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DEVELOPING STUDENTS' DIGITAL COMPETENCE THROUGH AN INTEGRATED APPROACH WITH PROFESSIONAL DISCIPLINES

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Abstract
This article examines the issues of developing the digital competence of higher education students based on an integrated approach with professional disciplines in the context of digital transformation. Based on the conceptual synthesis of the TPACK and "The Padagogy Wheel" models, the methodical mechanisms of transforming students into active digital content creators are highlighted. The international standard DigComp 2.2 and the views of national scholars on integrated education are also analyzed, and the principles of improving students' professional-digital competence based on an integrative-creative approach are substantiated.

Keywords: Integrated approach, digital competence, professional disciplines, digital content creation, TPACK model, The Padagogy Wheel, DigComp 2.2, future specialist.

Introduction

In the current era of rapid digital transformation processes, the modernization of our country's education system and the training of modern personnel have become a priority of state policy. The rapid development of technology requires fundamental changes in the education system as well. Under these conditions, a priority task for educational institutions is the training of qualified specialists capable of meeting the requirements of the digital economy.

Resolution of the President of the Republic of Uzbekistan No. PP-51 dated February 1, 2024, "On additional measures to support activities for training qualified specialists in the field of digitalization," and Decree No. UP-73 dated April 28, 2025, "On measures to further improve the system of training pedagogical personnel," place responsible tasks before the education system [1, 2]. These documents provide a system that ensures the application of digital technologies in harmony with professional activity.

The application of an integrated approach with professional disciplines in the process of teaching information technology creates a solid foundation for the more profound and consistent development of a student's digital competence. Such integration

allows for the simultaneous development of technical skills, professional thinking, critical analysis, and the ability to independently solve digital problems. In the organization of the educational process integrated with professional disciplines, “in the development of bilateral communication between the object and subject of training, it has a new content and essence in terms of conducting training sessions and increasing the effectiveness of learning” [3]. In this regard, finding ways and opportunities for the effective use of information is considered one of the important tasks of education, allowing students to master, interpret, process information, create their imitations, and simultaneously develop information based on new ideas. The concept of digital competence is interpreted differently in modern scientific literature. In particular, according to the DigComp 2.2 system, which is the current latest and most advanced European Union standard for assessing digital competence, digital competence includes five main components: information and data literacy, Communication and cooperation, digital content creation, security, and problem-solving. This approach demonstrates that digital competence is a complex of technical skills, a multifaceted and dynamic, systemic, and integrated ability [5].

M.E. Mamarajabov substantiated the essence of digitalized education as "education aimed at organizing educational activities based on the integration of technologies using digital technologies and their constituent tools in the professional and pedagogical training of future teachers" [6], thereby revealing the complex nature of this process.

Foreign research also confirms the effectiveness of the integrated approach. In a study conducted by Jenkins, IT classes combined with professional disciplines help students develop the ability to independently apply technologies at a level 40% higher than the traditional method [7]. The fact that labor market requirements are dynamically changing in the context of the digital economy in our country further increases the relevance of this problem. In these conditions, the modern education system must quickly adapt to such global changes and provide students with the necessary professional and digital competencies. This, in turn, requires a revision of the content and pedagogical approaches of modern higher education classes.

Through an integrated approach with professional disciplines, the TPACK model (integration of technological, pedagogical, and substantive knowledge) can be cited as the methodological basis for developing students' digital competence, as well as the "Pedagogical Wheel" conceptual model based on Bloom's taxonomy for the practical-didactic design of this process. These models serve to pedagogically correctly synthesize the capabilities of digital technologies with the content of a specific professional field.

The systematic organization of digital content creation activities for students within the framework of professional disciplines is based on the pedagogical and professional-content knowledge principles of the TPACK model. At the same time, the correct selection of digital tools suitable for professional needs and the use of the "Teacher's Wheel" model as an interactive didactic tool in the gradual formation of students' critical analysis skills up to the level of creating digital content are highly effective. As a result, the theory of education is inextricably linked with practice, and the student does not just learn to use digital software tools, but acquires the skills of their purposeful and meaningful use in the process of solving professional problems. This, in turn, serves to improve the professional and digital competence of the future specialist.

A.A. Strokov's research work analyzes a wide range of issues regarding the didactic possibilities of developing students' "creative, reflexive, and informational culture," as well as issues of digital culture and the values of Russian educational culture. According to A.A. Strokov, digital technologies used in the modern educational process cannot fully replace educational work with students and remain merely an element of the educational system. It follows that in the changing digital educational environment, the issue of actualizing the traditional fundamental values of the local educational culture is acute. The actualization process allows students to work independently and creatively in reducing their dependence on technical tools and working with information [8].

The effectiveness of training future specialists in a digital educational environment is determined by the ability to use digital resources and create intelligent digital products in their professional field. When clarifying the essence of the concept of digital content creation competence in improving this ability, it is necessary to pay special attention to its integrative-creative nature based on theoretical analysis and existing approaches, "Digital content creation competence is an integrative personal-professional trait that combines professional knowledge, technological skills, and a creative-creative approach, allowing for the processing of information related to professional activity using modern technological tools, their creative visualization, and design and distribution in the form of an intellectual product." It serves to interpret the process of creating digital content as a mutual synthesis of a specialist's professional training and personal potential alongside working with software tools.

In conclusion, the development of students' digital competence through an integrated approach with professional disciplines manifests as an integrative personal-professional trait that combines professional knowledge, technological

skills, and creativity. As a result of the systematic implementation of this approach into the educational process, a solid foundation will be created for training future specialists who are competitive in the modern labor market, in step with the digital world, and comprehensively developed. In order to develop students' digital competence through an integrated approach with professional disciplines, the systematic inclusion of tasks for creating digital content that ensure students' independent creative activity into the curricula of professional disciplines for educational practice, it is recommended to implement measures for the widespread organization of digital content projects and internships aimed at improving students' professional and digital skills, creating the necessary modern digital infrastructure in higher education institutions, and fully providing students with the necessary software and technical tools. In the future, conducting comprehensive empirical research in this direction, developing a methodology for measuring and evaluating students' integrated digital competence, and verifying its effectiveness through experimental pedagogical experiments are scientifically relevant and important tasks.

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