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THE ROLE OF ARTIFICIAL INTELLIGENCE IN DEVELOPING STUDENTS' CREATIVE SKILLS

(on the example of primary education)

Zoirova Setora Jahongir qizi

4th-year student, Primary Education program,

Chirchik State Pedagogical University

Abstract. This article examines the pedagogical significance of artificial intelligence technologies in developing creative skills among primary school students. The study was conducted in alignment with the regulatory and legal framework of the Republic of Uzbekistan as well as the requirements of international assessment programs. A methodological model for integrating artificial intelligence tools into the primary education process was developed, and its effectiveness was verified through experimental research. The results indicate that the integration of artificial intelligence significantly enhances students' divergent thinking, creative problem-solving abilities, and independent creative activity.

Keywords: primary education, creativity, artificial intelligence, PIRLS, competency-based approach, divergent thinking, innovative methods.

Introduction. Primary education represents a foundational stage in the intellectual, linguistic, and creative development of learners. By the end of Grade 4, students are expected to demonstrate developed reading literacy, logical thinking, analytical abilities, and problem-solving skills. In the context of globalization, the quality of education is assessed not only by national standards but also through international assessment programs. Therefore, the development of creative skills in primary education requires reconsideration in alignment with international benchmarks.

In assessing the quality of primary education, the PIRLS program evaluates the reading literacy of fourth-grade students, including their ability to analyze texts, draw conclusions, and interpret meaning-higher-order thinking processes. The TIMSS program, in turn, assesses students' ability to apply knowledge in mathematics and science, engage in logical reasoning, and solve problem-based tasks. The nature of tasks in these programs requires not only reproductive knowledge but also analytical and partially creative approaches. Thus, fostering divergent thinking and independent decision-making skills from the early stages of education is consistent with international standards.

The Law of the Republic of Uzbekistan "On Education" (2020) and the "Digital Uzbekistan – 2030" strategy identify the integration of innovative and digital technologies into the educational process as a priority. In addition, policy documents related to the development of artificial intelligence support the creation of a digital pedagogical environment. In this context, artificial intelligence enables adaptive learning, the design of individualized learning trajectories, and the organization of rapid feedback and reflection, thereby supporting the development of creative thinking among primary school students. In particular, AI serves as an effective pedagogical tool in tasks such as storytelling, generating multiple solutions to problem situations, and expanding response options to open-ended questions.

Based on the above, the relevance of this study is determined by the need to develop creative skills in primary education in alignment with the requirements of international



assessment programs. The aim of the study is to identify the theoretical foundations of developing students' creative skills through the integration of artificial intelligence tools into the primary education process and to scientifically substantiate its pedagogical effectiveness.

Literature Review. Creativity has been studied by many scholars. In national pedagogical literature, researchers such as R. Adizov, Z.K. Kalenderova, and M. Mamasaidova have substantiated key components of creative reading, including analytical comprehension of texts, figurative thinking, reconstruction, and artistic perception. However, the role of artificial intelligence in this process has not yet been sufficiently explored from a scientific and practical perspective.

In recent years, the introduction of generative artificial intelligence into education has led to the emergence of new conceptual approaches in scientific literature. Generative models such as ChatGPT, Gemini, and Claude are interpreted not only as tools that facilitate students' interaction with texts, but also as means of enhancing imagination, associative thinking, and creative processing skills. Systems such as Amira Learning contribute to the individualization of education by assessing students' reading speed, expressiveness, and comprehension using AI, and by providing personalized learning pathways.

Among scholars from the Commonwealth of Independent States, researchers such as L. Vygotsky, A. Leontiev, D. Elkonin, O. Vasilchenko, E. Melkumova, V. Miretskaya, M. Suxomlinova, and E. Emmanuel have examined the theoretical foundations of developing creative abilities. Foreign scholars including E. P. Torrance, N. Rogers, J. Purnell, P. Roberts, A. M. Galligan, and Sh. Tatsuno have explored issues related to individual abilities and the manifestation of creative potential.

