



## **IMPROVING THE PROFESSIONAL COMPETENCIES OF TEACHERS BASED ON DIGITAL TECHNOLOGIES**

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<b>A B S T R A C T</b>	<b>KEY WORDS</b>
The article is dedicated to the mechanisms for improving the professional competencies of vocational education teachers based on digital technologies. It analyzes the andragogical framework of continuous professional development and the dynamics of enhancing methodological potential. The results present practical outcomes aimed at improving effective models of professional skills upgrading.	

### **INTRODUCTION**

In today's global transformation processes, it is impossible to understand societal development without the system of science, enlightenment, and professional education. The education system acts as a key indicator of human progress, and modernization efforts worldwide have made improving education quality a strategic priority. Indeed, the socio-economic stability and development of any country based on digital technologies are closely linked to the preparation of professional personnel and innovative pedagogical approaches.

One of the central directions of education reforms is the continuous improvement of teachers' professional competencies, which is of crucial importance. This is because innovative changes and successful development in any field directly correlate with the professional knowledge, digital technology skills, and professional qualification levels of personnel.

Modern mechanisms aimed at improving the professional competencies of educators and specialists are being implemented in global practice. These mechanisms serve to deepen teachers' digital and technological skills and align their professional potential with international standards. As a result, the educational process stands out not only in terms of efficiency but also by being organized on the basis of innovation and digital technologies.

In our country, improving the quality of education and continuously enhancing the professional competencies of specialists, as well as organizing the educational process on a digital-innovative basis, have been identified as priority directions of state policy. Based on these tasks, aligning the personnel training system with international standards and adapting teachers' professional and digital competencies to the demands of the modern social and technological environment are of great importance. Such a strategic approach increases the efficiency of the national education system and ensures its global competitiveness potential.

The Law of the Republic of Uzbekistan on Education No. O'RQ-637 dated September 23, 2020, the Decree of the President of the Republic of Uzbekistan No. PF-6079 dated October 5, 2020, "On approval of the 'Digital Uzbekistan – 2030' strategy and measures for its effective implementation," and the Decree "Uzbekistan – 2030" dated September 11, 2023, highlight distance learning as one of the forms of education.

These legal documents envision mechanisms for introducing innovative teaching models based on digital technology as part of education system modernization. The strategic tasks prioritize the creation and effective use of digital educational resources to ensure that teachers and students are equipped with modern knowledge. At the same time, developing the system of professional development and retraining is of great importance for improving the professional competencies of specialists.

Currently, in general secondary education institutions, developing the professional potential of pedagogical staff, enhancing their digital competencies, and fostering their ability to adapt to the rapidly changing social environment are among the top priorities. Supporting modern education reforms manifests as an effective pedagogical mechanism that ensures a high level of professional competency development among personnel and contributes to the sustainable progress of the nation.

**Relevance of the Topic** At the global level, continuous development of the professional education system based on the concept of education and the creation of mechanisms for improving teachers' professional competencies are emerging as strategic priorities in the field of education. In this process, effective use of digital technology capabilities, enhancing teachers' professional potential through innovative pedagogical mechanisms, and developing improved approaches based on comparative analyses are considered crucial conditions for successfully implementing the ongoing socio-economic and political reforms in our country.

**Brief Analysis of Scientific Research on the Topic** Scientific analyses related to the topic indicate that in the process of modernizing the education system in our country, improving the professional preparedness of teachers, developing their professional competencies, and aligning with the digital transformation process are recognized as important strategic directions. Particularly, the issues of enhancing the continuous professional development system through pedagogical mechanisms based on digital technologies, increasing the efficiency of vocational education, and developing teachers' digital competencies and innovative potential are scientifically grounded.

Notable researchers in this field include R.X. Juraev, U.I. Inoyatov, Z.K. Ismailova, N.A. Muslimov, Q.T. Olimov, Sh.E. Qurbonov, A.R. Xodjaboev, D.J. Sharipova, Sh.S. Sharipov, S.Q. Qaxxorov, R.D. Shodiev, M.B. Urazova, and O.A. Quysinov. Additionally, significant studies on the effective use of digital technologies and computer capabilities in the educational process have been conducted by specialists such as A.A. Abduqodirov, U.Sh. Begimqulov, F.M. Zakirova, A.A. Abdullaev, Sh.X. Qodirov, F.R. Maxmudov, D.O'. Rahimova, and I.S. Usmonov.

**Scientific Significance of the Article** The scientific significance of the article lies in its analysis of innovative approaches based on digital technologies integrated with traditional education in the processes of teachers' professional preparation. Although many researchers have conducted studies in this area, issues related to improving pedagogical mechanisms, developing teachers' professional and

methodological competencies, expanding the possibilities of digital technologies, and creating a scientifically grounded, practice-oriented system tailored to actual needs have not been fully explored.

