

SPECIFIC FEATURES OF PROBLEM-BASED EDUCATION

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ABSTRACT

Problem-based education is an educational process that involves the creation of problem situations in the minds of students under the guidance of a teacher and the organization of independent activities aimed at solving these problems. As a result, creative assimilation and development of knowledge, skills and abilities is achieved. Problem-based learning helps students to effectively acquire knowledge in their practical activities and leads them to be able to solve educational problems in the future, to teach independent research, to collect creative experience and to fill it, and at the same time, it opens up opportunities to analyze the tasks of the educational process.

The idea of problem-based education was developed by the American psychologist and teacher J. Dewey (1859-1952). It was founded in Chicago in 1894 as an experimental school based on play and work rather than curriculum. The lessons of reading, writing, and calculation were conducted in accordance with the needs of children, taking into account the physiological growth and development of children.

J. Dewey's theory, the learner repeats the human path in the process of learning. Knowledge acquisition is an uncontrolled process, and the student learns the learning material as a result of satisfying his needs. In his opinion, in terms of the effectiveness of teaching, the problem statement of the educational material should be related to the child's activity.

J. Dewey points out the following directions as the basis of problem-based learning:

- social;
- constructive;
- artistic expression;
- scientific research.

The author used the following tools to organize education according to these directions:

- word;
- works of art;
- technical devices;
- games;
- labor.

In the educational system of Uzbekistan, in particular, the Socratic question-and-answer method, which is characteristic of problem-based education, has been widely used in schools and madrasas for several centuries. This method has become a factor in the development of intelligence, punctuality and beautiful speech content in students. It is not for nothing that the Socratic question-and-answer method, which has passed the test of centuries, is widely used in practice today as one of the most effective educational methods. In this way, the student has a stronger chance of learning intelligence, deep creative, critical thinking, clear and correct

speaking, fluent and logical speech. One form of Socratic conversations is to bring the student to the process of independent and active thinking, and to intelligently identify the wrong aspects of his thoughts, to encourage them to eliminate them.

A Socratic conversation requires certain steps, and they can be expressed in a simple form:

1. General determination of the student's level of knowledge and thinking ability by means of questions and answers.
2. To make certain changes so that the content of the studied subject is in accordance with the student's interests. For this purpose, examples and samples corresponding to the student's interests and abilities are included in the educational material.
3. Involve the student in active communication. It refers to methods of stimulation.
4. The teacher does not know the solution of the problem and asks questions in sequence.
5. By praising the correct and appropriate thoughts of the student, it gives him the opportunity to think and speak more freely and deeply.
6. The student identifies wrong answers, wrong ideas.
7. Without directly stating the correctness of the opinions expressed by the student, he explains his incorrectness with a logical justification and creates problematic situations. Errors are directed to be corrected by the student himself.

From the observations, it is known that this method leads to a high result. There are certain conditions for this, in addition to the wide and deep knowledge and ability of creative thinking, high communication culture and pedagogical skills are required.

In our era, which is called the age of information technologies, a person is required to take active action, make independent decisions, and adapt to the changing conditions of life. This is inextricably linked to the formation and stabilization of certain qualities in each person. In particular, the student should be able to independently acquire the necessary knowledge, skillfully apply it in solving various problems; effective work on information (collecting the necessary facts for the solution of a particular issue, analyzing them, putting forward hypotheses aimed at solving the problem, identifying laws, new problems that arise, solving them); imagine where and in what situation the acquired knowledge can be used; independent critical thinking, being able to see problems in the world and find optimal ways to solve them; to create new ideas, to have the ability to think creatively; it is necessary to regularly develop skills and competencies on his spirituality, intellectual potential and cultural level.

Not only the content of education, but also the importance of teaching technologies in developing a person with the listed qualities is unique. One of them is problem-based learning technology. Therefore, in the process of problem-based learning, both teachers and learners constantly test their physical, intellectual, and spiritual capabilities to solve educational and practical problems. This process is also of particular importance, because the resulting skills and competencies serve to form the necessary qualities.

The most important requirement for the problematic situation used in the lesson and the problem proposed to the students to solve in accordance with theoretical or practical problems is that it increases the interest of students, at least arouses interest in students. Otherwise, it is impossible to achieve the expected result. The problem should be suitable for the level of knowledge and intellectual capabilities of the students. Assignments aimed at solving a problem

situation are designed to acquire new knowledge, skills, and abilities, or to identify, describe, and clearly express a problem, or to perform a specific practical task.

Students' understanding of the problematic situation is known due to the fact that they can perceive the reasons for its occurrence, at the same time, what these reasons are related to. In this way, the ability to understand gives students the opportunity to express the problem independently. The process of determining the solution to the problem can be divided into 3 stages (see Table 1):

Table 1 Steps to solve the problem

No	The name of the stages	The essence
1.	Proof	It is carried out due to the determination of the relationship of the problem with the causes that were initially considered correct.
2.	Research	This is done by justifying the correctness of the problem being solved as a result of the selected cause.
3.	Explanation	It is carried out on the basis of the identification of reasons that confirm the correctness of the solution to the problem.

