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- 13.00.00 Pedagogika fanlari
- 13.00.01 Pedagogika nazariyasi. Pedagogik ta'limotlar tarixi
- 13.00.02 Ta'lim va tarbiya nazariyasi va metodikasi (sohalar bo'yicha)
- 13.00.03 Maxsus pedagogika
- 13.00.04 Jismoniy tarbiya va sport mashg'ulotlari nazariyasi va metodikasi
- 13.00.05 Kasb-hunar ta'limi nazariyasi va metodikasi
- 13.00.06 Elektron ta'lim nazariyasi va metodikasi (ta'lim sohaları va bosqichlari bo'yicha)
- 13.00.07 Ta'limda menejment
- 13.00.08 Maktabgacha ta'lim va tarbiya nazariyasi va metodikasi
- 13.00.09 Ijtimoiy pedagogika
- 07.00.00 Tarix fanlari
- 19.00.00 Psixologiya fanlari
- 01.00.00 Fizika-matematika fanlari
- 02.00.00 Kimyo fanlari
- 03.00.00 Biologiya fanlari
- 09.00.00 Falsafa fanlari
- 10.00.00 Filologiya fanlari
- 11.00.00 Geografiya fanlari

# M

# AKTABGACHA VA AKTAB TA'LIMI

Pedagogika, psixologiya fanlariga ixtisoslashgan ilmiy jurnal



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# A CONCEPTUAL TEACHER DIGITAL COMPETENCE MODEL FOR VOCATIONAL EDUCATION

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**Abstract:** The success of digital transformation in vocational education largely depends on teachers' digital competence and is not limited solely to the availability of technological resources. Many vocational education institutions employ digital tools without ensuring that teachers possess the pedagogical, technological, and methodological skills required for their effective use. This article proposes a digital competence model for teachers specifically designed for vocational education. The study is based on a theoretical and methodological analysis of digital competence frameworks, pedagogical theories, and vocational education practice. The proposed model consists of four interrelated dimensions: technological competence, pedagogical competence, digital content design competence, and assessment and feedback competence. The results demonstrate that the developed competence model supports the meaningful integration of digital tools into vocational education and contributes to improving teaching quality. The article concludes that teachers' digital competence represents a central element of digitalization in vocational education.

**Key words:** teacher digital competence, professional education, educational technology, pedagogical model, digital pedagogy, learning management systems, higher education.

**Annotatsiya:** Kasb-hunar ta'limida raqamli transformatsiyaning muvaffaqiyati ko'p jihatdan o'qituvchilarning raqamli kompetensiyasiga bog'liq bo'lib, bu jarayon nafaqat texnologik resurslarning mavjudligi bilan belgilanadi. Ko'plab kasb-hunar ta'limi muassasalarida raqamli vositalardan foydalanilsa-da, o'qituvchilarning ulardan samarali foydalanish uchun zarur bo'lgan pedagogik, texnologik va metodologik ko'nikmalarga ega ekanligi yetarli darajada ta'minlanmaydi. Ushbu maqolada kasb-hunar ta'limi uchun maxsus ishlab chiqilgan o'qituvchilarning raqamli kompetensiyasi modeli taklif etiladi. Tadqiqot raqamli kompetensiya doiralari, pedagogik nazariyalar hamda kasb-hunar ta'limi amaliyotining nazariy va metodologik tahliliga asoslangan. Taklif etilayotgan model to'rtta o'zaro bog'liq o'lchovdan iborat: texnologik kompetensiya, pedagogik kompetensiya, raqamli kontentni loyihalash kompetensiyasi hamda baholash va fikr-mulohaza kompetensiyasi. Natijalar shuni ko'rsatadiki, ishlab chiqilgan kompetensiya modeli o'qituvchilarga raqamli vositalarni kasb-hunar ta'limiga mazmunli integratsiya qilish va o'qitish sifatini yaxshilashga yordam beradi. Maqolada o'qituvchilarning raqamli kompetensiyasi kasb-hunar ta'limida raqamlashtirishning markaziy elementi ekanligi xulosa qilinadi.

