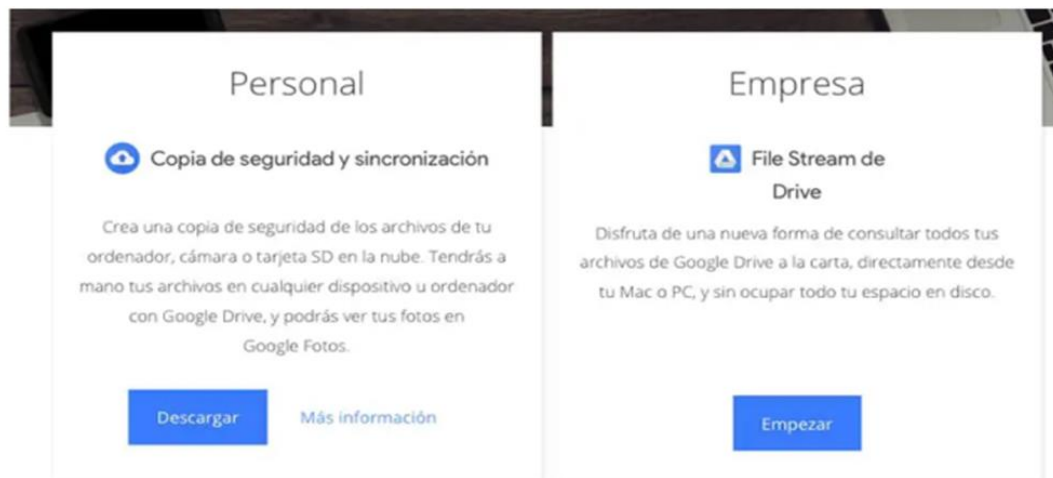
If we want, upload the file to our Google storage service. We must have installed the application first through our smartphone or computer. Next, we must choose which file G' s, image G' s or video G' s we want to upload and click "Share ", then select Google Drive and then the folder where we want to save it .



**Figure 4**

Over the years, the number of functions that Google has integrated into Google Drive has increased, until now we offer a large number of them, and among them we can highlight the following:

- Creating text documents.
- Create spreadsheets.
- Create presentations.
- Creating forms for conducting surveys.
- Create diagrams and blocks to add later to later documents.
- Document scanning.
- Integration with Google Photos.
- Saves any type of file, regardless of format. Can recognize objects in scanned images and texts.
- Google Drive also allows us to share files with other people, where we can set different permissions, from reading and editing files.



**Figure 5**

As mentioned above, Google Drive has different features offered by the mobile and desktop apps available on all mobile and desktop platforms. If the program for mobile devices allows us to look at our work, our documents, access and edit them, the desktop version is always what we need to synchronize the files that we want to have with us at all times.

So how much do Google Drive services cost?



**Figure 6**

All Gmail users get 15 GB of free space to use as you like, share with Google Photos and remove all the pictures and videos we create with our smartphone when we upload them in their original size. In addition, Google Photos allows us to store all photos and videos for free without taking up storage space, provided that we accept them with a slight reduction in quality. Currently, Google Drive allows us, in addition to the free 15 GB, **three more storage options at different prices and adapt to all the needs of both private users and companies.**

- ✓ 100 GB per month (for €1.99)
- ✓ 1 TB per month (for €9.99)
- ✓ 10 TB per month (for €99.99)

**Can vary**, as does storage, so the best way to find out is to check the current Google Drive prices directly on their website. It should be mentioned that when using information and communication technologies and cloud technologies in education, future computer science teachers will have the opportunity to make the educational space open. Also, the memory of information communication technologies is not full and they achieve several times speed and convenience in information exchange. In the educational process, there are certain conditions for organizing classes in interactive ways using information communication technologies. Therefore, it is one of the most urgent tasks to create the theoretical and practical foundations of pedagogical skills, as well as the

process of their formation, based on the modern achievements of the effective use of information communication and educational technologies and in accordance with the requirements of the time.

**Conclusion.** Today, it is necessary to adapt the educational system to the digital generation by mass and effective use of innovative educational technologies and didactic models based on information and communication technologies, especially cloud technologies. At the same time, it is necessary to actively use a research-based approach in the educational process, and with this, it will be possible to develop the knowledge and skills of future computer science teachers for scientific research, and to further develop their creative abilities and creative thinking based on IT competence.

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