THE RELEVANCE OF APPLYING INFORMATION AND COMMUNICATION TECHNOLOGIES IN EDUCATION

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Abstract

The article examines the relevance of applying information and communication technologies in education today. It considers the prospects of innovative technologies in teaching, the modern understanding of innovative technologies, their role and significance, the challenges of using various teaching methods in problem-based learning, problem-solving, finding solutions to situations, and the future prospects of innovative technologies in this field.

Keywords: informatization effect, sphere of activity, equipment and technologies, level of scientific development, systemic reform, methodological foundation, periodic application, spectrum, ensuring quality compliance, modernization, digitalization.

The level of a person's education in the modern world is higher when they can operate independently across a wider range of activities and in situations with greater uncertainty, and when they possess a broader spectrum of potential methods of activity. This is precisely what defines the modern advanced education system capable of ensuring the required level of education. The ongoing processes in our republic of reforming educational content, ensuring the quality of trained personnel meets the requirements of current economic and social reforms, as well as the global level of scientific, technical, and technological development, demand constant stimulation of aspirations towards science and education. The changes happening today, the educational services offered, and the practical implementation of theoretical ideas promoted by educational institutions providing these services, as well as their effective utilization, are among the most important tasks facing educators. The results of fundamental research conducted in recent years in the field of pedagogy continue to confirm the existence of numerous works in this direction. In recent years, a number of research projects have been carried out in the field of education and upbringing in our republic, and certain progress has been achieved in systematically reforming higher education in the Republic of Uzbekistan. This includes elevating the process of training independently thinking, highly qualified personnel with modern knowledge and high spiritual and moral qualities to a qualitatively new level, modernizing higher education, and developing the social sphere and economic sectors based on advanced educational technologies.

The aim of the innovative approach to the educational process is to develop students' ability to acquire new experiences through purposeful cultivation of creative and critical thinking. When teaching a specific subject, communication and information technologies tailored to that subject are among the most significant. First and foremost, it should be noted

that in this context, innovative activity is associated with the integration of subject teaching and computer science. This creates an effect of informatization and digitalization of the educational process, which should instill a firm belief that these qualities of organizing education are characteristic of the entire modern society. Here, students can leverage their existing desire to master basic knowledge not only in the subject of study but also in computer science itself. [1] There arises a need for various types of software during the mastery of the curriculum, achieving educational goals through the use of computer capabilities. Today, it is common knowledge that almost every student has access to a desktop or laptop computer, which opens up opportunities for different formats of independent or situational work within the framework of the lesson. Incorporating elements of computer science into the educational process partially alters the content of educational activities, allows for more detailed acquisition of certain competencies in shorter timeframes, and creates conditions for a fundamental reorganization of educational work. In conclusion, it can be said that elements forming a new direction in teaching using information technologies are being integrated into the methodological foundation of education. The main goal of innovative educational technologies is to prepare young professionals for life in a constantly changing digital world. [2]

The goal of using innovative technologies in education is to create a learning process that focuses on realizing the potential capabilities of individuals.

Education should develop mechanisms for innovative activity, find creative ways to solve vital problems, contribute to transforming creativity into a norm and form of human existence, as well as identify patterns to determine and implement the most effective and time-efficient practices.

Therefore, educators are implementing such innovative technologies as:

- differentiation and individualization technologies;
- project technologies, which involve organizing lessons in the form of independent design of educational material, which is then structured and modeled in a specific form: graphic, symbolic, or sign-based;
- problem-based learning technologies;
- interactive technologies;
- information technologies:
- multimedia lessons conducted using computer-based training programs;
- lessons based on electronic textbooks;
- presentations.

Interactive technologies are gaining increasing recognition today and are being utilized in teaching various academic disciplines. Interactive interaction involves real-time feedback between humans or between human-machine systems. "Today, human nature demands visual representation" - this requirement can be easily met by information and communication technologies. To foster students' cognitive and creative activity in the learning process, modern educational technologies are employed. These technologies allow for improving the quality of education, more effective use of study time, and reducing students' rote learning by decreasing time allocated for homework. The relevance of applying information and communication technologies includes:

- a qualitatively new type of lesson (dynamic, informative);
- rapid access to necessary information;

- a wide range of visual aids;

- increased interest in the subject, effective assessment of students' knowledge using simulators;

- acceleration of the learning process through closer interaction between teacher and students.

Currently, an increasing number of new digital educational resources are emerging. Their application allows teachers to save time on lesson preparation, choose materials that will fully enable students to understand new topics, and diversify verification and consolidation methods. Innovative learning technologies should be viewed as tools through which a new educational paradigm (example, model, pattern) **,** can be implemented.[3,4]

Basic educational technologies.

- *Problem-based learning technology* involves creating problem situations in educational activities and organizing students' active independent work to solve them. This results in the creative mastery of knowledge, skills, and abilities, as well as the development of thinking skills.

- *Information and communication technologies* encompass the transformation and unlimited enrichment of educational content, the use of integrated courses, internet access, interactive teaching methods, and remote interaction.

- *Multi-level learning technology* allows the teacher to assist weaker students while giving attention to stronger ones. This technology enables high-performing students to advance faster and deeper in their education. Strong learners are affirmed in their abilities, while weaker students gain the opportunity to experience academic success and self-realization within their capabilities, thereby increasing the overall level of learning motivation.

- *Project-based learning methodology.* This approach enables the development of students' individual creative abilities and fosters a more conscious approach to professional and social self-determination.

- *Research-based learning methodology* allows students to independently expand their knowledge, delve deeply into the problem under study, and propose potential solutions, which is crucial for shaping their worldview. This is important for determining the individual developmental trajectory of each student.

- *The lecture-seminar system helps students prepare for exams.* It allows for the consolidation of material into cohesive blocks and its presentation as a unified whole, while assessment is based on students' preliminary preparation.

However, this approach should not be overused, as it can render the educational process ineffective: it may become tedious for students, reducing their motivation to learn. Moreover, large volumes of information are not fully processed and, consequently, are poorly retained by students.

Nevertheless, as an occasional method, this approach is acceptable in college, especially when combined with seminars on challenging topics, where students can apply and actualize their acquired knowledge and skills.

- *The technology of using game methods in teaching.* These can include role-playing, business, and other types of educational games. This approach ensures the broadening of horizons, development of cognitive activity, formation of specific skills and abilities necessary for practical activities, and overall skill development.

- *Health-preserving technologies.* The use of these technologies allows for the uniform distribution of various types of tasks during the lesson, alternating mental activity with short physical exercise breaks, determining the optimal time for presenting complex educational material, and allocating time for independent work, which yields positive results in learning.

- *Distance learning technology* - is becoming increasingly relevant. Elements of this technology can also be used for remote communication between the teacher and students when completing homework (individual-consultative distance methodology), when working on projects, as well as for full-fledged learning when students are temporarily unable to attend classes.

- *Modular learning technology* ensures individualization of learning in terms of: content, pace of assimilation, level of independence, methods and ways of learning, and methods of control and self-control. [1,5]

The advantages of innovative technologies are as follows: they enable students to acquire solid and conscious knowledge, develop independence in learning activities, increase the time spent discussing educational material during the lesson, create a positive emotional atmosphere, eliminate fear of incorrect answers, foster a sense of confidence, enhance communicative culture, increase motivation for further education, improve student self-esteem, and alleviate psychological tension for both students and teachers. Thus, a large number of learning technologies have been developed to date, which necessitates theoretical generalization, analysis, and classification of these innovations, as well as the selection of optimal ones.

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