

## THE ROLE OF INNOVATIVE TECHNOLOGIES AND THE CLUSTER APPROACH IN TRAINING MODERN TEACHERS

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### Abstract

This article examines the theoretical and practical aspects of developing innovative competence among future teachers within the modern educational system. It explores the integration of the cluster approach into the educational process, the pedagogical effectiveness of innovative technologies, and the importance of creative and critical thinking in teacher training. The study also highlights the role of teachers' speech culture, personal development clusters, and creative activities in shaping innovative competence.

**Keywords:** Innovative competence, cluster approach, pedagogical technologies, creative thinking, critical thinking, professional development, speech culture, modern education.

### Introduction

In the 21st century, the education system is undergoing rapid modernization processes. Innovation, technological advancement, the expansion of the global information space, and changes in the labor market necessitate the introduction of new methodologies in the training of pedagogical personnel. One of such approaches is the cluster approach, which aims to optimize the educational process based on the integrated and mutually beneficial cooperation of various stakeholders.

The innovative approach enhances the effectiveness of pedagogical education and serves as an important factor in developing the intellectual competence of future teachers. Modern technologies and interactive methods foster creativity and critical thinking among educators, helping them adapt to contemporary educational requirements. Research confirms that the use of innovative technologies increases students' active engagement with learning materials and strengthens their motivation to generate new pedagogical ideas.

The term “*innovation*” originates from Latin and means “renewal” or “bringing in something new.” In education, innovation refers to the creation and implementation of new ideas aimed at improving the form and content of the teaching–learning process. Today, innovative ideas are rapidly being integrated into educational practice. Pedagogical innovations play a key role in improving the quality and effectiveness of education.

It should be noted that any process of renewal and reform in society is inherently linked to transformations occurring within the education system. The continuous updating of state educational standards, the improvement of textbooks, educational-methodical resources, curricula, and classification systems in various fields of education stimulate the development of new pedagogical concepts. Such advancements further accelerate the penetration of





pedagogical innovations into different areas of education and the entire system of lifelong learning.<sup>1</sup>

The use of innovative technologies should not be limited solely to delivering knowledge; rather, it should contribute to the development of learners' creativity, independence, and critical thinking skills. In shaping a competent teacher, the development of their moral and ethical qualities holds special importance, as these attributes play an invaluable role in the personal growth of young learners.

A teacher's innovative competence is not confined to mastering technologies alone; it is directly linked to personal competencies such as communicative and speech culture. A future teacher must first of all pay close attention to their speech culture. Their speech must be fluent, clear, meaningful, and logically structured. This is because speech and the words within it serve as a powerful psychological tool that significantly influences human emotions and behavior. The accurate expression of meaning, the appropriate use of tone and style further enhance the effectiveness of speech.

In particular, the ability to influence a child through speech during communication greatly increases the effectiveness of the educational process. Meaningful educational activities that consider each learner's potential and individual characteristics are the ones that produce the expected outcomes. In this sense, it is fair to state that the success of professional pedagogical activity is directly related to the teacher's speech culture.<sup>2</sup>

In the future, the widespread implementation of innovative technologies and the continuous training of teachers in innovative approaches will create greater opportunities for improving the quality of education. Therefore, the development of innovative pedagogical approaches is one of the key factors in enhancing the education system and aligning it with international standards. Innovative competence is a multifaceted concept that plays a significant role in the professional preparation of modern teachers. It reflects a teacher's readiness and ability to generate new and useful ideas, integrate them into the educational process, update existing practices, and adapt them to contemporary requirements. This competence includes several components, such as research and inquiry skills, analytical thinking, creativity-based idea generation, experimentation with innovative practices, unconventional problem-solving, and openness to change. Thus, innovative competence is considered one of the fundamental factors in the professional development of teachers and in introducing effective improvements into the educational process.

The development of innovative competence in future teachers is a continuous process that is carried out through various activities and organizational conditions. These include:

- studying modern digital technologies and applying them in the teaching process;
- fostering creative thinking and encouraging openness to innovation among learners;
- strengthening critical thinking through the analysis of problem-based situations;

1 U.M.Ismatova, Q.T.Boltayeva "Innovatsion pedagogik texnologiyalar". <https://kopilkaurokov.ru/>. Сайт для учителей.

2 Saydullayeva Gulasal Umidjon qizi "Innovatsion yondashuv asosida bo'lajak pedagoglarning intellektual kompetentligini rivojlantirish ahamiyati" Yangi O'zbekiston pedagoglari axborotnomasi IF: 5.141 Volume 3 Issue, 01 YOPA 57-57b.



- regularly studying scientific sources and keeping up with new developments;
- actively participating in innovative events such as seminars, conferences, and trainings;
- engaging in collaboration with pedagogical teams and exchanging experiences;
- testing new methodological approaches to improve the curriculum.<sup>3</sup>

These factors contribute to the formation of innovative thinking in future teachers and accelerate their professional adaptation. Professional mastery is not a one-time achievement; rather, it requires continuous self-improvement, self-development, and the assimilation of new ideas. The self-development cluster serves as a connecting element between methodological, personal, and professional competencies and includes the following aspects:

- critically analyzing one's own activities;
- studying new scientific and methodological practices;
- experimenting with new approaches through practical application;
- ensuring consistent professional and personal growth.

This process strengthens the teacher's innovative potential and enhances the effectiveness of their professional activity.

The professional development of future teachers is not limited to theoretical knowledge; on the contrary, it is refined through practical experience, the implementation of innovative ideas, and the introduction of new approaches into the teaching process. From this perspective, it is essential for higher education institutions to widely apply innovative technologies, integrate competencies based on a cluster approach, and strengthen practice-oriented activities. This process supports the development of innovative competencies in future teachers and significantly accelerates their professional adaptation.

The high social significance of pedagogical education in the sustainable development of society, along with the need to meet modern requirements and address existing challenges in the system, necessitates strengthening the interconnection between scientific research and educational institutions. Therefore, transitioning to cluster-based development of continuous pedagogical education is becoming increasingly important.

The innovative cluster of pedagogical education refers to the integrated functioning of all levels of the continuous education system, research institutes and centers, practice sites, and scientific and methodological structures within a unified system. The interconnected and task-distributed cooperation among these components creates opportunities to elevate the quality of pedagogical education to a new level.

The main objective of this cluster is to integrate the educational, scientific, and innovative potential within its structure in order to prepare specialists who possess not only strong civic and professional competencies but are also competitive, open to innovation, and capable of designing and implementing modern educational programs and technologies.<sup>4</sup>

3 Jumanova Fatima Uralovna “Bo‘lajak o‘qituvchilarda innovatsion kompetentlikni oshirishning pedagogik ta’limiy muhitini yaratish”// International scientific and practical conference “Economics, management and digital innovation in education: modern trends and approaches” March 13, 2024 <https://doi.org/10.5281/zenodo.10810111. 847-850b>.

4 G‘.I.Muhamedov “Pedagogik ta’lim innovatsion klasteri: ehtiyoj, zarurat, natija”// Xalq so’zi. <https://xs.uz/uz.2019>.



The cluster-based development system of pedagogical education operates in general areas such as organizing the educational process, creating instructional materials, enhancing the scientific capacity of pedagogical staff, and ensuring the continuity of education and upbringing. At the same time, these general directions become more specific through particular tasks such as managing the education system, ensuring integration between different stages and fields of education, and improving teaching methods and tools.

Overall, the cluster approach and competence-based training represent a new paradigm in modern pedagogical education, providing important opportunities for improving the quality of education and developing the professional potential of teachers.

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