

Modern Pedagogical Technologies New Methods, Innovations And Their Application

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Abstract: The article explores modern pedagogical technologies, their significance, and methods of effective implementation in the educational process. Innovative approaches such as information and communication technologies, interactive methods, digital platforms, STEAM education, blended and flipped learning are analyzed. The study highlights strategies to enhance students' engagement and creativity. It also addresses challenges encountered in applying modern pedagogical technologies and suggests potential solutions.

Keywords: Modern pedagogical technologies, innovation, interactive methods, STEAM, digital education, flipped classroom, education quality, learning process.

Introduction: Pedagogical technologies are a set of goal-oriented, systematic, designed and repeatable methods of the educational process. Through them, it is intended to form the necessary knowledge, skills and competencies in students, as well as achieve personal development. Modern pedagogical technologies are aimed at increasing the effectiveness of education by combining these traditional methods with modernity, innovative approaches, information and communication technologies.

Today, changes in the education system, the rapid development of digital technologies, and the increasing demand for knowledge require teachers to take a new approach. In such conditions, modern pedagogical technologies play an important role in updating the quality, content and form of education.

The main features of modern pedagogical technologies are:

- a) Person-oriented - taking into account the individual characteristics and abilities of the student;
- b) Innovation - the use of new ideas, methods and techniques;
- d) Integration with information and communication technologies - the use of digital tools, multimedia, online platforms;
- e) Motivation for activity - encouraging students to think independently, research and be creative;

f) Result orientation - planning and assessing the results achieved by the student in advance.

In Uzbekistan, modern pedagogical technologies such as "Blended learning"; "Small group work technology", "Brainstorming", "Cluster" method, "Case-study" (situational learning), "Interactive games" teaching, "Constructive learning" model are widely used. Through these technologies, the teacher in the learning process acts not only as a provider of knowledge, but also as a manager and guide of learning activities. This ensures that the student himself is at the center of his activity.

Modern pedagogical technologies are one of the main factors in improving the educational process and increasing its effectiveness. If each teacher deeply studies these technologies and creatively applies them in accordance with their subject, the quality of education will increase significantly. At the same time, these technologies prepare the younger generation for independent thinking, innovative approaches and the ability to solve life problems.

Modern pedagogical technologies are innovative methods of designing, organizing and controlling the educational process, which serve the development of the student's personality. Such technologies include:

- 1) Interactive teaching methods: cluster, brainstorming, role-playing, aquarium, etc.;
- 2) Teaching based on ICT (Information and

Communication Technologies);

3) STEAM technology (integration of science, technology, engineering, art and mathematics);

4) Digital platforms: Moodle, Zoom, Google Classroom, Kahoot;

5) Flipped classroom technology: mastering information at home, practice in the classroom;

6) Project-Based Learning.

2. Practical examples of implementing pedagogical innovations

Innovation means the use of new ideas, methods, technologies and tools to improve the learning process, increase educational efficiency and keep up with the demands of the times. An innovative approach to education requires creativity, openness to innovation and constant research from the teacher.

In the modern world, innovative approaches that can compete with traditional teaching methods form deep knowledge, solid skills and practical qualifications in students. Innovations play a particularly important role in preparing students for independent thinking, solving problem situations and life.

Main areas of innovation:

1. New methods and techniques: Constructive learning, project activities, interactive methods such as "brainstorming", "case-study", "debate", "problem-based learning".

2. Technological tools: Interactive whiteboards, tablets, virtual laboratories, artificial intelligence-based platforms, online testing systems.

3. Digital resources: Electronic textbooks, video lessons, multimedia presentations, mobile applications.

4. Innovative organizational forms: Flipped classroom, blended learning, distance learning, STEM/STEAM approaches.

An innovative teacher seeks innovation in his work and dares to apply it. He conveys his subject to students in a modern way. He involves the student not as a passive listener, but as an active participant. He values the opinion and initiative of each student.

For example, in a traditional science lesson, information is provided based on a map in a textbook. In an innovative approach, students conduct interactive analysis using Google Earth, ArcGIS or 3D models. This not only arouses interest in science, but also provides a connection with real life.

Innovation is not just introducing innovation, but also a qualitative change in the teacher's professional skills and pedagogical approaches. It is necessary to

implement innovative technologies to meet the intellectual needs of today's students and prepare them for life. Therefore, it is important for every teacher to strive for constant innovation, update their knowledge and skills to meet the requirements of the times.

Innovations can be used at all stages of education. For example: explaining the topic using electronic presentations in primary grades; activating students through group work; creating easy access to tests and assignments through QR codes; increasing motivation through teaching with game elements (gamification).

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Integration with information and communication technologies is the basis of digital education.

Information and communication technologies (ICT) are a set of tools that allow for the effective organization, control, analysis and management of the educational process through digital means. Integration with ICT in modern pedagogical technologies – ensures that the teaching process is interactive, flexible and modern.

The role of integration with ICT in the educational process is as follows:

1. Creates visual and interactive learning opportunities – topics are explained in more depth through video lessons, graphics, animations, simulations.

2. A flexible learning environment is created – distance learning, online classes, virtual laboratories.
3. Increases the activity and independence of students – independent research, conducting research on the Internet, consolidating their knowledge through online tests.
4. Improves the assessment system – automatic tests, electronic portfolios, the ability to digitally analyze results.
5. Eases the teacher's burden – lesson development, reuse, use of ready-made electronic resources.

The student is formed as an independent learner, problem solver and researcher through ICT.

The teacher, on the other hand, plays the role of a manager, resource provider, and guide. For example, in an elementary school science class, when students are taught about animals, the lesson becomes more lively, understandable, and memorable through the use of animated videos, interactive tests, and virtual encyclopedias.

Integration with information and communication technologies is an integral part of modern education. It not only makes the teaching process interesting and effective, but also educates the student as a digitally literate person with 21st century competencies. The selective and purposeful use of ICT tools by each teacher in accordance with his subject contributes to the formation of a digital culture in education.

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