



## THE ROLE OF MODERN INNOVATIVE TECHNOLOGIES IN EDUCATION

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### Abstract

This article provides information on reviewing the main innovative technologies of modern education, as well as identifying their characteristic features and methods of practical application.

**Keywords:** pedagogical technology, innovation, modern education system, education.

### Introduction

Among the concepts in education, pedagogical technology is a system of modern organization of the educational process, it ensures the necessary quality of education and is a consistent method of creating and implementing teaching processes that meet the requirements of accelerated scientific and technical development, aimed at improving educational forms, in technical and human factors, by means of their joint actions. The use of innovative pedagogical technologies in the educational process is the demand of the times.

### Main Part

Innovative education (“innovation” – introduction of new things, invention) gives the meaning of education that creates the opportunity for the learner to create new ideas, norms, rules, advanced ideas created by other people, qualities related to the natural acceptance of norms, rules, and skills [1, p. 72].

As we move further into the 21st century, technology continues to play a growing role in all aspects of our lives. One area where technology has had a profound impact is education. From K-12 schools to universities, technology is transforming the way we learn and teach.

First and foremost, technology has made education more accessible. With online learning platforms and educational apps, students can access learning materials and coursework from anywhere with an internet connection. This has been especially important during the COVID-19 pandemic, where remote learning has become the norm.





In addition to accessibility, technology has also made education more engaging and interactive. Interactive whiteboards, virtual reality simulations, and educational games are just a few examples of how technology is enhancing the learning experience. These tools allow students to visualize complex concepts and engage in hands-on learning activities that were previously impossible.

Moreover, technology has also made education more personalized. With the help of artificial intelligence and machine learning, educators can tailor instruction to the individual needs of each student. This means that students can receive personalized feedback, support, and resources that are tailored to their learning style and pace.

Of course, there are also challenges associated with the integration of technology in education. For example, not all students have access to the same level of technology and internet connectivity. Additionally, there are concerns about the over-reliance on technology and the potential for technology to replace human interaction and creativity.

Despite these challenges, it is clear that technology has a vital role to play in modern education. By making education more accessible, engaging, and personalized, technology is transforming the way we learn and teach. As we continue to navigate the complexities of the digital age, it is crucial that we find ways to leverage technology to support and enhance our educational systems.

In conclusion, technology is revolutionizing the field of education in unprecedented ways. As educators, we must embrace these technological advances and work to ensure that they are used to support and enhance student learning. By doing so, we can create a more equitable, engaging, and effective educational system that meets the needs of all learners.

Education of up-to-date specialists, raising them to become representatives of the field in all aspects is a complex multi-functional system. In the process of educational activities, the teacher uses various methods and educational tools, which allows to achieve positive efficiency in the shortest possible time. Thus, the modern pedagogical education system is aimed at the use of innovative technologies in education, which can significantly increase the effectiveness and quality of education with the correct formation and precise organization of the educational process [5, p. 194].

The innovative process in education is a set of procedures and means by which a didactic idea is transformed into an educational innovation. Innovation activity is a set of measures and technologies to ensure the innovation process at a particular level of education, as well as this process itself. The main functions of innovation activity include changing the components of the pedagogical process: the goals and content of education, means, methods and forms of education, management systems, etc.





The structure of innovative activity includes: scientific search, creation of innovation, implementation of innovation, reflection of innovation. The main result of the search stage is the Academic Research in Educational Sciences Volume 3 | Issue 10 | 2022 ISSN: 2181-1385 Cite-Factor: 0,89 | SIS: 1,12 | SJIF: 5,7 | UIF: 6,1 743 October, 2022 [https://t.me/ares\\_uz](https://t.me/ares_uz) Multidisciplinary Scientific Journal formulated innovation problem, goals and objectives of innovation. What follows is an innovative project of planned transformations. At the implementation stage, innovative activity includes the following actions: program-scenario, organizational managerial, experimental-evaluative and design-translational. In the process of reflection, the obtained results are correlated with the goals set; the resulting product is compared with its original image (model). The reflexive stage of innovation activity performs the function of feedback.

Thus, the activity that ensures the transformation of an idea into an innovation, and also forms a system for managing this process, is an innovative activity. In the innovation process, four interrelated activities are distinguished: methodological, research, pedagogical and educational. Methodological activity is aimed at developing the methodology of the innovation process; it is carried out by the methodologist.