**Kalit so'zlar:** o'qituvchining raqamli kompetensiyasi, kasbiy ta'lim, ta'lim texnologiyalari, pedagogik model, raqamli pedagogika, o'quvni boshqarish tizimlari, oliy ta'lim.

**Аннотация:** Успех цифровой трансформации в профессиональном образовании во многом зависит от цифровой компетентности преподавателей и не ограничивается только наличием технологических ресурсов. Во многих учреждениях профессионального образования цифровые инструменты используются без обеспечения у преподавателей необходимых педагогических, технологических и методических навыков для их эффективного применения. В статье предлагается модель цифровой компетентности преподавателей, специально разработанная для системы профессионального образования. Исследование основано на теоретическом и методологическом анализе рамок цифровой компетентности, педагогических теорий и практики профессионального образования. Предложенная модель включает четыре взаимосвязанных измерения: технологическую компетентность, педагогическую компетентность, компетентность в проектировании цифрового контента, а также компетентность в оценивании и обратной связи. Результаты исследования показывают, что разработанная модель способствует эффективной интеграции цифровых инструментов в профессиональное образование и повышению качества обучения. В заключение делается вывод о том, что цифровая компетентность преподавателей является ключевым элементом цифровизации профессионального образования.

**Ключевые слова:** цифровая компетентность преподавателя, профессиональное образование, образовательные технологии, педагогическая модель, цифровая педагогика, системы управления обучением, высшее образование.

## INTRODUCTION

Digital technologies have become an integral part of modern education, including vocational education. However, the effectiveness of digitalization depends not only on infrastructure but also on teachers' ability to use digital tools pedagogically. In vocational education, teachers are required to combine theoretical knowledge with practical training, which necessitates an advanced level of digital competence. Despite the availability of various digital platforms, many teachers experience difficulties in integrating digital tools into teaching practice. This situation indicates a clear need for a context-specific model of teachers' digital competence tailored to vocational education. Research on digital competence emphasizes the critical role of teachers in facilitating the meaningful use of technologies in educational processes. International frameworks, such as DigCompEdu, identify key areas of digital competence for teachers. Studies in vocational education further suggest that teachers require not only technical skills but also pedagogical and methodological competencies to design effective digital learning activities. Nevertheless, existing competence frameworks are often generic and insufficiently adapted to the specific characteristics and needs of vocational education. Therefore, there is a growing need for a context-based digital competence model designed specifically for vocational education teachers.

## LITERATURE REVIEW

Recent studies conceptualize teacher digital competence not merely as technical ICT skills, but as an integrated set of pedagogical, professional, and digital abilities. International frameworks emphasize that teachers' digital competence should support effective teaching, assessment, communication, and continuous professional development. In vocational education, teacher digital competence has a distinctive role because teaching is closely linked to workplace practices and labor market demands. The literature highlights that vocational teachers must combine pedagogical use of digital technologies with sector-specific digital tools, simulations, and platforms that reflect real production environments. Although integrative models such as TPACK explain the relationship between technology, pedagogy, and content, they do not fully capture the work-based and industry-oriented nature of vocational education. Therefore, recent research stresses the need for a conceptual teacher digital competence model specifically tailored to vocational education, integrating pedagogical digital skills, occupational digital practices, and responsible, safe use of technology.

## RESEARCH METHODOLOGY

This study employed a qualitative theoretical–methodological approach based on structural and conceptual analysis. The research was conducted in three methodological stages. First, a conceptual review of internationally recognized frameworks for teachers' digital competence was carried out, including the DigCompEdu framework and the Technological Pedagogical Content Knowledge (TPACK) model. These frameworks were selected as key theoretical references due to their strong relevance to pedagogical digital competence. Second, a comparative analysis was conducted using predefined analytical criteria, namely: pedagogical integration of digital tools, alignment with vocational education objectives, and digital practices supporting competency-based learning and assessment. These criteria were derived from vocational education research and pedagogical theory. Third, a digital competence model for teachers adapted to vocational education was developed through the synthesis of the reviewed frameworks and the established analytical criteria. The proposed model integrates technological, pedagogical, content design, and assessment dimensions. Conceptually, the model is grounded in learner-centered teaching, competency-based learning, and reflective teaching practices.

