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PROBLEM-ORIENTED EDUCATIONAL TECHNOLOGIES IN DEVELOPING CRITICAL THINKING COMPETENCES OF FUTURE TEACHERS

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Abstract
This article analyzes the role and effectiveness of problem-oriented educational technologies in developing critical thinking competencies of future teachers. The importance of critical thinking in the modern educational process, mechanisms for activating educational activities through problem situations , based on the results of pedagogical experiments and scientific research, are highlighted. The article presents the didactic foundations of problem-based education, the interaction between teacher and student activities, the compatibility of the competency-based approach and educational technologies with well-founded arguments.

Keywords: Critical thinking, problem-based learning, pedagogical technologies, future teacher, competence, reflection, didactic process.

Introduction

Abstract
V state analiziruetsya rol i effektivnost tekhnologii obucheniya, orientirovannogo na reshenie problem, v razvitii kriticheskogo myshleniya budushchih uchiteley. Osveshchaetsya znachenie kriticheskogo mishleniya v sovremennom nom obrazovatelnom protsess, mechaniznyi activizatsii uchebnoy deyatelnosti studentsov cherez problemnye situatsii, pedagogicheskiy

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opyt i resultaty nauchnyx issledovaniy. V state predstavleny didakticheskie osnovy problemnogo obucheniya, vzaimodeystvie deyatelnosti prepodavatelya i studenta, kompetentnostnyi pokhod i integratsiya obrazovatelnyx tehnologiiy, podkreplyonnye dostovernymi dannymi.

Klyuchevye slova: kriticheskoe mishlenie, obuchenie, orientirovannoe na reshenie problem, pedagogicheskie tekhnologii, budushchi uchitel, competence, reflection, didakticheskу process.

Introduction

Globalization and of information sharp fast in the meantime increasing progress under the circumstances future from the teachers not only knowledge to occupy, perhaps them analysis to do, compare, argue, conclude, solve problems solution to do such as skills demand This is being done. of the process in the center critical thinking competence formation It stands. Critical thinking — of the individual to the information critical approach, its reliability assessment, decision acceptance in doing reasonable from thoughts use to receive that means. skills of the 21st century. Therefore, in the process of developing the professional competencies of future teachers in the higher pedagogical education system**, problem-based learning technologies (Problem Based Learning – PBL)** are gaining special importance. Such technologies help the student to transform from a passive participant in the educational process into an active subject.

This article details the theoretical foundations of problem -based learning, its impact on critical thinking competence, experimental results, and methodological recommendations.

Literature Analysis

An analysis of the scientific literature on critical thinking and problem-based learning technologies shows that research in the field has been conducted mainly in two main areas: the first is the theoretical foundations of critical thinking and

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its pedagogical significance; the second is the effectiveness of problem-based learning technologies and the methodology for their practical application.

On the development of critical thinking in higher pedagogical education . For example, Paul and Elder (2014) emphasize the need to develop mechanisms for systematic teaching and assessment of critical thinking. They argue that critical thinking competence is formed not only by acquiring knowledge, but also by developing the skills of analyzing thoughts, reasoning, making decisions and solving problems . At the same time, Ennis (2011) identifies criteria for assessing critical thinking and describes effective methods for its application in the pedagogical process .

Problem -Based Learning (PBL) technology is based on the work of researchers such as Barrows and Tamblyn (1980), Savin-Baden (2000), and Hmelo-Silver (2004). Their research shows that problem-based learning encourages students to explore and think independently, develops skills for solving complex situations, and significantly develops critical thinking. At the same time, the results obtained by students confirm the high effectiveness of problem-based learning methods compared to traditional lessons.

Local research, in particular, in higher pedagogical educational institutions of Uzbekistan, also supports this direction. For example, the works of the authors Abduvaliyeva (2018) and Qodirov (2020) detail the importance of methods of working with future teachers in problem situations, case studies, and interactive educational activities in developing critical thinking. Their research confirmed that organizing students ' activities in the educational process through problem situations is the most effective way to form critical thinking skills.

The methodological literature (Johnson & Johnson, 2017; Savery, 2006) also notes the importance of interactive methods, group discussions, debates, and reflective activities in developing critical thinking. These approaches help to develop not only logical thinking and reasoning, but also creative and social competencies in future teachers.

