



PAPER

## THEORETICAL FOUNDATIONS FOR DEVELOPING METHODOLOGIES OF INTEGRATING GENERATIVE ARTIFICIAL INTELLIGENCE TECHNOLOGIES INTO ENGLISH LANGUAGE TEACHING IN HIGHER EDUCATION

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### Abstract

This article examines the theoretical and practical aspects of developing creative thinking competencies of future primary education teachers through innovative technological tasks. The study identifies the content and structural components of creative thinking competence and substantiates pedagogical mechanisms that ensure its effective development. The didactic potential of innovative technological tasks is revealed as a means of enhancing independent thinking, problem-solving skills, and the ability to apply non-standard approaches in professional activity. The research findings contribute to improving the professional training of future primary education teachers and serve as a basis for developing methodological recommendations aimed at fostering creativity in teacher education.

**Key words:** creative thinking, competence, innovative technological tasks, primary education, future teacher, pedagogical mechanisms.

### INTRODUCTION

In the context of contemporary globalization and rapid digital transformation, enhancing the quality indicators of the education system particularly the improvement of teacher training processes has

emerged as one of the most pressing scientific and pedagogical challenges. Ongoing curricular and technological innovations within the educational process require future teachers working at the primary education level not only to possess solid

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theoretical knowledge, but also to demonstrate a high level of creative thinking, adaptability, and innovative pedagogical approaches. This is primarily due to the fact that the professional competencies formed in primary school teachers have a direct and lasting impact on learners' subsequent intellectual and creative development. From this perspective, the development of creative thinking competencies in future primary education teachers is increasingly recognized as a strategic priority within the education system. Creative thinking reflects a teacher's capacity to design the educational process, analyze problematic situations, and make effective pedagogical decisions based on non-standard and innovative solutions. In this regard, the use of innovative technological tasks serves as a significant pedagogical factor that enhances the overall effectiveness of the teaching and learning process.

## LITERATURE REVIEW

In scientific and pedagogical research, the issue of developing creative thinking competence is interpreted in close connection with an individual's intellectual and professional development. In particular, J.Guilford associates creative thinking with divergent thinking, defining it as an individual's ability to generate multiple alternative and original solutions to a single problem. According to Guilford, the use of problem-based and open-ended tasks in the educational process contributes significantly to the activation of creative thinking. This approach serves as an important methodological foundation for developing creative thinking competencies in future teachers through innovative technological tasks.

In the scientific views of E.Torrance, creative thinking is interpreted as an individual's ability to identify problems, analyze them, and propose original solutions. The scholar substantiates that creative potential can be developed through creative tasks, project-based activities, and reflective learning practices within the educational process. Torrance emphasizes that the systematic implementation of innovative tasks in pedagogical activity fosters independent thinking and creative decision-making skills in future teachers.

According to L.S.Vygotsky's cultural-historical approach, intellectual and creative development

occurs through social interaction and purposeful activity. The scholar highlights the crucial role of problem-based situations and collaborative learning in the development of creative thinking. From this perspective, collaborative activities organized through innovative technological tasks represent an effective mechanism for enhancing creative thinking competence in future primary education teachers. Within the framework of the constructivist approach, J.Bruner argues that creative thinking develops most effectively when learners actively construct knowledge through discovery. He asserts that project work, inquiry-based tasks, and problem-oriented learning elements significantly enhance creative pedagogical thinking. This theoretical position provides a solid foundation for designing innovative technological tasks aimed at developing creative competencies.

R.Sternberg links creative thinking to intellectual flexibility and the ability to make innovative decisions. According to the scholar, tasks based on modeling real pedagogical situations and reflective analysis play a crucial role in developing teachers' creative competencies. This viewpoint further justifies the necessity of using innovative technological tasks in preparing future primary education teachers for professional practice. The works of national pedagogical researchers also interpret the development of creative thinking competence in close connection with modern educational technologies. In particular, Uzbek scholars emphasize that the use of project-based learning, interactive methods, and digital tasks in the educational process serves as an essential pedagogical condition for enhancing future teachers' creative thinking. According to their findings, innovative technological tasks contribute to the formation of professional independence, reflective thinking, and creative pedagogical approaches among students.