There is activation and acceleration of student activity on the basis of problem-based educational technologies. In the essence of problem-based learning technology, it reflects the thinking of a person, that is, starting from solving a problem situation, showing his ability to identify, research and solve problems. After all, problem-based education creates unlimited opportunities for the development of students' creative thinking and creative abilities.

The goal and task of problem-based educational technology is to increase the effectiveness of the educational process in general secondary educational institutions, to create a systematic approach to this process, and to achieve it, teachers are recommended to use the following types of lessons (see Table 2):

Table 2 Lesson types

No	Type of lesson	Content
1.	Lecture	Introductory, thematic and summarizing lectures
2.	Seminar	Consolidation of acquired knowledge, independent acquisition of new knowledge is envisaged
3.	Modular, problematic, controversial	It is intended to organize scientific discussion, conferences and free thinking
4.	Didactic-playful	Educational games: games-exercises, creative, story-role business games, quizzes focused on organization
5.	Test	Didactic handouts, test tasks, automated control programs using information and communication technologies are intended to be conducted with the help of a mutual control sheet.

Their uniqueness is based on the problem situations created during the lesson.

Scientific and technical discoveries by mankind have been made because human thinking has the ability to create problematic situations, pose a specific problem and solve it. Consequently, the application of problem-based teaching technologies to the educational process moves

students from acquiring ready-made knowledge to gradually moving to independent activity, creating discoveries.

Scientifically, there are three types of problem-based education:

1. Creating a problem situation.
2. Setting the problem.
3. Finding a solution to the problem.

In problem-based education, the effectiveness of the pedagogical process can be seen in the provision of educational material in a problematic form, the student's activity, and the connection of education with life, play, and work. Aspects of interest in problem-based educational content include new content, a new look at old knowledge, giving it a new life, students' practical activities, connection with the present, history and the future. The main elements of problem-based learning include the creation of problem situations, the search for ways to create them, the process of solving problems and the practical verification of the correctness of conclusions.

Pupils are given a task that arouses their interest and desire to solve it, but it turns out that their knowledge and experience are not enough, that is, a certain problem arises. They feel an inner need to find a way out of the situation. The feeling of a difficult situation encourages to analyze the situation, to search. There is a conflict between their level of knowledge, which is a cognitive or practical task, and which causes intensive thinking activity.

The method of problem-based education encourages the student to objectively research a specific issue and draw logical, correct scientific conclusions. This relates to the conflict that objectively arises between knowing and not knowing in a problematic situation. Understanding it creates a need for students to seek new knowledge about the conditions and method of completing the task.

As shown in many studies, the types of problem-based learning include problem-based presentation of new knowledge (problem-based lectures), problem-solving tasks (problem-based exercises) and conducting small research projects (problem-based experiments).

As forms of problem-based educational technologies, problem statement, heuristic (socratic) conversation, problem demonstration, research-based practical training, creative assignment, tissue (imaginary) problem experience, thereby forming problem hypotheses, choosing convenient forms of problem solving, problem task and problem games is displayed.

To implement problem-based technology, it is very important to choose relevant tasks, to identify different problem-based learning and take into account its specific features, to create an effective system of problem-based learning and educational, methodical manuals and recommendations, to use a personal-active approach in the educational process, and to have a sufficient level of professional competence of the teacher.

The success of problem-based education depends on the problem-based presentation of educational material, the activation of students' cognitive activities, the combination of teaching with games and work, the teacher's ability to use problem-based methods appropriately and correctly, the ability to create a chain of problem-based questions to solve a problem situation and explain to students in a logical sequence depends on factors such as.

The uniqueness of problem-based education lies in the multiplicity of tasks, that is, in the effective solution of the following tasks: strengthening internal motivation for reading and

learning, increasing interest in learning, forming independence, developing creative abilities, imagination, creating conditions for determining one's place in the professional educational environment, developing communication skills, learning it is manifested in solid mastery, formation of confidence and acquisition of basic skills of research activity.

REFERENCES

1. Law of the Republic of Uzbekistan "On Education" // Perfect generation - the foundation of Uzbekistan's development. - T.: Sharq, 1997.
2. Abdukadirov A. A. New information technologies in general secondary education: content, tools and methods // Proceedings of the Republican scientific-practical conference "Pedagogical and information technologies: achievements and prospects". - T., 2003. - B. 7-14.
3. Aripov M. M., Imomov T. and others. Informatics, information technologies / Study guide. Part 1. - T.: TDTU, 2012.
4. Ismailovich, Toshpulatov Rakhimjon. "Creating computer programs using specific programming languages." international journal of social science & interdisciplinary research ISSN: 2277-3630 Impact factor: 7.429 11.11 (2022): 436-440.
5. Kamalov, A. F. "Pedagogical foundations of improving methodical preparation in the conditions of distance education." TDPU Scientific Information 1.8 (2022): 416-420.
6. Khasanov, A. R. "Development of information competence of future informatics teachers as a pedagogical problem." Open Access Repository 9.12 (2022): 73-79.
7. Xasanov, A. R. (2021, May). Use of modern pedagogical technologies and interactive methods in teaching computer science. In E-Conference Globe (pp. 198-199).