

**METHODS OF EFFECTIVE USE OF INFORMATION AND COMMUNICATION
TECHNOLOGIES IN DISTANCE EDUCATION**

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Abstract

This article examines the role of information technologies in education, the quality of lessons and increasing the interest of young people in the field of IT through the use of information technologies in the classroom, as well as the advantages of multimedia tools in education. Also, the importance of modern methods of using information and communication technology tools in the educational process and the advantages of online distance learning are covered in detail. The convenience of achieving the integration of science and production in the educational system for the development of the modern "Electronic Education" field is described. It is explained about the development of the learner's communicative and social skills, the provision of opportunities for individualization and differentiation of open and distance education at the expense of individual education of each person with the help of computer tools and information electronic educational resources.

Key words

Information, communication technologies, technology, audio signal, video signal, multimedia, individual, motivation, computer, informatics, internet, distance learning, e-textbook, online education.

Today, online education is one of the newest forms of distance education in the educational system and has been used for the past ten years. This type of education is called e-learning and it is done over the Internet. Online education, with the majority of learners receiving their education, has led to pedagogical changes in the way teachers teach and the way students learn. In this educational method, HEI staff and teachers lead, learners learn actively rather than passively. At the modern world level of development of information and communication technologies, the creation of a national system compatible with the integration of the infrastructures of the information space and the national information and computing network is a factor of the national economy, management, science and education efficiency. These problems are very complex and at the same time a pressing issue for our Republic. The results of the implementation of economic, structural and other changes that are currently being

carried out depend on how and in what time frame the problems related to informatization are solved in the Republic. The creation of electronic educational tools for each subject further improves the possibility of using modern information and communication technologies in the teaching of subjects. The main factor of students' in-depth acquisition of knowledge in these subjects increases the quality of education. To further accelerate the wide application of modern pedagogical and information technologies in the educational process, to arm professors with advanced pedagogical knowledge and pedagogical technologies, to improve their skills, to study in depth the experience of foreign higher education institutions and their effective methods makes it possible to introduce it into our educational system.

In the current era of globalization, the emergence of remote, online or offline learning opportunities through the Internet provides a wide range of opportunities for learners and educators. Nowadays, there are many online e-learning platforms that provide e-learning around the world. The best thing about e-learning is that if the learner can't attend the class for some reason or can't master the class well, he can access the platform and use the video lectures again and again. This increases the effectiveness of education.

Scientific research on the use of modern information and communication technologies is being carried out in the educational system of developed countries, and implementation work is being intensively carried out. It is necessary to pay attention to the integration of science and production in the educational system, to introduce electronic learning technologies into the educational process, to support distance education. There are two prerequisites for the use of information and communication technologies in the process of distance education:

- provision of technical equipment;
- availability of special software.

In recent years, in developed countries, education through the Internet has been developing rapidly, and it came under the term "Electronic education" (e-Learning). There are many systems for organizing e-learning. Examples of these are authoring software products (Authoring tools), virtual learning management systems - LMS (Learning Management Systems), internal content management systems - CMS (Content Management Systems).

LMS - are systems designed to organize and manage learning activities. Through them, a communication mode is established between students and the teacher, and a set of educational materials, video lessons, lecture materials, presentations, e-books and manuals are transmitted and received.

Distance education – is an educational complex that provides educational services to all strata of the population and foreign learners with the help of a special information environment, based on the means of exchanging educational information at a distance.

Distance learning – it is an educational system based on new information technologies, telecommunication technologies and technical means. It is a system that requires the learner to work more independently, providing learning conditions and communication with the teacher based on certain standards and educational laws. In this case, the learning process does not depend on the time and place of the student.

Video and audio conferences – it is a way of learning that connects two distant audiences using the Internet and other telecommunication communication channels. Video and audio conferences will require a large amount of special equipment, a high-speed communication channel, and the involvement of service professionals to organize training.

Education by e-mail – it is a way of learning by establishing communication between the teacher and the learner through letters using Internet e-mail services. Information can be exchanged by sending and receiving all kinds of test, assignment, question-and-answer messages, as well as textbooks and study guide files (in the form of text, graphics, multimedia, programs, etc.) using e-mail.

Electronic textbooks and educational programs – are mainly considered educational resources covering theoretical and practical knowledge and are developed for online and offline use by students through computer programs. Simulators and electronic textbooks are now widely used in education.

