

**Modern technologies of training
as a means of improving the quality of education**

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The main goal of innovative educational technologies is to prepare a person for life in a constantly changing world. The essence of such training is to focus the educational process on the potential of a person and their implementation. Education should develop mechanisms of innovative activity, find creative ways to solve vital problems, and promote the transformation of creativity into a norm and form of human existence. Innovative activity presupposes a system of inter-related types of work, the totality of which ensures the emergence of real innovations.

The main goal of innovative technologies of education is to prepare a person for life in a constantly changing world. The essence of such training is to focus the educational process on the potential of a person and their implementation. Education should develop mechanisms of innovative activity, find creative ways to solve vital problems, and promote the transformation of creativity into a norm and form of human existence. Innovative activity involves a system of interconnected types of work, the totality of which ensures the emergence of real innovations. Deep processes occurring in the education system lead to the formation of a new ideology and methodology of education as an ideology and methodology of innovative education. Innovative technologies of education should be considered as a tool with the help of which a new educational paradigm can be implemented [1–6].

The main goal of innovative technologies of education is to prepare a person for life in a constantly changing world. The essence of such training consists in the orientation of the educational process on the potential capabilities of a person and their implementation. Education should develop mechanisms of innovative activity, find creative ways to solve vital problems, contribute to the transformation of creativity into the norm and form of human existence. Innovative activity presupposes a system of interrelated types of work, the totality of which ensures the emergence of real innovations. Namely:

– research activities aimed at obtaining new knowledge about how something can be (discovery), and how something can be made (invention);

– project activities aimed at developing special, instrumental and technological knowledge about how, based on scientific knowledge, it is necessary to act in given conditions in order to get what can or should be (innovative project);

– educational activities aimed at the professional development of subjects of a certain practice, at the formation of personal knowledge (experience) in each person about what and how they should do so that the innovative project is embodied in practice (implementation). Innovative technologies in education are the organization of the educational process, built on qualitatively different principles, means, methods and technologies and allowing to achieve educational effects, characterized by:

- acquisition of the maximum amount of knowledge;
- maximum creative activity;
- a wide range of practical skills and abilities.

What is innovative education today? This is an education that is capable of self-development and that creates conditions for the full development of all its participants; hence the main thesis: innovative education is a developing and evolving education. What is innovative educational technology? It is a complex of three interrelated components: Modern content that is transmitted to students involves not so much the acquisition of subject knowledge as the development of competencies. This content should be well structured and presented in the form of multimedia educational materials that are transmitted using modern means of communication. Modern teaching methods are active methods of developing competencies based on the interaction of students and their involvement in the educational process, and not just on the passive perception of the material. Modern learning infrastructure, which includes information, technological, organizational and communication components that allow you to effectively use the advantages of distance learning. In the current conditions of modernization of Russian education, the goals and objectives facing the school and teachers are changing. The emphasis is shifting from «knowledge acquisition» to the formation of «competencies». The transition to competency-based education began in 2002. The system of forming key competencies includes communicative competence and a model of forming social competencies. In practice, this is expressed in the formation of communication skills, skills and abilities to act in social situations, the ability to take responsibility, develops skills of joint activities, the ability to self-development; personal goal setting; self-actualization. Promotes the development of tolerance; the ability to live with people of other cultures, languages, religions.

Thus, there is a reorientation towards a humanistic approach to teaching. Innovative pedagogical technologies are being introduced, providing for the consideration and development of individual characteristics of students. Modern educational technologies can be considered as a key condition for improving the

quality of education, reducing the workload of students, and more efficient use of study time. Currently, a wide variety of pedagogical innovations are used in school education. However, the following most characteristic innovative technologies can be distinguished.

1. Information and communication technologies (ICT) in subject teaching.

Information and communication technologies (ICT) are of key importance at all levels of the educational system. At each stage of cognitive activity, scientific research and practical applications in all branches of knowledge, information and communication technologies simultaneously perform the functions of tools and objects of cognition. The peculiarity of information and communication technologies is their universality, they are a tool that is used in all branches of knowledge: humanitarian, natural science, socio-economic. Consequently, the innovative nature of ICT development directly affects other branches of knowledge that shape the worldview of a young specialist, improving the didactic and methodological presentation of knowledge, increasing the ability to perceive and generate knowledge, thereby introducing an innovative element into the comprehensive development of the individual. The use of information and communication technologies makes it possible to significantly speed up the process of searching and transmitting information, transform the nature of mental activity, and automate human labor. Experience has shown:

a) the school's information environment, including various forms of distance education, significantly increases students' motivation to study subject disciplines, especially using the project method;

b) the computerization of education is attractive to students because it increases the efficiency of student work, increases the share of creative work, and expands the opportunity to receive additional education in the subject within the school;

c) the computerization of teaching is attractive to teachers because it allows them to increase their productivity and improves the overall information culture of teachers.

2. Personality-oriented technologies in teaching the subject.

Personality-oriented technologies place the child's personality at the center of the entire school educational system, ensuring comfortable, conflict-free and safe conditions for its development, and the realization of its natural potential. The child's personality in this technology is manifested in the students' mastering of educational programs in accordance with their capabilities and needs.

