



INTEGRATION OF DIGITAL AND INNOVATIVE TECHNOLOGIES IN IMPROVING TEACHING PROCESSES

Rasulova Zilola Durdimurotovna

Zarmed University (Bukhara campus),

Associate Professor of the Department of Social Sciences, PhD

<https://doi.org/10.5281/zenodo.17348759>

ARTICLE INFO

Received: 11th October 2025

Accepted: 13th October 2025

Online: 14th October 2025

KEYWORDS

*digital education, innovation,
web platform, pedagogical
technology, quality of education,
digital literacy.*

ABSTRACT

The article discusses the issues of improving the quality and efficiency of teaching through the effective use of modern digital educational technologies in the educational process. The advantages of organizing the learning process in a digital environment, the possibilities of web platforms and interactive applications were analyzed.

Today, digital technologies are bringing about fundamental changes in all areas of society, including the education system. Digital educational technologies play an important role in improving the quality of education and making the learning process interactive and effective. These technologies are not only a means of imparting knowledge, but also a factor that develops independent thinking, creative approach, and innovative activity in students.

Digital educational technologies are a way of organizing education through information and communication tools, multimedia content, online platforms, and interactive resources. Its main goal is to organize the educational process in an effective, active and personalized way. Interactivity and openness of teaching are ensured through platforms such as Google Classroom, Moodle, Edmodo, Microsoft Teams, Zoom. This activates student participation in the lesson and creates opportunities for independent mastery of knowledge.

The use of digital technologies in the educational process provides a number of positive results:

- expands the visual and multimedia capabilities of teaching;
- increases student activity and interest;
- creates opportunities for independent learning and self-assessment;
- simplifies the work of the teacher and saves time;
- helps to individualize the educational process.

For example, interactive tests (Kahoot, Quizizz), virtual labs, and online quests can make knowledge testing fun and effective.

Digital literacy and innovative approach in education

To effectively use digital technologies, teachers and students must have high digital literacy. This skill includes not only technical knowledge, but also the ability to analyze, secure, and creatively use information in a digital environment. In this regard, it is advisable to

conduct special programs and trainings to form a digital education culture in each educational institution. It is natural that in the near future, digital educational technologies will become the main tool for improving the quality of education.

The following tasks are important in this direction:

- adaptation of e-learning content to national requirements;
- widespread introduction of hybrid (online-offline) learning models;
- integration of virtual reality and artificial intelligence technologies into the learning process;
- development of digital competencies of teachers.

These measures will serve to bring the education system up to modern requirements and increase the competitiveness of students.

The role of digital technologies in developing creative competence

Digital technologies encourage students to explore independently, develop critical and creative thinking. The use of project work, virtual laboratories, and interactive simulations on web platforms encourages them to generate new ideas. Thus, digital educational technologies serve to create a creative pedagogical environment.

Several platforms based on artificial intelligence technologies are being used in the educational process.

Cognii's virtual learning assistant uses conversational technology to develop students' critical thinking skills. The assistant also provides real-time feedback and tailors the learning process to each student's needs.

Quorum uses artificial intelligence to provide STEAM tutoring to schoolchildren. Analyzes lessons and provides teachers with information about student learning opportunities. Also, constantly develops recommendations for adapting topics to the student's level.

Duo lingo focuses on artificial intelligence and how it can improve education. The app allows you to learn more than a dozen foreign languages for free. The program analyzes the language learning level of each user and thereby individualizes topics in the process of learning a second language. The program also makes excellent use of natural language processing technology. This helps to learn foreign languages quickly and effectively.

Artificial intelligence is being widely used in education. With the help of AI, automatic assessment systems have been developed, which can save teachers a lot of time. AI can also be used to determine the level of knowledge of students and create educational programs that match them. For example, AI-powered programs can analyze students' learning styles and provide instructions to help them master classes. Digital technologies have enabled innovative approaches to the educational process. For example, the “flipped classroom” model encourages students to independently review online materials before class and allocates time for deeper analysis during class. This approach enhances communication between teachers and students and makes the lesson interactive. The use of digital technologies in the educational process has brought many new opportunities and advantages to the education system. The introduction of these technologies into education has helped to improve the quality of the educational process and make the learning process for students more effective and interesting.

Let's look at the results of digital technologies in education and the discussions on this topic: Digital technologies are making a significant contribution to improving the quality of education. For example, interactive tools and virtual simulations have improved students' knowledge and understanding of topics. Unlike traditional classroom formats, digital tools make the learning process more interactive and encourage students to actively participate in lessons. Online platforms also make it easier to understand complex topics through engaging and visual materials. However, improving the quality of education requires the correct and effective use of digital technologies. If digital tools are used only to replace traditional lessons, they may not have the desired effect. It is important to improve teachers' digital literacy and familiarize them with new technologies.

Digital technologies allow for effective distance learning. The importance of distance learning has become even more evident during the pandemic, as students have been able to participate in online classes while schools and universities have been closed. Zoom, Microsoft Teams, Google Classroom, and other platforms have been widely used. Distance learning has expanded educational opportunities and shown that education knows no boundaries. However, there are also disadvantages to long-term distance learning. For example, the lack of direct communication between students and teachers, reduced interest in the lesson process, and problems with internet speed. Therefore, in the future, the education system is expected to transition to a hybrid model, combining traditional and digital learning methods. Digital technologies are creating widespread access to educational resources. Online textbooks, digital libraries, educational videos, and interactive programs have enabled students to access and learn the necessary information in a timely manner. This is a great advantage not only for school and university students, but also for students and teachers of all ages.

Conclusion. The effective use of digital educational technologies is important in improving the quality of education, increasing student engagement, and developing creative competence in them. Also, skills for working in a digital environment will be the foundation for future professional activities.

Practical recommendations:

1. Choose a digital platform appropriate for each topic during the lesson;
2. Create a set of video lessons, infographics, and online tests;
3. Organize classes for students in a “hybrid learning” (online + offline) format;
4. Teachers should participate in regular training on digital literacy

References:

1. Distance Education for Teacher Training: Modes, Models, and Methods Mary Burns Education Development Center, Inc. Washington, DC 2011.
2. Энгел В. Moodle для новичков. Обзор возможностей Moodle в вопросах и ответах/ В. Энгел. – Moodle Сентер, 2012 - 18 с.
3. Ваганова Ольга Игоревна, Гладков Алексей Владимирович, Коновалова Елена Юрьевна, & Воронина Ирина Романовна (2020). Цифровые технологии в образовательном пространстве. Балтийский гуманитарный журнал, 9 (2 (31)), 53- 56.
4. Кутепов Максим Михайлович, Челнокова Елена Александровна, & Максимова Ксения Алексеевна (2020). Smart-технологии в образовании. Балтийский гуманитарный журнал, 9 (3 (32)), 125-127