

Forming the Professional Competence of Future Teachers in The Context of Digitalization of The Educational Process

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Abstract: This article discusses the theoretical, methodological and practical foundations of the formation of professional competence of future teachers in the context of digitalization of the educational process. The pedagogical capabilities of the digital educational environment, e-learning platforms, artificial intelligence technologies, adaptive learning systems and the role of innovative approaches in the development of professional competences are analyzed. The study substantiates that the process of digital transformation serves to improve the quality of pedagogical education, develop teachers' digital competence and modernize the education system.

Keywords: Digitalization, professional competence, pedagogical education, digital competence, e-learning, artificial intelligence, adaptive learning, innovative approach.

Introduction: In recent years, the world education system has been undergoing a rapid digital transformation. The rapid development of information and communication technologies has radically changed the content, form and methods of education. Especially in the field of pedagogical education, equipping future teachers with modern digital competencies has become one of the urgent tasks. Large-scale reforms are also being implemented in the Republic of Uzbekistan to digitize education, introduce electronic platforms and develop digital pedagogy. This process is taking the system of pedagogical personnel training to a new level. The formation of professional competence of future teachers requires not only the provision of pedagogical knowledge, but also the preparation of them for effective functioning in a digital environment.

Professional competence is a system of knowledge, skills, qualifications and personal qualities necessary for a person to effectively carry out his professional activities. In pedagogical activity, this concept has a broader meaning, including didactic, methodological, communicative, reflexive and digital competencies.

Digitalization of education is the process of increasing

the efficiency of education through the use of digital technologies at all stages of the educational process. This process includes the following areas: creation and use of electronic educational resources; introduction of distance learning systems; organization of training through digital platforms; automation of the educational process; data-driven education. Digitization allows for individualization, interactivity and flexibility of the pedagogical process.

The digital learning environment is becoming a key component of the modern pedagogical system. The following technologies are widely used in this environment: LMS (Learning Management System) platforms; MOOC courses; virtual laboratories; artificial intelligence-based learning systems; mobile learning applications. These tools allow students to learn independently, deepen their knowledge, and develop practical skills.

Digital competencies have become the main professional requirement for a modern teacher. They include: skills in working with information; creating digital resources; organizing online learning; using multimedia tools; knowledge of the basics of

cybersecurity. The formation of these competencies should be integrated into all stages of the pedagogical education process.

Blended learning combines traditional and digital forms of education. This approach develops students' independent work skills and makes the educational process flexible.

Adaptive systems adapt to the level of knowledge of each student. These systems, working on the basis of artificial intelligence, form an individual learning trajectory.

Artificial intelligence allows you to automate, evaluate and analyze the educational process. These technologies perform functions such as: automatic testing systems; virtual teachers; learning analytics; recommendation systems.

VR and AR technologies are effective tools for developing practical skills. They allow you to model real processes in a virtual environment.

In the context of digital education, the role of the teacher is changing radically. He or she is now: not a provider of knowledge, but a guide; not a controller, but a facilitator; not a source of information, but a creator of a learning environment.

This requires a high level of digital literacy from the teacher.

There are a number of problems in the process of digitalization: lack of infrastructure; low digital competence of teachers; insufficient methodological materials; technological imbalances. To solve these problems, the following are needed: a system of continuous professional development; development of digital resources; state support; methodological innovations.

Analysis shows that digital integration significantly improves the quality of pedagogical education. The greatest changes are observed in the individualization, interactivity and increase in the efficiency of the educational process. At the same time, the full implementation of digital technologies requires the modernization of all components of the pedagogical system.

CONCLUSION

The digitalization of the educational process is a key factor in the formation of professional competence of

future teachers. Digital technologies transform pedagogical education into a modern, flexible and effective system. As a result, the possibility of training competitive, highly qualified pedagogical personnel expands.

REFERENCES

1. O'zbekiston Respublikasi. "Ta'lim to'g'risida"gi Qonun. – Toshkent, 2020.
2. O'zbekiston Respublikasi Prezidentining qarorlari va farmonlari: ta'lim tizimini raqamlashtirish va raqamli iqtisodiyotni rivojlantirishga oid hujjatlar. – Toshkent, 2020–2025 yillar.
3. UNESCO. Digital Education Transformation Framework. – Paris: UNESCO Publishing, 2023.
4. European Commission. Digital Education Action Plan (2021–2027). – Brussels, 2021.
5. Bates, A. W. Teaching in a Digital Age: Guidelines for Designing Teaching and Learning. – Vancouver: BCCampus, 2022.
6. Anderson, T. The Theory and Practice of Online Learning. – Edmonton: AU Press, 2021.
7. Mishra, P., Koehler, M. J. Technological Pedagogical Content Knowledge (TPACK) Framework. – Journal of Computing in Teacher Education, 2006.
8. Siemens, G. Connectivism: A Learning Theory for the Digital Age. – International Journal of Instructional Technology, 2005.
9. Xoliqov, A. Pedagogik mahorat. – Toshkent: O'qituvchi nashriyoti, 2021.
10. Muslimov, N. A. Innovatsion pedagogik texnologiyalar. – Toshkent: Fan va texnologiya, 2022.
11. Yuldashev, M. Pedagogik ta'limda axborot texnologiyalari. – Toshkent: Universitet nashriyoti, 2020.
12. Jonassen, D. H. Computers as Mindtools for Schools. – New Jersey: Prentice Hall, 2008.