

WAYS TO DEVELOP THE SKILLS OF FUTURE PRIMARY SCHOOL TEACHERS IN USING DIGITAL PEDAGOGICAL TECHNOLOGIES

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Abstract

This article explores the development of digital pedagogical skills among future primary school teachers. It discusses the relevance of digital tools in primary education, identifies key challenges in their application, and suggests practical solutions for improving their effective use.

Keywords: Digital technologies, primary education, pedagogical competence, teacher training, innovative methods.

Introduction

In the 21st century, digital transformations taking place in all spheres of societal development are also deeply affecting the education system. Digital technologies have not only altered the organizational structure of the teaching process, but have also elevated teacher-student interaction to a new level. This is particularly important in the primary education system, as effectively delivering foundational knowledge to children through modern tools has become one of the priority directions of today's educational policy. In accordance with the strategic program "Digital Uzbekistan – 2030" approved by the Decree of the President of the Republic of Uzbekistan on April 28, 2020, one of the most urgent tasks is to expand the use of digital technologies at all levels of education and to train pedagogical

personnel capable of utilizing modern technologies. This necessitates equipping future primary school teachers with digital competencies from the outset.

Practical observations indicate that while many students enrolled in pedagogical higher education institutions possess theoretical knowledge of digital pedagogical technologies, they encounter various difficulties in effectively applying them in practice. This highlights the need to improve pedagogical training in line with modern teaching methodologies, to expand students' experience in using innovative tools independently, and to increase their level of digital literacy.

Expanding the implementation of new pedagogical and information technologies into the educational process, introducing advanced practices in this area, developing and executing detailed plans for each subject, transferring textbooks, teaching manuals, programs, and lecture materials to digital formats, and ensuring that each student has access to them are all considered essential tasks. Additionally, the integration of modern pedagogical and information technologies into academic and methodological work, as well as the provision of necessary information tools to the education system and the connection of educational institutions to communication networks, are of great significance. An analysis of international experience reveals that developed countries place significant emphasis on ensuring that primary school teachers master digital technologies. In countries such as Finland, Estonia, South Korea, and Singapore, the development of digital competencies has become an integral part of teacher training programs. This indicates the need to deepen scientific research in this area in Uzbekistan and to identify existing challenges and propose evidence-based solutions. As a result of the advancement of modern education systems and ongoing digital transformation, teachers are now expected not only to deliver subject knowledge but also to adapt innovative technologies to students' age-specific characteristics and needs, organizing the pedagogical process in an interactive and effective manner. This requirement is especially crucial in primary education, where the intellectual and moral-psychological development of the child is laid. Digital pedagogical technologies contribute significantly to making this developmental process engaging, comprehensible, illustrative, and effective.

The application of modern digital technologies in primary education increases students' interest in lessons and supports the development of their independent thinking, observation, research, speech, and creative abilities. For instance,

platforms such as Wordwall, Kahoot, LearningApps, and ClassDojo can be used to reinforce knowledge, conduct assessments, and enhance motivation through gamified tasks. Additionally, video lessons, animations, and simulations play a vital role in implementing the principle of visual learning. However, to use these tools effectively, teachers must have a solid understanding of them, be able to select appropriate tools for specific didactic goals, and integrate them into the educational process competently.

Although higher education institutions that train future primary school teachers have taken certain steps in this direction, many shortcomings and challenges persist. For example, students specializing in pedagogy often understand digital technologies theoretically but struggle to apply them in practice, particularly in ways appropriate to primary school contexts. Skills such as designing digital lesson plans, creating interactive tasks, selecting digital tools suited to children's psychological characteristics, and using modern assessment tools are often underdeveloped. Some students mistakenly consider the use of a presentation as a digital lesson, whereas this does not constitute a comprehensive digital pedagogical approach.

Several factors contribute to this situation, including insufficient practical sessions on the use of digital technologies in pedagogical subjects, a lack of expertise among instructors themselves, the scarcity of digital resource-based tasks in textbooks and teaching materials, and the underutilization of available opportunities. Students often lack the competence to select innovative tools and methods appropriate to lesson content, integrate them into lesson structures, analyze outcomes, monitor students' engagement, and apply differentiated approaches based on results. To address these challenges, it is essential to introduce new approaches aimed at developing digital pedagogical competencies. This includes expanding students' independent activities using digital technologies, training them to work on project-based tasks, maintaining electronic portfolios, and guiding them in designing digital educational resources. Moreover, it would be beneficial to incorporate modules such as "Foundations of Innovative Technologies", "Digital Pedagogy", and "Designing Lessons with Multimedia Tools" into the curriculum.

Advanced foreign experience shows that in countries such as Finland, Estonia, and South Korea, the process of training pedagogical personnel is planned from the beginning around areas such as digital literacy, media pedagogy, virtual

collaboration, and digital assessment. Students in these countries are taught not only how to deliver lessons but also how to manage students' digital activities, ensure media safety, and adhere to digital ethics. This demonstrates the necessity of addressing not only the technical aspects of digital pedagogical training in Uzbekistan but also its methodological, psychological, and ethical dimensions.

Today's educational process requires a high level of professional preparation from pedagogical staff, particularly primary school teachers. One of the most crucial components of this preparation is the ability to effectively utilize and integrate digital pedagogical technologies into the teaching process. Analysis shows that although prospective primary school teachers possess general knowledge of digital tools, their ability to select tools appropriate to lesson content, direct them toward didactic goals, and analyze results is insufficiently developed. This may hinder their ability to implement innovative approaches in their future professional activities. Furthermore, students need to acquire not only technical knowledge of digital tools but also the pedagogical skills to use them in alignment with students' psychological development. Competencies such as selecting innovative tools that match lesson content, adapting them to age-specific needs, enhancing student engagement, and utilizing digital resources in assessment are essential for comprehensive professional preparation.

From this perspective, the following practical solutions and proposals can be suggested to address current issues and organize the educational process based on modern requirements:

- 1. Revising Educational Curricula:** Introduce practice-oriented modules such as "Innovative Pedagogical Technologies," "Foundations of Digital Pedagogy," and "Interactive Methods in Primary Education." Design specific tasks and projects for each subject that require the use of digital technologies.
- 2. Expanding Practical Sessions and Workshops:** Guide students in creating real lesson materials using platforms such as Wordwall, Kahoot, Quizlet, Canva, Genially, and ClassDojo. Encourage each student to independently or collaboratively develop and present a digital lesson plan or project.
- 3. Implementing a Mentorship System:** Establish collaboration between students and experienced teachers proficient in digital technology. Provide opportunities for students to actively participate in digital projects led by master's students or researchers.

4. Introducing Virtual Practicums and Portfolios: Create electronic portfolios compiling students' work in digital education (lesson scripts, tests, video lessons, animations). Organize and analyze experimental virtual classroom activities.

5. Enhancing Methodological Materials Based on International Experience: Study the use of digital technologies in advanced educational systems such as Finland, South Korea, and Estonia and adapt relevant practices to the local context. Encourage students to participate in international online courses, webinars, and access digital teaching manuals.

6. Developing a Digital Pedagogical Diagnostic System: Create comprehensive assessment tools (tests, surveys, rubrics) to evaluate students' digital competencies. Use assessment results to develop individualized development trajectories.

In conclusion, enhancing the preparedness of future primary school teachers to work with digital pedagogical technologies is a critical condition for ensuring the quality of modern education. Step-by-step development of this preparedness through theoretical knowledge, practical training, international experience, technological innovations, and continuous analysis not only improves students' digital literacy but also lays the foundation for training competitive, innovative, and highly skilled educators in the future.

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