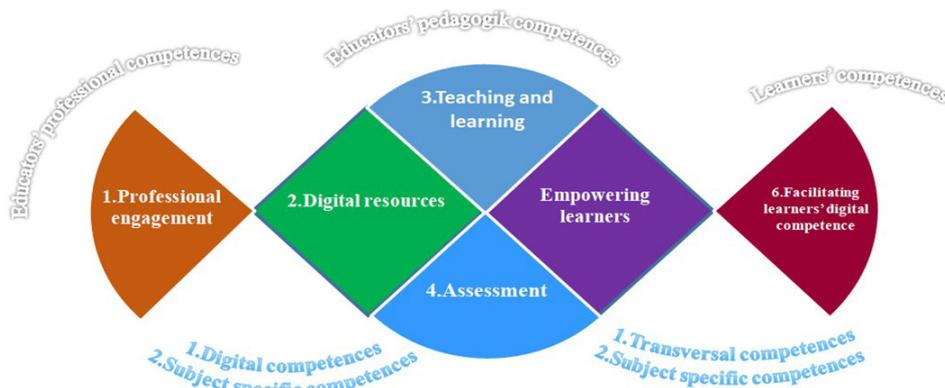


Figure 1: Teacher digital competence model for vocational education



A conceptual teacher digital competence model specifically developed for vocational education is presented. The model is structured around four interrelated competence dimensions. The first dimension, Technological Competence, refers to teachers' ability to effectively use digital tools, platforms, and educational technologies in the context of vocational education. The second dimension, Pedagogical Competence, concerns the integration of digital technologies into teaching strategies, learner-centered approaches, and competency-based learning activities. The third dimension, Digital Content Design Competence, focuses on teachers' skills in creating, adapting, and organizing digital learning materials that are relevant to vocational education objectives. The fourth dimension, Assessment and Feedback Competence, refers to the use of digital tools to monitor learning, conduct assessments, and provide formative feedback (Figure 1). The model places vocational education outcomes at the center, with all competency dimensions collectively contributing to improved teaching effectiveness and the development of students' professional skills. Analysis and Results. The results of this study are presented in the form of a conceptual teacher digital competence model for vocational education. The model is grounded in key findings derived from a theoretical analysis of existing digital competence frameworks and pedagogical approaches relevant to vocational education contexts. As outlined in the proposed model, teacher digital competence is structured around four interrelated dimensions that collectively contribute to effective vocational education outcomes. The first identified result is the classification of technological competence as a core component, reflecting teachers' ability to use digital tools, platforms, and educational technologies to support practical and skills-oriented teaching. The analysis indicates that technological competence enables teachers to manage digital learning environments effectively.

The second result highlights pedagogical competence as an essential integrative dimension. The model suggests that effective digital pedagogy in vocational education requires the integration of digital technologies with learner-centered teaching, competency-based learning, and active learning strategies. This competence supports the meaningful integration of digital tools into teaching practices rather than their isolated use. The third outcome emphasizes digital content design competence. The research findings indicate that vocational educators should possess the ability to design, adapt, and organize digital learning materials that reflect professional standards and practical learning objectives, ensuring that digital content remains relevant and applicable to real-world professional tasks. The fourth outcome concerns assessment and feedback competence. The model suggests that the use of digital assessment tools enables continuous monitoring of student progress and supports formative feedback processes, thereby contributing to improved learning organization and the development of professional skills. Overall, the results indicate that the proposed Teacher Digital Competence Model is intended to support understanding and improvement of teachers' digital competence in vocational education. The integration of the four competence dimensions is identified as crucial for enhancing teaching effectiveness and supporting the development of students' professional skills. This study contributes to the growing body of research on teachers' digital competence by proposing a conceptual model adapted to vocational education contexts. In contrast to generic digital competence frameworks, the proposed model emphasizes the integration of pedagogical, technological, digital content design, and assessment-related competences in direct relation to vocational education outcomes. This adaptation reflects the specific characteristics of vocational education, where the development of practical skills and professional relevance is central. The findings extend existing models of teachers' digital competence by highlighting the importance of contextualization. While widely used frameworks provide comprehensive descriptions of competences, they are primarily designed for general education settings.

