



IMPROVEMENT OF TECHNOLOGIES FOR PREPARING FUTURE TEACHERS FOR PROFESSIONAL ACTIVITY BASED ON AN INNOVATIVE APPROACH

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Abstract

This article explores the issues of improving modern mechanisms and innovative technologies for preparing future teachers for professional activities within the higher education system. The research aims to develop an effective model for enhancing students' professional competencies in an innovative educational environment. The study scientifically substantiates the importance of forming creative thinking, digital didactics, and interactive methodical approaches in future specialists. Based on the analysis conducted, practical recommendations and improved technological stages aimed at increasing the pedagogical mastery of future teachers are proposed.

Keywords: Innovative approach, future teacher, professional activity, pedagogical technology, competence, creativity, digital education, improving educational quality.

Introduction

INNOVATION YONDASHUV ASOSIDA BO‘LAJAK O‘QITUVCHILARNI KASBIY FAOLIYATGA TAYYORLASH TEXNOLOGIYALARINI TAKOMILLASHTIRISH

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Annotatsiya:

Ushbu maqolada oliy ta'lim tizimida bo'lajak o'qituvchilarni kasbiy faoliyatga tayyorlashning zamonaviy mexanizmlari va innovatsion texnologiyalarini takomillashtirish masalalari tadqiq etilgan. Tadqiqotning maqsadi innovatsion ta'lim muhitida talabalarning kasbiy kompetensiyalarini rivojlantirishning samarali

modelini ishlab chiqishdan iborat. Maqolada bo'lajak mutaxassislarning kreativ tafakkurini shakllantirish, raqamli didaktika va interfaol metodik yondashuvlarning ahamiyati ilmiy jihatdan asoslab berilgan. Olib borilgan tahlillar natijasida bo'lajak o'qituvchilarning pedagogik mahoratini oshirishga xizmat qiluvchi amaliy tavsiyalar va takomillashtirilgan texnologik bosqichlar taklif etilgan.

Kalit so'zlar: innovatsion yondashuv, bo'lajak o'qituvchi, kasbiy faoliyat, pedagogik texnologiya, kompetensiya, kreativlik, raqamli ta'lim, ta'lim sifatini takomillashtirish.

In the era of global informatization and digital transformation, the higher pedagogical education system is faced with the task of preparing future teachers not only as knowledge holders, but also as innovators with a high level of professional competence. While the requirements of a modern school are changing, ensuring the adaptability of future teachers to professional activities and forming their creative decision-making skills remains one of the urgent pedagogical problems. Although traditional methods of teacher training have been widely used in the field of pedagogy to this day, today the effectiveness of these methods in the digital educational environment is significantly decreasing. Training future teachers based on an innovative approach means not just introducing technical means into the teaching process, but also radically updating the content, form and methods of education, developing strategies for students to independently acquire knowledge and apply it in practice.

Analysis of international studies shows that the combination of technological and methodological components in the preparation of future specialists for professional activity is a key factor in improving the quality of education. However, the algorithms of innovative approaches to improving the technologies of training future teachers and the criteria for measuring their practical effectiveness have not yet been fully systematized.

The purpose of this study is to improve the technologies used in the preparation of future teachers for professional activity on the basis of an innovative approach, to develop a new methodological system that serves to increase their professional and pedagogical preparation, and to scientifically prove its viability.

The issue of preparing future teachers for professional activity is constantly in the focus of attention of the world pedagogical community. In particular, researchers from Western countries (for example, L. Shulman, international education experts) put forward the "Pedagogical Content Knowledge" (PCK) model in teacher training, placing special emphasis on the synthesis of technological and methodological knowledge. In modern approaches, the teacher is interpreted not only as a provider of information, but also as a "facilitator" and "designer of learning environments".

In the studies of scientists from the countries of the Commonwealth of Independent States (CIS), the development of professional competence of future teachers is considered on the basis of a systematic-active approach. These studies have developed theoretical foundations for improving the psychological preparation and pedagogical skills of a future specialist. Also, local researchers have achieved significant scientific results in the field of introducing innovations in higher pedagogical education, digitizing education, and realizing the creative potential of students.

