

## USE OF PROBLEM-BASED EDUCATIONAL TECHNOLOGIES IN DEVELOPING THE PEDAGOGICAL INTELLECTUALITY OF FUTURE TEACHERS

**Kholbozarova Nasiba Kholbozar kizi**

Shakhrisabz State Pedagogical Institute Acting Associate Professor of the  
Department of Primary Education Methodology,  
Doctor of Philosophy in Pedagogical Sciences (PhD)

**Annotation.** The article analyzes the effectiveness of problem-based educational technologies in developing the pedagogical intelligence of future teachers. Problem-based education helps students develop independent thinking, analytical and critical decision-making skills. At the same time, in the process of developing pedagogical intelligence, students are prepared for professional activity by creating and solving problem situations. The article considers modern pedagogical approaches, interactive methods, and how the role of the teacher can be enhanced in problem-based education. The results of the study show that the intellectual potential, creative thinking and problem-solving abilities of future teachers are significantly developed using problem-based learning technologies. Therefore, this methodology is recommended for widespread use in higher pedagogical educational institutions.

**Keywords:** pedagogical intelligence, problem-based learning, future teachers, interactive methods, educational technologies, independent thinking, creative approach.

Pedagogical intelligence is considered one of the most important potentials of future teachers in the modern educational process. It serves not only to effectively organize the educational process, but also to optimize the lesson taking into account the individual characteristics of students. Analytical thinking, creative approach, problem-solving and communicative skills play an important role in the structure of pedagogical

intelligence. Therefore, the issue of developing these skills in the process of training future teachers is relevant.

Problem-based learning technologies are widely used as an effective tool in the development of pedagogical intelligence. It develops students' skills in independent thinking, analytical decision-making, and logical resolution of pedagogical situations. By creating problem situations, future teachers gain practical experience and prepare for professional activity. At the same time, this approach encourages students to think creatively, independently form new knowledge, and find innovative solutions.[2]

The integration of problem-based learning technologies in the modern pedagogical process is carried out through interactive methods, case studies, project work, and group discussions. This develops cooperation between students, teaches them to make quick and logical decisions in complex pedagogical situations. Thus, problem-based learning technologies allow for the comprehensive development of the pedagogical intelligence of future teachers and are an effective way to implement an innovative pedagogical approach in higher education institutions.

Pedagogical intelligence is a complex psychological and cognitive potential that includes the knowledge, skills, creative and analytical thinking abilities necessary for the effective implementation of a teacher's professional activities. It serves not only to manage the educational process, but also to optimize education taking into account the individual characteristics of students. Today, the development of pedagogical intelligence is one of the main tasks of higher pedagogical education, as it determines the professional success of a teacher and the ability to work effectively with students.[3]

Pedagogical intelligence structurally includes analytical thinking, a creative approach, problem solving and communication skills. At the same time, it forms the teacher's ability to be prompt, logical and take into account ethical standards in making pedagogical decisions. By developing the intellectual potential of future teachers, they

not only effectively manage the educational process, but also support the ability of students to develop themselves.

Problem-based learning technologies are pedagogical methodologies that stimulate students' active learning processes, direct them to independent thinking, analysis and decision-making. Based on this technology, students have the opportunity to study situations unknown to them, apply existing knowledge and independently form new knowledge.

The main principles of problem-based learning are as follows:

The principle of activity - students should not be just passive recipients of information, but active participants.

The principle of independence - students are given the opportunity to think independently and solve problems.

The principle of decision-making - students learn to choose optimal solutions in different situations.

The principle of critical thinking - students use existing information forms the skills of evaluating problems and drawing new conclusions from them.[4]

Problem-based learning methods are often implemented through situational problems, case studies, discussions, project work, and interactive exercises. This is an important tool in developing the pedagogical intelligence of future teachers.

In the process of forming the intellectual potential of future teachers, problem-based learning provides a number of pedagogical advantages. First, it teaches students to think independently, justify their decisions, and find logical solutions to pedagogical situations. Second, problem-based learning stimulates creative thinking, which increases the teacher's ability to use innovative approaches in the teaching process.[2]

Creating problem situations in the pedagogical process serves to increase the teacher's professional training. For example, solving real pedagogical situations and

complex problems in a training session enriches students' experience and prepares them to effectively conduct future lessons. At the same time, this methodology develops psychological resilience and communication skills in students.

Practical research shows that problem-based learning technologies significantly develop the intellectual and professional skills of future teachers.

For example, through interactive exercises and case-study work, students increase their ability to analyze pedagogical situations, identify problems, and find solutions.[1]

In addition, problem-based learning develops students' skills in independent processing of information, critical evaluation, and finding creative solutions. At the same time, this approach stimulates cooperation and group work among students, since solving complex situations is often carried out taking into account several points of view.

The effectiveness of problem-based learning is assessed by several criteria: active participation of students, the level of independent thinking, the speed of problem solving, and the ability to make innovative decisions. Experimental studies conducted on these criteria show that pedagogical intelligence increases significantly when using problem-based technologies.[5]

Problem-based learning technologies can be effectively integrated with modern pedagogical approaches. For example, through interactive learning tools, electronic resources, and simulation exercises, students learn complex pedagogical situations through experience. In this way, not only theoretical knowledge, but also practical skills are developed.

In conclusion, project work and group discussions increase the effectiveness of problem-based learning. Students increase their intellectual and creative potential by analyzing real pedagogical situations, discussing solutions, and defending their decisions. At the same time, the mentoring role of the teacher is important in the process

of problem-based learning, which serves to correctly guide, motivate, and encourage students to think effectively.

The following recommendations can be made for the effective use of problem-based learning technologies in higher pedagogical education:

Plan lessons based on situational problems - each lesson should develop students' independent thinking and problem-solving skills.

Wide use of interactive methods - students should actively participate through discussions, group work, case studies and project work.

Mentoring and feedback system - teachers should constantly monitor students and guide them in their thinking and decision-making processes.

Integration of innovative technologies - creating problem situations and testing solutions through electronic platforms, virtual laboratories and simulation programs.

Improving the assessment system - assessing students' intellectual and pedagogical skills not only by the level of knowledge, but also by the criteria of problem solving and creative approach.

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