



METHODS FOR DEVELOPING PEDAGOGICAL SKILLS IN MODERN EDUCATION

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ABSTRACT

In today's rapidly evolving world of science and technology, it is crucial for educators to meet modern standards and expectations. Pedagogical skills are considered a key factor that defines a teacher's professional competence and potential in their activities. This article analyzes the main methods of developing pedagogical skills within the modern educational system and evaluates their effectiveness. In particular, it addresses the development of teachers' professional expertise, increasing student engagement in the learning process, and the effective use of interactive methods and modern information and communication technologies. Special attention is given to forming pedagogical competencies through interactive teaching methods, problem- and project-based approaches, the use of information technologies, learning from mentoring experiences, and modeling techniques. The practical aspects of these methods and their impact on the quality of education and teachers' professional potential are thoroughly examined. Additionally, the article provides insights into the latest innovations in teaching methodologies and the emerging modern pedagogical approaches based on them.

INTRODUCTION

In the 21st century, the content and forms of the educational process are undergoing fundamental changes. Digital technologies, innovative methodologies, and modern pedagogical approaches demand high professional competence, adaptability, and continuous self-development from educators. In particular, the formation and development of pedagogical skills have become a pressing issue in the modern education system. These skills not only enhance the effectiveness of the teaching process but also contribute to the development of students' abilities such as independent thinking, problem-solving, and teamwork. This article analyzes the importance of applying modern methods such as interactive teaching techniques, project- and problem-based approaches, the use of contemporary information technologies, and learning from mentors in the development of pedagogical competencies.

LITERATURE REVIEW AND METHODOLOGY

Improving the professional qualifications of educators is one of the most pressing issues in the modern education system. The rapid development of technology, changing student needs, and evolving educational approaches require teachers not only to update their existing knowledge but also to acquire new competencies. Therefore, it is essential for educators to regularly participate in professional development courses, practical workshops, training sessions, and to master modern teaching methods. In today's education system, one of the key objectives is to develop the learner's personality—to shape them into active thinkers, independent decision-makers, and effective problem-solvers. In this regard, the role of interactive teaching methods is invaluable. Unlike traditional methods, interactive approaches foster active communication between teacher and student and are based on the principle of co-constructing knowledge rather than unidirectional transmission.

In the 21st century, the digital transformation of the education system has become one of the most critical directions. The rapid development of information and communication technologies (ICT) requires educators to effectively integrate modern technologies into the teaching process. Today, technology is not only a means of transmitting knowledge but also a powerful pedagogical resource that transforms learners into active participants in the learning process.

Furthermore, in developing countries, educational approaches such as Objective-Based Learning, Competency-Based Learning, and Problem-Based Learning (PBL) are being increasingly emphasized to enhance students' practical skills. These methods aim to improve learners' abilities to solve real-life problems. They not only focus on knowledge acquisition but also foster students' understanding of real-world contexts, their ability to find practical solutions, and express their ideas clearly.

A meta-analysis conducted by Lu Zhang and Yan Ma (2023), based on 66 experimental studies, revealed that project-based learning significantly improves students' academic performance, emotional engagement, and critical thinking skills compared to traditional methods. PBL was found to be most effective during 9–18-week instructional periods and in small groups of 4–5 students.

Another meta-analysis by Balemén and Keskin (2018) indicated that PBL is 86% more effective than traditional teaching methods, particularly in subjects such as physics, chemistry, and biology. In a separate study by Guo et al. (2020), PBL was shown to be effective in higher education for deepening students' knowledge, developing practical skills, and enhancing self-assessment abilities. In the development of pedagogical skills and competencies in modern educators, learning from mentors plays a significant role. "Learning from mentors" refers to the ongoing process in which an experienced specialist (mentor) provides guidance, advice, and imparts knowledge and skills to a novice or less experienced individual (mentee). This form of education is based on a teacher-learner model and typically takes place outside formal classroom settings, in more practical, real-world environments. At the Illinois Mathematics and Science Academy (IMSA), the inquiry-based learning model has been effectively implemented. This model encourages students to think independently, solve problems, and apply creative approaches. It has proven particularly effective in preparing students for real-life situations through mentorship and modeling methods.

In modern education, transforming theoretical knowledge into practical skills is a pressing issue. In this context, the modeling method holds particular significance. Modeling is a method that allows for the replication, analysis, and testing of real pedagogical situations, classroom processes, or professional activities in simulated conditions. Through this approach,

students or educators can develop their professional skills in a safe and controlled environment.

In recent years, the education system has undergone significant global changes. Traditional methodological approaches are being replaced by modern, innovative, and learner-centered methods. These changes are reflected not only in the form of the learning process but also in its content, assessment systems, and the nature of teacher-student interactions.

This study aims to examine the practical effectiveness of modern methods focused on developing pedagogical skills. A combination of qualitative and quantitative approaches was employed during the research process. The main methods used included observation, surveys, interviews, and a pedagogical experiment.

The research sample consisted of third-year undergraduate students from Shahrisabz State Pedagogical Institute. During the experiment, one group received instruction using interactive methods, problem- and project-based approaches, ICT tools, and mentorship-based learning. Meanwhile, the control group was taught using traditional methods. Before and after the experiment, students' knowledge levels, pedagogical skills, and degree of professional reflection were assessed based on specially developed criteria. The collected data were statistically analyzed to determine the effectiveness of the applied methods.

RESULTS

During the study, a comparative analysis was conducted between the experimental and control groups. At the beginning of the experiment, both groups demonstrated similar levels of pedagogical skills and knowledge. However, by the end of the experiment, students who had been taught using interactive methods showed significantly higher performance in terms of knowledge acquisition, communication skills, lesson planning, and the ability to express their thoughts clearly.

Statistical analysis (t-test) revealed that the improvements in the experimental group were significantly higher than those in the control group ($p < 0.05$). In particular, lessons conducted through project-based approaches and mentorship led to a marked increase in students' engagement, initiative, and level of professional reflection.

Through surveys and interviews, it was found that students felt more at ease during interactive lessons, actively participated in class, and acquired numerous practical skills through group work and exchanging ideas. This highlights the effectiveness of modern methods in developing pedagogical competencies.

CONCLUSION

The results of the study indicate that modern teaching methods—specifically, interactive teaching, problem- and project-based approaches, the use of information and communication technologies, learning from mentors, and modeling—play a crucial role in developing pedagogical skills. These methods serve as effective tools in enhancing student engagement, fostering independent thinking, and promoting professional reflection.

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