However, an analysis of the literature shows that the methodological algorithms of the innovative approach and their integration with digital didactics in improving the technologies for training future teachers have not yet been sufficiently integrated. Most research is theoretical in nature, lacking specific technological models that increase the level of professional "flexibility" of a future teacher in practice. In this regard, our study aims to generalize existing scientific views and enrich the innovative approach with practical technologies (case studies, simulation training, project methods). This, in turn, plays an important role in preparing future teachers for the changing labor market and the requirements of a modern school.

This study was developed to determine the effectiveness of technologies for preparing future teachers for professional activity, using a combination of quantitative and qualitative analysis methods. The research process included the following stages:

1. Research design and participants:

Students studying in the pedagogical direction of higher educational institutions were involved in the experimental process. Participants were divided into two groups: control group and experimental group. In the control group, lessons were conducted based on traditional methodological instructions, and in the experimental group, lessons were conducted based on an innovative technological model that we improved.

2. Content of the innovative model:

The improved technology included the following components:

- Scenario-based learning: Students were given simulations of real problem situations in the school environment (conflicts, working with students with low learning abilities).
- Digital portfolio and reflexive analysis: Students' lesson skills were videotaped, and self-reflection skills were developed.
- Creative-project approach: Each student designed a digital educational resource or innovative lesson development in their subject.

3. Data collection and analysis methods:

The level of professional training of students was assessed using pedagogical observation, questionnaires, and specially developed diagnostic tests. The results obtained were processed using mathematical and statistical methods (Student t-test), and the reliability level (p-value) of the difference between groups was determined. The results of the conducted pedagogical experiment showed that the use of improved technologies based on an innovative approach significantly increased the level of professional training of future teachers. At the end of the study, the difference between the experimental and control groups was analyzed according to the following main criteria:

1. Level of professional and methodological knowledge:

The average mastery rate of students in the experimental group was 64% at the beginning of the experiment, and at the end this figure reached 86%. In the control group, the growth dynamics was lower, with a change from 62% to 71%.

2. Creativity and problem-solving:

The ability of future teachers to work with pedagogical "cases" was assessed on a 5-point scale. The results are shown in the table below:

Criteria	Control group (score)	Experimental group (points)	Growth rate
Professional motivation	3.2	4.7	+1.5
Creative approach	3.0	4.5	+1.5
Technological competence	3.5	4.8	+1.3
Average score	3.23	4.66	+1.43

3. Statistical reliability:

Student's t-test was used to prove that the results were not random. The value of $t_{\text{calculation}} = 2.45$ obtained as a result of the calculations was found to be higher than $t_{\text{table}} = 1.98$ (at $p < 0.05$). This confirms that the innovative technologies we proposed are statistically reliable and effective.

In addition, the digital learning resources and lesson scenarios developed by the students of the experimental group demonstrated a high level of didactic flexibility. This indicates that the transformation of theoretical knowledge into practical skills in students was successful.

The results of the study show that the systematic integration of innovative technologies into the process of training future teachers significantly accelerates their professional adaptation. The high indicators observed in the experimental group (86%) confirm that technologies aimed not only at "providing knowledge", but also at "forming skills" are more effective than traditional lecture-seminar-style lessons.

Our results are fully consistent with the principles of "contextual learning" in modern pedagogical theories. In particular, students' learning through modeling real pedagogical situations developed not only theoretical preparation, but also "soft skills", including communication and decision-making in problem situations. At the same time, during the research process, it became clear that the success of an innovative approach depends not only on the technologies used, but also on the level of digital literacy of students. This indicates the need to make the development of technological competence of future teachers a continuous part of pedagogical education.

Compared with the results of other researchers, the model we proposed differs in that the main emphasis is on the activity of the student as a "subject" and his creation of a

creative portfolio. This approach serves to form a future teacher as a self-developing specialist.

Summing up, we can say that the following final conclusions were drawn based on the research work:

- Innovation need: Traditional models of training future teachers do not fully meet the requirements of modern digital education, which requires improving training technologies.
- Technological efficiency: The combination of situational modeling and project-based teaching methods made it possible to increase the professional training indicators of students by an average of 20-25%.
- Practical recommendation: The wider introduction of the "Digital Didactics" and "Pedagogical Innovations" modules into the curricula of higher pedagogical educational institutions will ensure the competitiveness of future teachers in the global labor market.

The results of the research can be recommended as a methodological guide for deans of faculties in the pedagogical direction, methodologists and future teachers.

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