3. Information and analytical support for the educational process and quality management of the student's education.

The use of such innovative technology allows us to objectively and impartially track the development of each individual child, class, parallel, and school as

a whole. With some modification, it can become an indispensable tool in preparing class-summary control, studying the state of teaching any subject of the curriculum, studying the work system of an individual teacher.

4. Monitoring intellectual development. Analysis and diagnostics of the quality of education of each student using testing and plotting graphs of the dynamics of academic performance.

5. Educational technologies as the leading mechanism for the formation of a modern student.

Educational technologies are implemented in the form of involving students in additional forms of personality development: participation in cultural events according to national traditions, training in theater studios, children's creativity centers, etc. 6. Didactic technologies as a condition for the development of the educational process of educational institutions.

Here, both well-known and proven methods and new ones can be implemented. These are independent work with the help of a textbook, a game, design and protection of projects, training with the help of audiovisual technical means, a consultant system, group, differentiated methods of training - a system of small groups, etc.

7. Psychological and pedagogical support for the introduction of innovative technologies in the educational process of the school.

It is assumed that there will be a scientific and pedagogical justification for the use of certain innovations. Their analysis at methodological councils, seminars, consultations with leading specialists in this field.

Thus, the experience of a modern Russian school has a wide arsenal of application of pedagogical innovations in the learning process. The effectiveness of their application depends on the established traditions in the general educational institution, the ability of the teaching staff to perceive these innovations, the material and technical base of the institution. New educational standards introduce a new direction of assessment activities – assessment of personal achievements. It is becoming important for society to objectify the personal achievements of each subject of the educational process: student, teacher, family. In the standards, the final assessment of a student also includes an accumulated assessment, which characterizes the dynamics of individual educational achievements throughout all years of study at school. The portfolio is the optimal way to organize the cumulative assessment system. This is a way of recording, accumulating and assessing the student's work, results, indicating his efforts, progress and achievements in various areas over a certain period of time. For a student, a portfolio is an organizer of his educational activities, for a teacher – a means of feedback and an instrument of assessment activities. In this context, a student should be considered any learner, and a teacher should be considered the leader of the learning process. The choice of the portfolio type depends on the purpose of its creation. In addition

to general educational skills to collect and analyze information, structure and present it, a portfolio allows you to develop higher-order intellectual skills – meta-cognitive skills.

The student must learn:

- select and evaluate information;
- accurately determine the goals that he would like to achieve;
- plan his activities;
- give assessments and self-assessments;
- track your own mistakes and correct them.

Using these technologies in innovative teaching, the teacher makes the process more complete, interesting, and rich. When crossing subject areas of natural sciences, such integration is simply necessary for the formation of a holistic worldview and worldview of students. Thus, the goal of innovative activity is a qualitative change in the personality of the student compared to the traditional system. This becomes possible due to the introduction of didactic and educational programs unknown to practice into professional activities. Developing the ability to motivate actions, independently navigate the information received, developing creative, unconventional thinking, developing children by maximizing their natural abilities, using the latest achievements of science and practice are the main goals of innovative activities.

As noted above, a traditional lesson does not meet modern requirements in education, so I became interested in innovative pedagogical technologies. Using them, I try to promote the development of a personality capable of being aware of himself and his place in the world, able to navigate in difficult life situations and positively solve his problems. Thus, using innovative educational technologies, it is possible to solve the following interdependent problems:

1. Promote the development of the personality of students with an active civic position, able to navigate in difficult life situations and positively solve their problems.
2. Change the nature of interaction between subjects of the school education system: a teacher and a student are partners, like-minded people, equal members of «one team».
3. Increase the motivation of students for educational activities. High motivation for educational activities is also due to the versatility of the educational process.
4. Pay more attention to the study and mastery of modern pedagogical technologies that make it possible to significantly change the methods of organizing the educational process, the nature of the interaction of the subjects of the system, and, finally, their thinking and level of development.

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Innovative Technologies in the Development of Natural Sciences and Modern Education in Turkmenistan

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This article explores the role of innovative technologies in advancing natural sciences and education in Turkmenistan. It examines the integration of tools such as artificial intelligence, virtual laboratories, and digital classrooms, highlighting their impact on scientific research and learning processes. The text discusses governmental initiatives aimed at promoting digital literacy and modernizing infrastructure while addressing challenges like the digital divide and scalability.

Innovative technologies play a pivotal role in the advancement of natural sciences and education in Turkmenistan. As the nation continues to prioritize modernization and sustainable development, the integration of these technologies into scientific research and educational practices marks a significant shift in its approach to knowledge creation and dissemination. The following text explores how advancements such as artificial intelligence, digital classrooms, and virtual laboratories are influencing these domains, the government's initiatives in this regard, and the opportunities and challenges that lie ahead.

The natural sciences benefit immensely from innovative technologies, which enable researchers to analyze complex phenomena and improve methodologies.