By contrast, the proposed model explicitly addresses the needs of vocational teachers, whose teaching practices require close alignment with industry standards, practical training, and competency-based learning. This contextual focus represents a key theoretical contribution of the study. Another important aspect concerns the interdependence of competence dimensions. The model suggests that technological competence alone is insufficient to improve teaching quality in vocational education; rather, digital tools must be meaningfully integrated through pedagogical competence, supported by digital content design skills and appropriate digital assessment strategies. This integrated perspective aligns with previous research emphasizing that effective educational digitalization depends not only on technology use but also on pedagogical transformation. The centrality of vocational education outcomes further strengthens the conceptual value of the model. By focusing on learning outcomes, the model underscores the outcome-oriented nature of vocational education and highlights that teacher digital competence should ultimately enhance the development of students' professional skills. From a practical perspective, the proposed model provides a valuable framework for teacher professional development and curriculum design in vocational education institutions. It may serve as a foundation for developing curricula aimed at strengthening teachers' digital competence and supporting institutional strategies for systemic digital transformation. Furthermore, the model offers guidance for policymakers and education administrators seeking to improve the quality and relevance of vocational education through digitalization. Despite its contributions, the study is limited by its conceptual nature and the absence of empirical validation. Future

research should therefore focus on empirically testing the proposed model through questionnaires, classroom observations, or intervention-based studies in vocational education settings.

## CONCLUSION

This study advances the discussion on teachers' digital competence by proposing a conceptual model tailored to vocational education that responds to the pedagogical and professional demands of a skills-based learning environment. While existing digital competence frameworks provide valuable general guidance, they often lack alignment with the specific contexts of vocational education, where practical skills acquisition, workplace relevance, and competency-based assessment are central. The proposed model addresses this gap by situating teachers' digital competence within a professionally contextualized framework. The primary contribution of the study lies in the integrated structure of the model, which conceptualizes digital competence not as a set of isolated technical skills but as an interrelated system of technological, pedagogical, digital content design, and assessment and feedback competences. This systemic perspective supports the view that digital transformation in vocational education requires not only access to digital tools but also pedagogical coherence and intentional teaching practice. By placing vocational learning outcomes at the center, the model promotes outcome-oriented teaching practices that support students' vocational skills development and employability, aligning digital pedagogy with labor market demands and industry standards.

Additionally, the model emphasizes the formative role of digital assessment and feedback. Unlike traditional assessment approaches, the integration of digital assessment tools facilitates continuous monitoring of learning processes and timely feedback aligned with competency-based objectives, thereby enhancing teaching quality and learner autonomy in professional settings. Overall, the proposed model offers practical implications for teacher professional development and policy formulation, providing a conceptual framework for designing targeted curricula that integrate technological skills, pedagogical application, digital content creation, and assessment literacy, and supporting vocational education institutions in developing systematic and sustainable digital transformation strategies.

