THE ROLE OF DIGITAL EDUCATIONAL RESOURCES IN SHAPING THE PROFESSIONAL COMPETENCE OF FUTURE PRIMARY SCHOOL TEACHERS

Asia International University

Department of Pedagogy and Psychology lecturer

Lukmonova Salomat Gafurovna

Abstract: This study explores the role of digital educational resources in shaping the professional competence of future primary school teachers within the context of modern digitalized education. The research is based on theoretical analysis and an experimental study integrating electronic textbooks, interactive platforms, educational videos, and digital assessment tools into teacher training programs. The results demonstrate that systematic and purposeful use of digital educational resources significantly improves methodological competence, digital literacy, and reflective skills of prospective teachers. Participants involved in the experimental group showed higher levels of readiness to design interactive lessons and effectively integrate digital tools into the teaching process compared to the control group. The findings confirm that digital educational resources function not only as technical tools but also as powerful pedagogical instruments that enhance the quality of teacher education and support the development of professional competence in future primary school teachers.

Keywords: digital educational resources, professional competence, future primary school teachers, teacher education, digital literacy, pedagogical training.

Introduction. The ongoing digital transformation of education has significantly reshaped the goals, content, and methods of teacher training worldwide. In this context, the professional preparation of future primary school teachers requires not only strong subject knowledge and pedagogical skills but also the ability to effectively integrate digital educational resources into the teaching and learning process. Digital educational resources, including electronic textbooks, interactive platforms, educational applications, and online assessment tools, have become an integral part of modern primary education and teacher education programs.

For primary school teachers, professional competence is a complex construct that combines methodological, technological, communicative, and reflective components. The ability to select, adapt, and apply digital resources in accordance with educational objectives is now considered a key indicator of professional readiness. Digital educational resources create opportunities to visualize learning content, individualize instruction, increase learner engagement, and support independent learning activities. As a result, they contribute to the development of innovative teaching practices and enhance the overall quality of education.

Despite the growing availability of digital tools, many future teachers face challenges in their meaningful and pedagogically justified use. This highlights the need for systematic integration of digital educational resources into teacher training programs. Therefore, investigating the role of digital educational resources in shaping the professional competence of future primary school teachers is both timely and necessary. This study aims to analyze how the purposeful use of digital educational resources influences the development of professional competence and to identify their pedagogical potential in the context of modern teacher education.

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Methods. This study employed a mixed-methods research design combining theoretical analysis and empirical investigation to examine the role of digital educational resources in developing the professional competence of future primary school teachers. At the theoretical stage, relevant academic literature on teacher competence, digital pedagogy, and educational technologies was reviewed to clarify key concepts and establish the conceptual framework of the study.

The empirical part of the research was conducted in a teacher education institution and involved undergraduate students majoring in primary education. Participants were divided into experimental and control groups. The experimental group was taught using a structured integration of digital educational resources, while the control group followed traditional instructional methods. Digital educational resources used in the study included electronic textbooks, interactive learning platforms, educational videos, multimedia presentations, and online assessment tools.

To assess the level of professional competence, diagnostic instruments such as questionnaires, observation checklists, and performance-based tasks were applied before and after the experimental intervention. The evaluation focused on methodological competence, digital literacy, and reflective skills. Quantitative data were analyzed using comparative statistical methods to identify changes in competence levels between the two groups. Qualitative data obtained from observations and student reflections were analyzed descriptively to provide deeper insight into learning experiences.

The combination of quantitative and qualitative methods ensured the reliability and validity of the research findings and allowed for a comprehensive assessment of the impact of digital educational resources on the professional competence development of future primary school teachers.

Results. The results of the experimental study demonstrate that the systematic integration of digital educational resources had a significant positive impact on the professional competence development of future primary school teachers. Comparative analysis of pre- and post-experimental data revealed noticeable improvements in the experimental group across all assessed competence components, while changes in the control group were minimal.

In terms of methodological competence, participants in the experimental group showed increased ability to design learner-centered lessons, select appropriate teaching strategies, and effectively integrate digital tools into instructional activities. Their lesson plans became more structured, interactive, and aligned with educational objectives. Digital literacy levels also improved substantially, as students demonstrated greater confidence in using electronic textbooks, interactive platforms, multimedia materials, and online assessment tools.

Additionally, the development of reflective competence was evident. Students in the experimental group more actively analyzed their teaching practices, identified strengths and weaknesses, and proposed ways to improve their professional performance. Reflective journals and self-assessment tasks indicated a higher level of awareness regarding the pedagogical value of digital educational resources.

Quantitative results showed that the experimental group achieved significantly higher post-test scores compared to the control group, confirming the effectiveness of the implemented approach. The findings suggest that digital educational resources, when purposefully and pedagogically integrated into teacher education, contribute not only to technological skill development but also to the formation of comprehensive professional competence among future primary school teachers.

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Discussion. The findings of this study highlight the significant pedagogical value of digital educational resources in the professional preparation of future primary school teachers. The positive changes observed in the experimental group confirm that digital resources, when integrated purposefully into teacher education, contribute to the comprehensive development of professional competence rather than merely enhancing technical skills. This supports the view that digital tools function as pedagogical instruments that influence teaching approaches, learning organization, and reflective practice.

The improvement in methodological competence suggests that digital educational resources help future teachers better understand how to design interactive and learner-centered lessons. By working with multimedia content, digital platforms, and online assessment tools, students were able to align instructional strategies with learning objectives more effectively. These results are consistent with previous studies emphasizing that technology integration, when guided by pedagogical principles, enhances instructional planning and classroom practice.

The development of digital literacy and reflective competence further indicates that digital educational resources foster self-directed learning and professional awareness. Students became more confident in selecting appropriate digital tools and critically evaluating their own teaching activities. This reflective dimension is particularly important for primary school teachers, who must continuously adapt their methods to learners' needs and evolving educational environments.

However, the study also reveals that the effectiveness of digital educational resources depends on methodological support and structured implementation. Without clear pedagogical guidance, digital tools may be underutilized or applied superficially. Therefore, teacher education programs should not only provide access to digital resources but also emphasize pedagogically grounded training models.

Overall, the findings suggest that digital educational resources play a crucial role in shaping the professional competence of future primary school teachers and should be systematically embedded in teacher education curricula to ensure sustainable and meaningful professional development.

Conclusion. This study demonstrates that digital educational resources play a vital role in developing the professional competence of future primary school teachers. Their purposeful integration enhances methodological skills, digital literacy, and reflective abilities, enabling students to design interactive lessons and evaluate their teaching practices effectively. The experimental findings confirm that digital tools are not merely technical aids but essential pedagogical instruments that support comprehensive teacher preparation. To maximize their impact, teacher education programs must combine access to digital resources with structured, pedagogically guided training. Systematic use of these resources ensures the formation of competent, adaptable, and innovative educators ready for modern classrooms.

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2023