

**POSITIVE AND NEGATIVE FEATURES OF THE USE OF INNOVATIVE  
INFORMATION AND COMMUNICATION TECHNOLOGIES IN THE  
EDUCATIONAL SYSTEM**

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**Abstract:** This article discusses the positive and negative aspects of the use of innovative information and communication technologies in the education system.

**Keywords:** Information technology, robotics, microelectronics, information and communication technology, audio and video, educational process, distance learning.

In the current conditions of the development of modern society, digitalization is being widely implemented in all spheres of human activity - production, services, culture, and education. The development of information technologies, robotics, microelectronics, and communications has determined the direction of the development vector of the state's economy. The acquisition and transmission of large amounts of information through remote information networks has significantly changed the content of education. In this regard, there is a need to adapt education and development methods to these conditions [1-6].

The sooner we start using information and communication technologies in the pedagogical process, the easier it will be for students to perceive and use the opportunities of the digital world. All over the world, including in our republic, digital technologies are being actively used in the educational process as an effective way to organize and conduct educational activities. These are electronic textbooks and electronic educational and methodological complexes, which use 3D modeling methods. The education system is transitioning to a single database of work programs for academic subjects in the 1C program [1,3,5].

There are also other information and communication technology tools on the network - e-mail, for example, chat, which allows for online communication. At the same time, every year the quality of sound and image, as well as the size of files that can be transmitted and received, increases significantly. You can conduct audio and video conferences over the Internet using special equipment and software.

Information and communication technology network tools allow for widespread access to educational, methodological, and scientific information. It allows for the organization and simulation of research activities and real-time virtual training sessions.

Technologies such as video recording and television are important for an open and distance education system.

Another serious innovative technology is educational electronic publications distributed on the Internet or stored on media. They allow you to store and transfer the bulk of the material being studied. Working with them individually allows for a deeper understanding and mastery of the material. Educational electronic publications have the ability to present material in dynamic graphic form.

However, this does not mean that you should abandon the traditional source of knowledge - books. For many, the process of "communicating" with a book cannot be replaced

by anything, even the most modern electronic publications. A modern teacher must take into account the positive properties of information and communication technologies, not only possess knowledge in this area, but also apply it in their professional activities.

With the careful and competent use of information and communication technologies as new forms of education, a number of important didactic tasks can be solved:

- first of all, striving for and achieving improvement in the teaching process itself;
- significantly increase the level of independent work of learners and the effectiveness of self-training;
- to activate the educational process of students in the direction of research and exploration activities;

Above, we discussed the positive impact of information and communication technologies on the educational process. At the same time, like any object or phenomenon, information and communication technologies also have a negative side. Their use in all forms of education can lead to a number of negative consequences: a decrease in the student's speech activity (this is especially characteristic of open and distance learning forms), as a result of which the learner does not have sufficient practice in formulating and expressing his thoughts. According to recent psychological research, a prolonged absence of active speech practice negatively affects thinking processes, including independent perception. Excessive individualization of the educational process leads to a lack of live communication between participants in the educational process.

#### **Digital transformation of the educational process.**

Digital didactics and its basic principles. Basic requirements for the design of digital educational resources. Assessment of the quality of digital educational resources.

#### **Pedagogical design, media literacy, and safety in digital learning environments.**

Features of pedagogical design in traditional and digital education. Technology of pedagogical design of digital educational resources. ADDIYE pedagogical design concept. UX-design. Compliance with special norms and rules when working with various resources on the Internet: media literacy, copyright, information security. Methods of protecting copyright on the Internet.

#### **Digital educational resources and software products.**

Use of digital educational resources (DER). Selection of DER, work with electronic libraries, selection of public online courses on open learning platforms based on the needs of learners.

#### **Creating interactive didactic materials based on multimedia and infographics and storing them in cloud services.**

Using cloud services (Google, H5P, Canva, figma) in pedagogical activities. Using cloud services, create interactive presentations that include infographics, video lectures, and multimedia tools, set animation effects, and control presentation display using hyperlinks.

#### **Creating video content for distance learning platforms.**

Audio and video editing using online video editors (Adobe Premiere Pro, Davinci Resolve, FinalCut). Record, edit and save a video on a selected topic using the proposed editor.

#### **Using digital technologies to organize online training.**

Working with webinar services (Zoom, Yandex.Telemost, Google Meet, etc.) when organizing online training.

Also, the "disadvantages" of using information and communication technologies include the following:

1. Increased demands on teachers;
2. Students' scientific and research activities are complicated for two reasons;

3. Numerous abstracts that allow you to get the finished product on compact discs and on the Internet;
4. The technology of project activities has not been fully mastered by subject teachers;
5. No technology has been developed for students to learn independently;
6. Low information literacy among students and teachers;
7. A unified information and methodological service system has not been created for students, their parents, and teachers.

In conclusion, it can be said that the use of information and communication technologies is justified, as it allows students to activate their learning activities in the educational process. It allows you to improve the quality of education for children from low-income families, increase the professional level of the teacher, and implement forms of interpersonal communication of all participants. Also, information and communication technology tools used in modern education allow for high learning results, and new technologies ensure interaction between teachers and students in the open and distance education system.

Information and communication technologies are playing an increasingly important role in our lives, including communication and education. In this regard, it is also important to know how to effectively use these technologies for the benefit of the entire learning community.

UNESCO emphasizes that information and communication technologies contribute to ensuring openness and equity in education, improving the quality of teaching, and enhancing the professional skills of teachers. Furthermore, with appropriate policies, technologies, and capabilities, information and communication technologies can make a significant contribution to improving education governance.

Thus, it should be noted that teaching using information and communication technologies in the education system is the most important means of developing skills in modeling and designing various objects, developing students' information technology thinking, and preparing learners to use digital technologies in life.

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