Internet distance education portals – it is a way to use the large amount of information available on many sites on the Internet and to acquire new knowledge. The main task of these sites is to organize the educational process, to establish an electronic online communication between the teacher and the learner, to place educational materials for teachers and to work with this information for students, and other remote education. is to create an opportunity to use lim services.

Distance learning methodical materials are:

- textbook;
- audio and video textbooks;
- online classes (web page);
- electronic libraries;
- tests;
- multimedia tools;
- electronic textbooks.

Information - by radio and television broadcasts, books, newspapers, databases, library information, knowledge obtained through communication with people and scientific journals. As a simple example of information technology, we can take social networks as an example. Because today, people of our society spend more time on social networks than on television or radio. Especially during the pandemic. If we pay close attention, the pandemic era helped people to get acquainted with new, modern and profitable professions and to take them. For example: bloggers, graphic and interior

designers, social networks (SMM) designers and marketers have increased. If you are the owner of one of these professions, you can work all over the world, sitting at home, the main thing is honest and profitable. Have you ever thought that there are few, if not non-existent, fantastic and blockbuster movies in Uzbekistan. As you know, many fantastic films of the Marvel film studio are created using special effects programs. Therefore, we need graphic designers and professionals who are well-versed in 3D effects programs to produce such films.

Multimedia - is a developing modern information technology. Its distinguishing features include: it integrates different types of information: traditional (text, tables, decorations, etc.), original (speech, music, clips from video films, TV frames, animation, etc.) in one software product. Such integration is different devices for recording and displaying information, work at a specific time, unlike text and graphics, which are static by their nature, audio and video signals are viewed only at a certain time interval. will be released. The speed of the central processor for processing and displaying video and audio information on the computer, the bandwidth of the data transmission bus, the operating and video memory, large-capacity external memory, the size and the speed of exchange of computer input-output channels by approximately two times needs to be increased, a new level of "human-computer" interactive communication, in which the user receives more extensive and comprehensive information during the communication process, which makes it possible to improve the conditions of education, work or recreation. Education of students and retraining of personnel on the basis of multimedia tools is an urgent issue of today. The concept of multimedia entered our lives in the early 90s. In our opinion, multimedia is an embodied form of delivering educational materials to students based on audio, video text, graphic and animation effects based on the software and technical tools of informatics. The method of teaching in developed countries is currently being applied in the field of education. Even every family cannot have fun without multimedia devices. The gross turnover of multimedia tools in 1981 was 4 billion US dollars, and in 1994 it was 16 billion US dollars. Nowadays, it is impossible to imagine every computer sold without multimedia tools. Attempts to widely use computers in the field of education in the 70s were lost, first of all, due to their extremely low productivity. Practice shows that teaching students on the basis of multimedia tools is doubly effective and saves time.

Although the idea of using computers in the educational system appeared much earlier, the use of information technology in all areas of the educational system became more complete after the advent of computers equipped with multimedia devices. was put into practice. The use of multimedia tools in education provides the following opportunities:

- ensuring the humanization of education;
- increase the efficiency of the educational process; development of the learner's personal qualities (assimilation, thirst for knowledge, independent education, self-

education, self-improvement, creative abilities, ability to apply acquired knowledge in practice, interest in learning, attitude to work);

- development of the learner's communicative and social skills; with the help of computer tools and information electronic educational resources, the possibilities of individualization and differentiation of open and distance education will be significantly expanded due to the separate (individual) education of each person;

- looking at the learner as an active learning subject, recognizing his value;
- taking into account the personal experience and individual characteristics of the learner;

- conducting independent educational activities, in which the learner studies and develops independently;

- formation of skills in the use of modern educational technologies that help students to adapt to the current rapidly changing social conditions in order to successfully perform their professional tasks. The process of self-directed education with the help of multimedia tools requires the development and use of modern, multi-disciplinary, subject-oriented multimedia educational tools. They include a wide database, educational knowledge base, artificial intelligence systems, expert-teaching systems, laboratory practices with the possibility of creating a mathematical model of the studied process and phenomena. According to the possibilities of taking into account the individual characteristics of learners and helping to increase their interest (motivation), as well as the combination of various types of multimedia educational information, interactivity, and flexibility qualities, multimedia is useful and productive education. multimedia technology. Providing interactivity is one of the important achievements of digital multimedia compared to other means of presenting information.