## References:

1. Punie, Y., & Redecker, C. (2019). European Framework for the Digital Competence of Educators (DigCompEdu): Development and evaluation of a self-assessment instrument for teachers' digital competence. *European Journal of Education*. Retrieved from [https://www.researchgate.net/publication/333346181\\_Digital\\_Competence\\_of\\_Educators\\_DigCompEdu](https://www.researchgate.net/publication/333346181_Digital_Competence_of_Educators_DigCompEdu)
2. Sangrà, A., Vlachopoulos, D., & Cabrera, N. (2020). Building digital education strategies: An inclusive approach to e-learning. *Computers & Education*. Retrieved from <https://pure.eur.nl/en/publications/building-an-inclusive-definition-of-e-learning-an-approach-to-the>
3. Almarzooq, Z., Lopes, M., & Kochar, A. (2021). Virtual learning in higher education: Challenges and opportunities. *Journal of Educational Technology*. Retrieved from <https://www.sciencedirect.com/journal/computers-and-education>
4. Ilomäki, L., & Lakkala, M. (2020). Digital competence in vocational education: A pedagogical framework for innovation. *International Journal of Vocational Education and Training*. Retrieved from <https://link.springer.com/article/10.1007/s10734-020-00520-6>
5. Redecker, C. (2018). Digital transformation of education systems: Policy and practice. European Commission Report. Retrieved from <https://ec.europa.eu/jrc/en/digcompedu>
6. Qureshi, I., & Khan, A. (2021). Integration of ICT in technical and vocational training. *International Journal of Educational Development*. Retrieved from <https://www.sciencedirect.com/journal/international-journal-of-educational-development>
7. Mishra, P., & Koehler, M. J. (2022). TPACK framework in digital pedagogy: Integrating technology and teaching. *Teaching and Teacher Education*. Retrieved from <https://www.sciencedirect.com/journal/teaching-and-teacher-education>
8. Frolova, E. V., Rogach, O. V., & Ryabova, T. M. (2020). Digitalization challenges in higher education: Barriers and opportunities. *Educational Studies*, 46(2), 243–259. Retrieved from <https://www.tandfonline.com/loi/ceds20>
9. Chen, X., & Zheng, Y. (2023). AI-assisted learning in vocational training: Pedagogical and technological perspectives. *Journal of Innovation in Learning*. Retrieved from <https://link.springer.com/journal/innov-learn>
10. Jumanov, A. A., & Rakhimboyeva, G. I. (2024). Pedagogical methods for digital transformation in vocational education. *Journal of Technical Pedagogy*. Retrieved from <https://scholar.google.com>
11. Aria, M., & Cuccurullo, C. (2017). Bibliometrix: An R-tool for comprehensive science mapping analysis. *Journal of Informetrics*, 11(4), 959–975. <https://doi.org/10.1016/j.joi.2017.08.007>
12. Aparicio, M., Bacao, F., & Oliveira, T. (2022). Digital transformation in higher education: A bibliometric mapping of research trends. *Education and Information Technologies*, 27(6), 8475–8498. <https://doi.org/10.1007/s10639-021-10834-6>
13. Bozkurt, A., & Sharma, R. C. (2023). Emergency remote teaching in higher education: Lessons learned and future directions. *Computers & Education*, 194, 104676. <https://doi.org/10.1016/j.compedu.2023.104676>

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- 13.00.00 Pedagogika fanlari
  - 13.00.01 Pedagogika nazariyasi. Pedagogik ta'limotlar tarixi
  - 13.00.02 Ta'lim va tarbiya nazariyasi va metodikasi (sohalar bo'yicha)
  - 13.00.03 Maxsus pedagogika
  - 13.00.04 Jismoniy tarbiya va sport mashg'ulotlari nazariyasi va metodikasi
  - 13.00.05 Kasb-hunar ta'limi nazariyasi va metodikasi
  - 13.00.06 Elektron ta'lim nazariyasi va metodikasi (ta'lim sohaları va bosqichlari bo'yicha)
  - 13.00.07 Ta'limda menejment
  - 13.00.08 Maktabgacha ta'lim va tarbiya nazariyasi va metodikasi
  - 13.00.09 Ijtimoiy pedagogika
  - 07.00.00 Tarix fanlari
  - 19.00.00 Psixologiya fanlari
  - 01.00.00 Fizika-matematika fanlari
  - 02.00.00 Kimyo fanlari
  - 03.00.00 Biologiya fanlari
  - 09.00.00 Falsafa fanlari
  - 10.00.00 Filologiya fanlari
  - 11.00.00 Geografiya fanlari



# MAKTABGACHA VA MAKTAB TA'LIMI

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