The analysis of the above scholarly perspectives demonstrates that innovative technological tasks possess significant methodological and practical value in developing creative thinking competencies in future primary education teachers. The ideas advanced by both international and national researchers confirm the scientific validity of the present research topic and substantiate the necessity of improving mechanisms for fostering

creative thinking in teacher education.

## ANALYSIS AND RESULTS

An analysis of scientific and pedagogical research indicates that creative thinking competence represents a complex integrative quality that reflects an individual's creative potential. It is characterized by the aspiration to generate new ideas, the ability to demonstrate flexibility in problematic situations, and the capacity to develop original approaches within pedagogical activity. For future primary education teachers, creative thinking competence constitutes one of the key factors ensuring effectiveness in professional practice.

This competence is manifested through the following interrelated structural components:

Motivational–communicative component – reflects the future teacher's need for creative activity, professional interest, and readiness to demonstrate creative initiative in pedagogical communication;

Cognitive component – involves the creative processing of pedagogical, psychological, and methodological knowledge and the ability to apply it flexibly in practical situations;

Activity–practical component – ensures the formation of creative experience, independent decision-making skills, and the ability to effectively resolve pedagogical situations through the completion of innovative technological tasks;

Reflective component – represents the ability to analyze one's pedagogical activity, evaluate outcomes, and consciously plan professional development. The systematic and harmonious development of these components contributes to the effective formation of creative thinking competence in future primary education teachers.

Innovative technological tasks constitute a set of didactic tools aimed at developing creative thinking in future teachers within the modern educational process. Such tasks are implemented through the modeling of problem-based situations, the application of interactive methods, the integration of digital educational resources, and the organization of project-based activities. The primary pedagogical value of these tasks lies in their ability to enhance student engagement, foster independent thinking and decision-making

skills, and create opportunities for integrating theoretical knowledge with practical activity. Practical experience demonstrates that instructional activities organized on the basis of case studies, project work, reflective tasks, and digital didactic models significantly intensify students' creative thinking activity. As a result, future primary education teachers develop non-standard and creative approaches to addressing pedagogical situations.

Based on the research findings, it was determined that the development of creative thinking competencies in future primary education teachers can be effectively achieved through the following key mechanisms:

Creating a problem-based educational environment – organizing pedagogical situations and problem tasks that stimulate creative thinking;

Systematic implementation of innovative technological tasks – orienting the content of instructional activities toward creative engagement;

Ensuring an integrative approach – establishing a close connection between theoretical knowledge and practical activity;

Developing pedagogical reflection – promoting self-assessment, analysis, and professional growth;

Organizing collaborative activities – implementing collective creative projects and teamwork-based learning.

These mechanisms elevate the professional training of future teachers to a qualitatively new level. In conclusion, the development of creative thinking competencies in future primary education teachers through innovative technological tasks represents one of the essential conditions for enhancing the effectiveness of modern pedagogical education. The research findings confirm that the systematic and goal-oriented application of such tasks contributes to the formation of creative thinking, professional independence, and innovative pedagogical approaches in future teachers. Therefore, the wide-scale implementation of this approach in higher pedagogical education practice is considered both appropriate and necessary.

## REFERENCES

1. Guilford, J. P. (1967). *The Nature of Human Intelligence*. New York: McGraw-Hill, pp. 138–

167.

2. Torrance, E. P. (1974). *Torrance Tests of Creative Thinking: Norms and Technical Manual*. Lexington, MA: Ginn Press, pp. 23–45.
3. Vygotsky, L. S. (1978). *Mind in Society: The Development of Higher Psychological Processes*. Cambridge, MA: Harvard University Press, pp. 79–91.
4. Bruner, J. S. (1961). The Act of Discovery. *Harvard Educational Review*, 31(1), 21–32, pp. 24–30.
5. Sternberg, R. J. (2006). The Nature of Creativity. *Creativity Research Journal*, 18(1), 87–98, pp. 90–95.
6. UNESCO. (2015). *Rethinking Education: Towards a Global Common Good?* Paris: UNESCO Publishing, pp. 47–58.
7. Zaripova, D., & Abdullaeva, M. (2021). *Innovative Educational Technologies in Teacher Training*. Tashkent: Fan va texnologiya, pp. 112–128.