



ADVANTAGES OF NEW TECHNOLOGIES IN EDUCATION

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Abstract

The article examines the prospects for implementing innovative technologies in teaching, the modern understanding of innovative technologies, and their role and significance. It considers the challenges of using various teaching methods in problem-based learning, problem-solving, finding solutions to situations, and the prospects of innovative technologies. The effectiveness of informatization and digitalization of the educational process is discussed, which should create a firm conviction that these qualities of organizing the educational process are characteristic of modern society. The article also explores designing learning by the requirements of the time, as well as using and developing logical thinking skills.

Keywords: Informatization effect, sphere of activity, equipment and technologies, level of scientific development, systemic reform, methodological basis, periodic application, spectrum, quality assurance, modernization, digitalization.

Introduction

In order to increase the effectiveness of research work, widely engage young people in scientific activities, and develop an innovative scientific infrastructure



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in higher education institutions, a concept is being gradually implemented that provides for the close integration of education, science, innovation, and activities to commercialize research results in higher education institutions. This concept involves attracting foreign investment, expanding the scope of paid services and other extra-budgetary funds, and ensuring activities to research and forecast the socio-economic development of relevant industries, spheres, and regions.

The creation of enterprises based on higher educational institutions that implement scientific research results by developing new products, equipment and technologies with high commercialization potential through start-up projects funded by extra-budgetary sources. This includes the development of academic entrepreneurship, advancement of fundamental, applied and innovative scientific research, preservation of existing and establishment of new scientific schools, strengthening their human resources potential, while encouraging broad participation of gifted youth in science. Research work is directed towards innovative solutions to existing problems in the social sphere and economic sectors, including at the regional level, and extensive study of issues in related scientific fields.

Higher education today is characterized by the use of a wide variety of psychological and pedagogical innovations, which depend on the educational institution teaching the chemistry and biology courses and its readiness to take further steps in implementing new types of learning activities. To master innovative technologies, it is necessary to have a comprehensive understanding of them and identify their distinctive features. [1]Educators can utilize freely available educational resources. These resources are typically categorized by sections corresponding to the main subjects of general education or areas of additional education. They contain both educational and reference materials. Students can also make use of these resources. Electronic tests, interactive models, colorful illustrations, ready-made materials, training simulators, and other educational and methodological materials found in the resource sections will help teachers prepare and conduct engaging, informative, and vibrant lessons, while allowing students to complete homework, research projects, or other types of independent work. The key to integrating technology in education will always be determined by the teacher-student relationship, as that is where



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education truly takes place. Technology can be a highly effective tool, but it remains just that - a tool. Technology is not meant to replace teachers; rather, the idea is to create a learning environment that shifts the organization of the educational process towards collaboration and productive learning activities. Today, we are at the initial stage of implementing technology in education. The implementation process may frustrate or irritate some, consuming considerable energy and time, but ultimately, technology can "open doors" to new experiences, discoveries, learning methods, and collaboration between students and educators. Modern technologies expand communication possibilities and create a more productive learning environment. By joining online groups, students can exchange information, collaborate on group projects, and interact with their teacher.

Technology allows for greater experimentation with pedagogical approaches and provides instant feedback. Modern technologies enable students to become more active participants in the educational process, while allowing educators to develop new approaches, methods, and models of teaching and upbringing. The learning process becomes more dynamic with the use of digital textbooks, where students can access links to relevant materials or resources. Utilizing technological tools for organizing project activities leads to significant improvements in learning outcomes. Teachers gain the opportunity to implement new models for structuring the educational process.

Technologies help ensure students' active involvement in the learning process. Online surveys and other digital tools help engage all students, including those who are shy, unsure of their abilities, or usually don't show initiative. Online systems allow for regular feedback, including students' opinions on the accessibility of educational materials and assignments. Data analysis enables teachers to easily and quickly identify each child's difficulties and provide timely assistance, determine areas where students can compete, and thus easily adjust the work of individual students or group work. For example, technology can significantly enhance the effectiveness of active learning methods such as quizzes. At the beginning of a lesson, the teacher can conduct a quiz using technical devices and quickly assess the students' initial level, spending only a few minutes obtaining and analyzing reliable information. The teacher can then



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make adjustments to the educational process, objectively understanding where to direct their efforts and how to organize students' work. Conducting the same quiz at the end of the lesson will again allow for feedback with minimal time investment, while students can evaluate their learning outcomes and success.

There are numerous resources for organizing productive learning activities for students. Mobile platform applications and electronic textbooks offer an abundance of tools that significantly change the organization of learning activities. Some technical devices employ various types of stimulation and aid in assimilating information during the learning process, utilizing competitive scenarios for the distribution of points and rewards to make the learning process more engaging and appealing. An important condition for using such technical devices is achieving learning objectives. Some mobile platforms and electronic textbooks include role-playing games in which students are given the opportunity to present facts and arguments in favor of, for example, historical figures or scientific concepts. Furthermore, game technologies contribute to the introduction of healthy competition into the educational process. Modern automated learning systems can significantly assist in organizing productive learning activities and realistically assess the achievements of each student.

Technologies will help teachers automate or simplify the performance of a number of tedious duties. Automation can simplify the execution and reduce time spent on routine but labor-intensive tasks, such as tracking student attendance and academic performance. [3]

Modern technological tools simplify the systematization and selection of individual tasks for students, and help track their active participation in discussions. The ability of modern technological tools to visualize educational material that is difficult to perceive and understand reduces the teacher's effort and time spent on explanations. For example, augmented reality technology allows students to create molecules of complex chemical compounds from atoms in a virtual environment using their own hands. Due to the sense of presence created by influencing human sensory organs, this technology enables a more effective demonstration of the process of creating a molecule or substance compared to a presentation on a screen or a picture on paper.



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Technology provides instant access to necessary information and cultivates important skills in working with sources. [4] The value of the learning process increases if information in textbooks or teaching aids can be quickly updated and supplemented, including through the efforts of the students themselves. Modern technologies expand the possibilities of communication and create a more productive learning environment. Students, by joining groups on the Internet, can exchange information, work together on group projects, and interact with the teacher.

In conclusion, it can be said that the ability to use technology is a vital skill and an important type of literacy. Digital literacy is more than just possessing "isolated technological skills." Today, we are talking about a deep understanding of the digital environment, which enables intuitive adaptation to new contexts and collaborative content creation with other learners. Creating presentations, learning to find reliable sources on the Internet, and maintaining proper online etiquette are life skills that students can acquire during the learning process, and these skills will be useful to every child throughout their life. Digital literacy can help educational institutions not only improve the quality of education but also ensure that learning outcomes remain relevant at all times.

Students will benefit from the ability to distinguish between high-quality information sources and unreliable ones. Educational institutions can create a list of electronic educational resources containing information that students can trust, use, copy, and adapt.

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