The American psychologist J. P. Guilford associated creativity with divergent thinking, defining it as the ability to generate multiple solutions to a given problem. According to him, the main indicators of creativity are flexibility, fluency, and originality. Guilford's views on creativity are methodologically aligned with PIRLS assessment criteria and provide a scientific basis for developing both reading literacy and creative thinking in primary education.

In the process of completing text-based tasks, students are required to engage in attentive and meaningful reading rather than superficial comprehension. Even when questions appear simple, they demand careful consideration. Open-ended questions encourage students not to limit themselves to the text but to express their own ideas creatively. For example, prompts such as "What would you do in this situation?" or "Why do you think this happened?" stimulate independent thinking and personal interpretation.

Although the theoretical foundations of creative reading have been established, there is a growing need to develop a systematic approach to integrating artificial intelligence into this process. While the impact of AI tools on creative reading competencies has been discussed in international research, practical and methodological solutions within the context of primary education remain insufficient. Experimental studies on AI-based reading technologies in traditional education systems are limited, and there is still a lack of a well-developed methodological base for fostering creative thinking through artificial intelligence.

Research Methodology. In the course of this study, an experiment involving artificial intelligence (AI) was conducted among primary school students. The level of students' performance was analyzed in two stages: initial assessment and subsequent evaluation of the results.



The experimental work was carried out in selected 3rd and 4th grade classes in Chirchik city. As part of the experiment, PIRLS-type tasks were redesigned using AI tools. Students were first presented with the initial part of a text and were asked to predict its possible continuation. All responses were considered and discussed. After that, the full task was provided.

Some of the AI-generated tasks were presented in visual formats, and students were asked to interpret them and provide answers to open-ended questions. The diversity and visual richness of the tasks increased students' engagement and interest.

Assessment criteria included students' ability to retell the text, their responses to open-ended and closed-ended questions, their creative and imaginative approaches, as well as their final reflections and suggestions. Comparative analysis of the results showed that students exposed to AI-supported instruction demonstrated higher engagement and improved creative skills.

This approach indicates strong potential for broader application, particularly given that primary school students tend to show high interest in visually rich and innovative learning formats.

Analysis and Results. During the study, the impact of artificial intelligence technologies on the development of creative skills among primary school students was comprehensively examined. The findings indicate that the use of AI tools shifts students' engagement with texts from passive reception to active creative reconstruction. AI-generated texts, test items, visual prompts, and alternative interpretative scenarios expanded students' imagination and facilitated a deeper understanding of textual meaning.

The experimental results showed that students who engaged with AI-supported tasks demonstrated significant improvement in divergent thinking, the ability to identify implicit meanings in texts, analyze character traits, and propose solutions based on their own perspectives rather than relying on standard approaches. The interactive interaction between students and generative AI enabled multi-layered interpretation of texts, thereby enhancing the creative nature of the reading process.

In this process, the teacher played a guiding role. As students gradually developed the necessary skills, they became more independent in completing tasks. During activities such as continuing a story, students also engaged in collaborative work, which contributed to the development of mutual respect and cooperative learning skills.

Conclusion and Recommendations. The findings of the study indicate that lessons conducted with the support of artificial intelligence encourage students to move beyond rigid patterns and engage in broader, more flexible thinking. Such an approach contributes to the development of learners who are capable of meeting modern educational demands, demonstrating competitiveness, and applying creative and critical thinking in various situations. Adaptive tasks designed with the use of artificial intelligence strengthen students' ability to work independently with texts and enhance their metacognitive skills. The interactive interaction between students and artificial intelligence observed during the study further stimulated creative thinking, enriched the content of reading lessons, and contributed to their methodological innovation.

Overall, the didactic model based on generative artificial intelligence proves to be an effective and modern pedagogical approach for fostering a culture of creative reading. The gradual implementation of this approach into the primary education system, the deepening of its theoretical foundations, and the expansion of practical applications represent important



directions for future research.

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