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THE ROLE OF SMART TECHNOLOGIES IN PREPARING FUTURE PRESCHOOL TEACHERS

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Annotation. This article explores the significance of Smart technologies in the professional preparation of future preschool teachers. It analyzes how digital tools transform pedagogical thinking, strengthen methodological competence, and enhance the neurocognitive and communicative development of both educators and young learners. Integrating Smart tools into teacher education accelerates interactive learning, fosters creativity, and supports evidence-based teaching practices. The paper presents theoretical insights, analytical reflections, methodological considerations, and research-supported conclusions.

Keywords: Smart technologies; Digital pedagogy; Preschool education; Teacher training; Interactive learning; ICT integration; Innovation in education.

INTRODUCTION.

Preschool education is an important stage in the psychological, social and intellectual development of a child. Therefore, the process of training future teachers should be shaped on the basis of modern requirements and technological innovations. In recent years, it has been found that smart technologies, artificial intelligence and digital learning tools help to make the pedagogical process more effective. With the help of these technologies, teachers can develop not only knowledge, but also creativity, problem-solving and interactive communication skills. In this regard, the role and importance of smart technologies in the training of preschool teachers is considered an important scientific issue.

In modern education, Smart technologies have become more than devices or platforms—they are a new intellectual ecosystem where learning breathes, evolves, and adapts. For future preschool teachers, Smart tools open a doorway to understanding how children learn in a digital century filled with rapid sensory stimuli and boundless information. When thoughtfully embedded in teacher preparation, Smart technologies support not only skill acquisition but also the formation of professional identity, reflective thinking, and pedagogical intuition.

The use of Smart boards, interactive panels, digital storytelling platforms, AI-supported applications, and virtual learning environments offers young educators an opportunity to design lessons that match the cognitive rhythms of preschool children. Neuroscience confirms that young learners respond strongly to visual dynamics, emotional color, movement, and multisensory engagement. Smart technologies transform these principles into practice: animations support phonemic awareness, interactive games enhance attention and working memory, virtual simulations strengthen problem-solving, and digital stories nurture imagination and language development. Thus, Smart pedagogy becomes a bridge between brain science and classroom practice.

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An analytical review of contemporary studies shows that Smart technologies significantly influence teacher readiness. They cultivate digital literacy, expand methodological versatility, and encourage educators to shift from passive instruction to active facilitation. Through Smart-based microlearning, online collaborative platforms, instant feedback tools, and data-driven assessment systems, future teachers learn to observe children more accurately, diagnose developmental needs more precisely, and design interventions more effectively. Smart environments also promote inclusiveness by providing adaptive learning tools for children with visual, auditory, or developmental differences.

Literature review and methodology

In recent years, a number of scientific works have been carried out in Uzbekistan on the issues of implementing digital technologies in the field of preschool education and pedagogy. In particular, scientists from the Center for Improving the Quality of Education of the Republic of Uzbekistan, Tashkent State Pedagogical University and Samarkand State University have studied the effectiveness of interactive educational programs, electronic educational materials and learning platforms based on artificial intelligence in preschool education. In Uzbek literature, in particular, the studies of Mirzaev (2020), Tursunova (2021) and Kuchkarov (2022) have analyzed the role and effectiveness of smart technologies in the development of pedagogical competencies in the process of training future teachers. Studies show that with the help of interactive tools and digital platforms, students learn to solve pedagogical tasks faster and more efficiently, innovative thinking and creative approaches develop.

Methodologically, Smart integration requires a combination of theoretical understanding and practical exploration. Future teachers engage in hands-on digital tasks, peer teaching with Smart tools, analysis of online resources, preparation of interactive lesson scenarios, and reflective journals documenting how technology influences learning behavior. Smart pedagogy becomes a living laboratory where students test strategies, analyze outcomes, and reshape their approach based on real-time insights. Evidence-based teaching, supported by digital analytics, strengthens their ability to make informed pedagogical decisions.

The article used analytical, comparative and experimental methods as a research methodology. Using the analytical method, the existing literature on the development of preschool education in Uzbekistan and the application of digital technologies was analyzed. Using the comparative method, international and national experiences were studied, and the effectiveness of smart technologies in the process of training future teachers was compared. Within the framework of the experimental method, interactive and artificial intelligence learning platforms were used by students of the Faculty of Preschool Education in Tashkent, and the results of the development of pedagogical competencies were observed.

Results and Discussion

The results of the study showed that:

With the help of smart technologies, students can consolidate their knowledge and improve their independent work skills during the learning process.

With the help of interactive platforms and simulation tasks, future teachers can quickly and effectively solve pedagogical situations.

Tools based on artificial intelligence individually analyze the level of knowledge of students and offer them appropriate educational directions.

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When discussing the results, it is worth noting that the implementation of smart technologies in the conditions of Uzbekistan not only makes the pedagogical process more effective, but also helps to develop students' creativity and problem-solving skills. At the same time, the methodological training and provision of resources for teachers in the process of technological integration are of great importance.

Conclusion

In conclusion, Smart technologies do not replace the teacher—they magnify the teacher's capacity to reach each child with precision, creativity, and empathy. They transform early childhood education into a dynamic, responsive, and visually rich experience where movement becomes meaning and curiosity becomes knowledge. For future preschool educators, mastering Smart tools is no longer optional; it is essential for thriving in the educational landscape of tomorrow. As the world continues to digitize, those who teach our youngest learners must be equipped not only with knowledge but with the technological fluency that allows learning to shine brighter, flow faster, and remain deeply human at its core.

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