In conclusion, the literature review shows that problem -based learning technologies can be widely used as a basic, effective and modern pedagogical approach in the development of critical thinking. At the same time, research

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suggests that students can acquire competencies through personal activity, a reflective approach and collective discussions. Therefore, the systematic use of PBL and interactive methods in practical pedagogical activities significantly increases the quality of future teacher training.

The content and theoretical foundations of critical thinking competence

Critical thinking is interpreted differently by different academic schools. In general, it consists of the following components:

1. Distinguishing between facts and opinions.
2. Data analysis and classification.
3. Comparing and evaluating evidence.
4. To draw an independent conclusion.
5. Making the right decisions in unexpected situations.
6. Be able to ask valid questions and present arguments.

In pedagogical literature, critical thinking competence is recognized as a key skill for a teacher's professional activity, because a teacher is not a provider of knowledge, but a person who manages and guides the thinking process of students.

Problem -oriented educational technologies.

Problem -based learning (PBL) is a pedagogical technology that requires free thinking, research, and creativity of the student. Its main characteristics are:

- Creating a problematic situation;
- Understanding the problem and analyzing it;
- Promoting proposals;
- Developing evidence-based solutions;
- Evaluate and reflect on the results.

In problem-based learning, the teacher does not provide ready-made knowledge, but guides the student's independent learning process. This process strengthens logical thinking, analytical analysis, creativity, and reflective approach in students.

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The role of problem-based learning in developing critical thinking

Problem-based learning serves to develop all elements of critical thinking. Including:

Questioning and problem-solving skills . The student asks deep questions to understand the essence of the problem, which is the first step in a critical approach.

Finding and examining evidence. In the process of finding a solution to a problem, students analyze facts and assess their reliability.

Comparing and justifying solutions . Students compare several options and choose the most appropriate one.

Evaluation and reflection . Problem situations allow students to critically evaluate their own thinking. Therefore, problem-based learning methods are one of the most effective didactic tools for developing critical thinking skills .

Experimental work with future teachers

The practical part of the study involved 120 students studying pedagogy. They were divided into experimental and control groups .

used in the experimental group :

- Lessons based on problem situations;
- "Brainstorming", "Cluster", "Fishbone", "Debate", "6x6x6" methods;
- Practical case studies;
- Reflective analyses.

used in the control group:

- Traditional lecture and seminar sessions .

Results

At the end of the experiment, the students' critical thinking level was assessed according to 8 indicators :

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Indicator	Control group (%)	Experimental group (%)
Questioning skills	42	78
Proof	37	74
Comparison	44	81
Logical analysis	39	76
Independent conclusion	46	83
decision making	41	79
Reflection	38	82
Problem solving	40	85

The results show that the use of problem-based learning technologies increased the level of critical thinking **by at least 30–40%** .

Pedagogical advantages of problem-based learning:

1. Encourages students to explore.
2. the ability to express personal opinions .
3. It allows for a deep understanding of the topic.
4. It forms a culture of collective thinking.
5. Increases creativity.
6. the right decisions in practical situations .
7. Strengthens communicative competencies.

Didactic conditions of problem-based learning in the formation of critical thinking:

- **A clear statement of the problem situation** - the topic should arouse the student's interest.
- 's **independent thinking activity** should be guided by the teacher .
- **The ability to work with information resources** - electronic resources, cases, video lessons.
- **Teamwork** — group discussions enhance critical thinking.
- **Reflective activity -** evaluating the results after each lesson .

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•**Motivation and encouragement** - creating conditions for active student participation.

Methodological recommendations for developing critical thinking in future teachers:

- Regularly use problem situations in lessons.
- Assign independent research tasks to students.
- Integrate case study, debate, and project methods.
- Keeping reflective diaries during the learning process.
- Use of multimedia and interactive platforms.
- Use competency-based criteria in the assessment process .
- Involving students in research activities.

Conclusion

Problem -oriented educational technologies are one of the most effective methods for developing critical thinking competencies in future teachers. The results of the study showed that these technologies significantly increase students' thinking activity, creative potential, and independent decision-making skills. The widespread introduction of a problem-based approach in higher education is an important factor in improving the quality of pedagogical personnel.

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