As with the use of textbooks, in the use of multimedia tools, the educational strategy is enriched with content only when the teacher is engaged not only in providing information, but also in helping, supporting and guiding the learning process. Usually, presentations enriched with beautiful images or animations are more attractive than plain text and can complement the material being presented and provide the necessary emotional level. Multimedia tools can be used in harmony with different educational directions (styles) and can be used by people with different mental and age characteristics of learning and receiving knowledge: some learners directly and some like to learn and acquire knowledge by hearing and others by watching (video films). Interactive multimedia technologies provide non-traditional comfort to the learner with academic needs. In particular, it ensures the growth of phonological skills and reading skills of students with hearing impairment, as well as their visual acquisition of information. For those with speech and physical disabilities, it allows them to use the tools based on their individual needs. Multimedia tools are an effective and promising tool (instrument) of education, which provides the teacher with a large-scale array of information, rather than a traditional source of information; using not only text,

graphics, schemes, but also sound, animations, video, etc. in a visual and harmonious manner; creates an opportunity to select types of information in a sequence in accordance with the level of reception (perception) and logical learning of learners.

Distance education is considered one of the forms of continuous education system and is aimed at realizing the right of a person to obtain knowledge and use information. For a person who wants to receive distance education, it allows him to get basic or additional education along with his professional activity.

The advantage of distance learning is that the learner can study at his convenience and even without leaving work. It is because of these advantages that this method is widely used in the world today. Many large enterprises save millions of dollars a year by using this method to improve or change their professional skills.

Another advantage of distance education is that the student himself determines the duration of the study, that is, the student starts studying at the time of his/her choice, learns the materials under the supervision of the teacher. Mastering is determined by completing assignments and tests. The faster the student learns the given program, the faster he will finish his studies and get a certificate. If he does not master the program, he will be given the opportunity to work independently and continue his studies.

In distance education, working people, mothers, and students usually study in order to acquire a specialty or improve their qualifications. This style is very convenient for people with disabilities.

The audience of distance learners can be made up of people belonging to the following social groups:

- those who want to get a second specialty, retraining, advanced training or additional information;
- heads of regional authorities and management;
- young people who are unable to receive information due to the limitations of the traditional education system (due to the Covid-2019 pandemic, during the period of quarantine restrictions announced throughout our republic, online lesson processes were organized via television);
- employees of companies and enterprises who want to raise their information status to the level of modern requirements;
- listeners who want to receive second parallel information;
- residents of underdeveloped regions far from the center;
- persons with limited freedom of movement;
- persons with physical disabilities.

Advantages and disadvantages of online education

The positive side

- getting education without separating from the main activity;
- the learner in his free time at home

- or can receive training at the workplace;
- individual approach to each learner;
- resource materials: audio, video
- the ability to work independently using materials;
- receiving advice from advisers on the difficulties faced by the learner by phone, letter or e-mail;
- organization of training-seminars, conferences, audio, video conferences, etc.

The negative side

- learner and provider of education
- lack of face-to-face communication;
- resource materials from the learner
- requires diligence and consistency in working independently;
- the learner must have computer equipment;
- requires the learner to be able to connect to the Internet;
- the network education environment should have a well-developed structure and provide students with the opportunity to communicate quickly;
- the learner must have the ability to communicate in writing.

Online education has emerged as a safe and viable option for continuing education as the COVID-19 pandemic has upended the personal and professional world. For the development of online education, according to the data of 2019, the USA, India, China, South Korea and the UK are the countries that have invested the most.

Distance forms of education are also being organized in our country. In particular, the decision of the President of the Republic of Uzbekistan dated January 25, 2021 No. PQ-4963 "On measures to support scientific research activities in the field of public education and to introduce a continuous professional development system" in order to ensure its implementation, in accordance with the decision of the Cabinet of Ministers dated January 17, 2022 No. 25 "On the procedure for the establishment of a system of continuous professional development of public education workers", the Ministry of Public Education of the Republic of Uzbekistan and A A special electronic platform "Continuous professional education" has been developed by Avloni Scientific-Research Institute for Studying the Problems of Public Education and Defining Prospects (now Abdulla Avloni National-Research Institute for Professional Development and Training of Pedagogues in New Methodologies) and launched via the web address <https://onlinedu.uz>. This platform was created as a system for organizing online training of leading personnel and pedagogues working in the system of public education. It is possible to work in the system through all kinds of gadgets. Registration in the system is designed in a simple way, and the listener can independently choose the type of online or offline training.