Innovative changes in the education system of our country are going in the following directions: changing the goals and content of education at all levels, starting from kindergarten; bringing them into line with humanistic guidelines and the requirements of the time; development and implementation of new educational standards based on a competency-based approach, development and implementation of new educational technologies; informatization of the entire education system; introduction of specialized education in secondary school; application of methods and forms of individualization of education; creation of conditions for self-determination and creative development of the individual in the learning process; creation and development of creative innovative teams of educational organizations; combination of the educational process with the research work of teachers, students and much more.

In view of the multidimensionality of innovative activity in education, we confine ourselves to considering only one problem – the development of modern teaching technology.

In addition, the process of introducing and using innovative technologies in practice remains the main problem for teachers of vocational education, because it is important not only to properly integrate these technologies into the educational process, but also to make specific adjustments to their approaches, organize student activities, and change the direction from traditional to innovative.





The dynamic of the rapidly developing world is becoming the key to increasing the need for not only high-quality, but also relevant education. It should be noted that the highest effectiveness of education is manifested in its ability to adapt to the current economic and social situation and other external conditions.

An analysis of foreign and domestic scientific and pedagogical literature allows us to conclude that pedagogical technology is connected with a systematic approach to education, covers all elements of the pedagogical system: from goal setting to designing the entire didactic process and testing its effectiveness. Pedagogical technology should be considered as a systematic and consistent implementation in practice of the designed learning process, as a system of ways and means to achieve the goals of managing this process. Modern learning technology is a systematic approach to design, implementation, control, correction and subsequent reproduction of the learning process

The use of innovative technologies by teachers in the educational process is aimed at involving students in the educational process from an active learning position. Thus, the introduction of innovative technologies and their competent use increases the efficiency and quality of education [2, p. 108].

Therefore, innovative technologies mean special forms and methods aimed at organizing active learning from the position of realizing the student's potential, combined with the teacher's methods and skills in organizing the educational process. Also, innovative educational technologies include the use of modern content and teaching methods built on the principle of interdependence of three main (system-forming) components, as well as the formation of a modern teaching infrastructure [3, p. 40]:

the use of modern content and the creation of additional educational materials (in the form of multimedia presentations, videos, audio files, etc.) and their use implies the availability of modern information and communication technology materials. It should also be taken into account that the content of training in an educational organization includes not only knowledge and skills, but also the formation of appropriate competences in accordance with the economic and social situation of the time;

innovative teaching methods mean, first of all, methods aimed at activating and involving students in the educational process (taking into account the specific characteristics of learning and the formation of relevant teaching skills), creative activities of an active group, collective interaction. (distinct from "passive" data acquisition);





educational process – informational, organizational (management), technological, communication and technical components, each of which allows to have the necessary advantages and introduce them into the educational process (for example, introducing the active use of gadgets in the educational process, etc.) [4, p. 10].

Today, the interest and attention to the use of interactive methods, innovative technologies, pedagogical and information technologies in the educational process is increasing day by day, one of the reasons for this is that, until now, in traditional education, students were taught to acquire only ready-made knowledge, but modern technologies teach them to search for the acquired knowledge by themselves, to study and analyze independently, and even to draw conclusions by themselves. Knowledge, experience and interactive methods of pedagogical technology and pedagogic skills ensure that pupils – students have an educated, mature qualification.

The advancements in technology have had a significant impact on our daily lives, our careers, and our education. In today's digital age, technology is crucial in shaping modern education systems. Technological advancements are transforming learning and teaching. They may try out novel pedagogical approaches using digital resources, including online courses, smartphone applications, and cloud-based software. Let's talk about how technology impacts modern education systems and transforms our approach to education.

Online learning platforms have revolutionized the way students learn. Thanks to the proliferation of online education, students now have more flexibility in when and how they study. Students may find courses ranging from the basics to more complex topics on online learning sites. Chat rooms and forums on these sites also facilitate real-time communication between students and teachers.

Coursera is a widely used online education provider. Coursera offers over 4,000 courses from more than 200 universities and organizations worldwide. Students can choose from various courses, from data science to business management, and learn from some of the world's top educators.

Another popular online learning platform is edX. edX offers over 3,000 courses from 130 universities and organizations worldwide. Students can learn about various topics, from computer science to psychology, and receive a verified certificate upon completion.

## Conclusion

In the educational process, conducting classes using new innovative techniques and technologies, holding classes using laboratory rooms equipped with the latest techniques, providing information about the latest innovations in the field of





specialization, for example, in the field of chemistry, giving examples from the world experience, motivates to educate students in the spirit of innovation.

Thus, the introduction of innovative educational technologies into the educational process requires the teacher to acquire special prognostic, organizational, creative and other abilities, requires high motivation to involve students in active learning and cognitive activities, based on which the goals of knowledge, skills and competence, competence formation are realized.

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