

## THE ROLE OF TECHNOLOGY IN EDUCATION

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**Abstract.** This article covers the topic “The Role of Technology in Education” and analyzes the importance, capabilities, and impact of technology on the quality of education in the modern educational process. Digital technologies provide learners with quick access to a wide range of information resources, interactive lesson formats, virtual laboratories, online platforms, and artificial intelligence-based learning systems to effectively acquire knowledge. Technologies also allow teachers to optimize the teaching process, automate assessment, diversify educational materials, and adapt them to the individual needs of students. In addition, digital tools develop students' independent learning skills, form creative thinking, and analytical competencies. The article also examines the problems associated with technology - the digital divide, lack of Internet infrastructure, the level of technological literacy of teachers, and security issues. According to the results of the study, technology, when properly implemented, allows for a significant increase in the quality of education, personalization of the educational process and adaptation to global educational standards. The article aims to provide an in-depth coverage of the strategic role of technology in modern education.

**Keywords:** educational technologies, digital education, interactive learning, artificial intelligence, virtual learning, online platforms, quality of education, technological literacy, innovative education, digital competence.

In recent decades, technology has deeply penetrated all aspects of human life, and the education sector is no exception. As a result of the global informatization process, the popularization of the Internet, the development of artificial intelligence and digital platforms, the education system is undergoing fundamental changes. Also, global events such as the pandemic have accelerated the process of digitization of education. Therefore, today it is becoming difficult to imagine the educational process without technology.

Technologies play an important role at all stages of education - from preschool to higher education, from continuing education to professional development. They not only develop the educational process, but also create new pedagogical approaches, increase educational efficiency and increase student interest. Today, teachers are actively using information technologies in organizing lessons, monitoring and evaluating, communicating with students, and in-depth teaching of subjects.

This article provides a scientific analysis of the role of technology in education, its advantages, opportunities, problems, and future prospects. It also examines in depth the impact of technology on pedagogical approaches, the modernization of education using information media, and the formation of digital competencies.

The Internet, electronic libraries, and digital platforms allow students to quickly find information on any topic. This significantly enriches the learning process compared to traditional textbooks.

Interactive whiteboards, simulations, 3D models, virtual laboratories increase student participation in the lesson. The student is no longer just a listener, but an active participant.

AI systems create individual educational programs based on the level of knowledge, interests and pace of development of students. This allows for appropriate education for each student.

Testing systems and AI tools automatically analyze student results. More accurate results are obtained compared to traditional assessments.[3]

Digital resources form independent learning skills in students:

online courses

video lessons

virtual trainings

distance learning systems

This process allows students to learn at their own time and anywhere.

Google Classroom, Microsoft Teams, Moodle platforms teach students to work in groups.

Students:

collective thinking

responsibility

communication skills

social competencies [1]

increase.

Technology saves teachers time:

automatic assessment

electronic journals

online test creation tools

lesson plan templates

This gives teachers more opportunities for methodological preparation.

## AI-based teaching systems

AI systems analyze students' cognitive processes and create a personalized learning path. They:

analyze their mistakes

give appropriate exercises

automatically adjust the level of complexity

Chatbots help students 24/7. Answer their questions, give advice, and provide comments.

Written work, essays, speeches, and projects are automatically analyzed. This makes the assessment process impartial.

## Virtual and Distance Education

With the help of VR, laboratory experiments are carried out without risk. VR is very effective in biology, chemistry, geography, and physics.

Advantages of distance education in a pandemic two were clearly demonstrated. This model overcomes geographical barriers.

## Technology Challenges

Not all students have equal access to technology.

Digital skills development is necessary.

The issue of personal data protection is urgent.

Many technologies can distract students.

In the future, educational technologies will develop in the following areas:

AI teachers

STEM lessons using UAVs (drones)

Metaverse learning environments

automated assessment systems

robotic-based teaching

Education will become more personalized, flexible and global.

In short, Technology is modernizing education, making it interactive, interesting and effective. Digital platforms, artificial intelligence, virtual learning, mobile applications and online learning tools will develop not only students, but also teachers. When implemented correctly, technologies can significantly improve the quality of education, adapt to global standards, and create new pedagogical approaches.

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