**Research Objective** The objective of this research is to analytically study the problems and solutions raised in existing scientific studies regarding teachers' professional preparation, improvement of their professional competencies, and effective use of pedagogical mechanisms integrated with digital technologies. In this process, the aim is to develop practical conclusions and recommendations that will enhance the methodological competence of teachers working within the education system and ensure their continuous professional growth.

**Object of the Research** The object of the research is the mechanisms for improving the professional competencies of teachers working in the professional education system based on digital technologies.

**Subject of the Research** The subject of the research is the pedagogical mechanisms aimed at improving teachers' professional competencies within the professional education process based on digital technologies.

**Empirical Source of the Research** The empirical source of the research consists of data obtained during the practical examination of mechanisms for improving the professional competencies of vocational education teachers based on digital technologies, including survey results and comparative analysis outcomes.

**Main Section** In the process of ongoing reforms within the modern education system, particular attention is given to creating new opportunities for the professional development of teachers, continuously improving their professional competencies, and providing comprehensive support for pedagogical staff. Normative-legal documents and regulatory decisions, accepted as priority directions of state policy, are being consistently implemented in practice.

Specifically, in the Resolution No. PQ-4963 dated January 25, 2021, by the President of the Republic of Uzbekistan, the task was set to launch the "Continuous Professional Education" electronic platform within the pedagogical process and to improve its effective mechanisms. This platform was introduced into practice from March 1, 2021, providing the ability to monitor teachers' professional development processes and maintain individual records.

Moreover, the Cabinet of Ministers' Resolution No. 25 dated January 17, 2022, established priority directions in the field of public education, including the continuous enhancement of professional competencies of personnel, improvement of the professional development system based on the principle of "lifelong learning," and integration of digital technology opportunities into the teaching process. These resolutions also envisage the introduction of a credit-module system during retraining and professional competency improvement of pedagogical staff. This creates opportunities to prepare pedagogical personnel capable of effectively working based on digital mechanisms within the professional education system.

As a result of such reforms, a system of continuous professional development for teachers was established, enabling them to regularly improve their competencies and pedagogical potential based on the principle of lifelong learning. At the same time, questions remain relevant regarding the

practical effectiveness of this system, the extent to which digital technology-based platforms meet teachers' needs, and whether methodological and organizational problems encountered in professional development processes can be fully resolved. Therefore, this mechanism requires continuous review and improvement in accordance with contemporary demands.

During the research, teachers were randomly selected to participate in surveys and interviews.

In focus group discussions, participating teachers emphasized the necessity of enhancing professional competencies, effectively utilizing digital technology opportunities, and perfectly organizing professional development processes based on their experiences.

Survey results showed that by 2025, 35% of participants believe that professional development processes should be tailored to their professional needs and personal goals. Meanwhile, 58% emphasized that deepening knowledge in their subject areas and mastering effective teaching methods are the main priorities.

Additionally, 42% of participants noted the importance of strengthening practical-oriented training, coaching, and feedback mechanisms alongside theoretical knowledge.

Regarding online and offline courses, varying opinions were observed. Due to improvements in internet infrastructure by 2025, a large portion of educators evaluated online courses organized via digital technology as effective. However, some still preferred offline courses.

The results of this empirical study, involving the opinions of 386 pedagogical staff, serve as an important scientific and practical source for shaping and developing mechanisms to improve teachers' professional competencies in the professional education system based on digital technologies.

## Conclusion

The research revealed that improving the professional education system based on digital technology capabilities is a crucial factor in developing teachers' professional competencies. Currently, the integration of traditional and distance learning forms, along with the implementation of innovative digital platforms, contributes to increasing the effectiveness of educators' activities. At the same time, there is a clear need to review existing mechanisms and improve them to meet contemporary requirements.

Analyses indicate that if teachers' professional development is continuously supported, professional competencies in a digital learning environment will encompass not only knowledge and skills but also creative thinking, innovation, and advancement to new levels of pedagogical activity.

To ensure the effectiveness of mechanisms for improving professional competencies of vocational education teachers based on digital technologies, it is essential first to create an integrated platform and regularly update it, introducing interactive mechanisms such as synchronous webinars, virtual laboratories, and online simulations into the learning process. Additionally, combining online and offline training courses creates modern opportunities for teachers' professional growth.

To monitor each teacher's individual development trajectory, the introduction of digital portfolios and automated assessment systems, development of mobile versions of educational platforms, and improvement of their interfaces are necessary. Moreover, developing teachers' ICT skills, increasing digital literacy levels, and expanding a base of variable content materials in professional education processes are also important factors in improving professional competencies.

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