There are also diagnostic tests to determine professional competence, opportunities to offer needs-based courses, video lessons on topics, literature and presentations. After the listener has collected the specified credit score, the possibility of downloading the certificate in electronic form has been created. In addition, the possibilities of mutual file sharing and communication between listeners and tutors are also included. There are also opportunities for Heads of Institutions and Science Methodists to supervise staff studying at their institutions.

Another big role of information technology today is software engineering. This is definitely developing. There is a special project for teaching programming in our country. This is the project "One Million Uzbek Developers" <https://uzbekcoders.uz>. This project is completely free. After registration, you can choose the field of programming you are interested in and study it. You can study remotely, sitting at home. Using information technologies in the educational system means attracting 80% of students' attention to you during your lesson. Because most of today's youth are interested in technology. Here are some examples to use during your lesson:

✓ www.quizizz.com Quizzes This site is a special platform for teachers, you can hold a competition between your students with the topics covered or the questions you want. The teacher prepares the tests himself and submits the correct options to the site, and takes the competition link and shares it with the students. I recommend the Telegram social network as the most convenient way to share links. You can learn how to register and use this site on YouTube. The positive side of this site is that it provides you with complete statistics about the competition you have organized. The Top rating is created by taking into account how many participants answered correctly, how many were wrong, who got the most correct answers, and the speed at which they answered. When students take tests and participate in competitions on this platform, they act with interest and remember what they have read.

✓ www.thinglink.com Thinglink allows teachers to create interactive visuals with music, sounds, text, and photos. They can be shared on other websites or on social networks like Twitter and Facebook. Thinglink offers teachers the ability to create learning methodologies that engage students through interactive content that can expand their knowledge. Also, 360/VR education technologies are used on this platform, so you can see the classroom in a live video. How to organize and design the classroom is very important.

✓ www.projekt.com Project is a tool that allows you to create multimedia presentations with dynamic slides where you can embed interactive maps, links, online quizzes, Twitter timelines and videos, among other options. During classroom sessions, teachers can share with students academic presentations adapted to different devices.

✓ www.socrative.com Developed by a group of entrepreneurs and engineers passionate about education, Socrative is a system that allows teachers to create exercises or learning games that students can solve using mobile devices, whether it's a

smartphone, laptop, or tablet. . Teachers can see the results of the lessons and based on that, they can change the next lessons to make them more relevant.

✓ www.ck12.org/student is a website dedicated to reducing the cost of textbooks for the K12 market in the United States and the world. To achieve this goal, the platform has an open-source interface that allows you to create and distribute educational materials that can be modified and include video, audio, and interactive exercises.

✓ www.deck.toys This platform helps teachers to create and share online lessons using their easy tools. Offering different teaching methods during the lesson helps to make the boorish process of the lesson more fun and enjoyable. (Note: Requires teachers and students to have a Google or Microsoft account.)

✓ www.edu.google.com/intl/ru/products/classroom/ Many teachers already use it as one of the best virtual learning platforms for their classrooms. There's a lot to discover here, and many of the technologies are easy to use, so don't be afraid to dive in! Once you get started, you can easily use Google Meet, Google Slides resources as well.

✓ www.microsoft.com/en-us/education/products/teams Microsoft's online platform for education is very useful and has a large audience! Create co-ed classes, connect with professional learning communities, and connect with colleagues. Conduct private and group chats, save files and even make calls through the platform. In addition, your virtual classroom can be safely provided.

Prospects for the use of information and communication technologies in the educational system include online education, distance training, social networks, e-learning platform courses. Education in these methods differs from traditional education in that it is cheap and convenient. In this case, an adult learner can improve his qualifications, participate in additional courses, and study in retraining courses without leaving work. This type of education does not choose distance, region, age limit of students, social status. Also, persons with disabilities, persons living in remote areas and poor families will have the opportunity to receive education. The learner determines the study period himself, but follows the deadlines set for assignments on the platform.

The best part of online education is that if the learner cannot participate in the class for some reason or does not understand well, he can repeatedly watch and study the information in the form of videos and presentations.

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