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DIGITAL EDUCATIONAL TECHNOLOGIES AS A MEANS OF DEVELOPING THE METHODOLOGICAL COMPETENCE OF FUTURE TEACHERS

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Abstract: The paper examines how digital educational technologies can serve as a means of developing the methodological competence of future teachers rather than only their technical skills. It argues that this happens when digital tools are integrated into subject methods courses and linked to justified pedagogical decisions, and proposes a cyclical "design – try – reflect" model for organising such work in teacher training.

Keywords: digital educational technologies, methodological competence, future teachers, TPACK, DigCompEdu, reflection, teacher education

Annotatsiya: Tezisda raqamli ta'lim texnologiyalari bo'lajak o'qituvchilarning faqat texnik ko'nikmalarini emas, balki metodik kompetentligini rivojlantirish vositasi sifatida qanday xizmat qilishi masalasi ko'rib chiqiladi. Muallif bunga raqamli vositalar fan metodikasi kurslariga integratsiyalashgan va asoslangan pedagogik qarorlar bilan bog'langan holda erishilishini asoslaydi hamda "loyihalash – sinab ko'rish – refleksiya" sikl modelini taklif etadi.

Kalit so'zlar: raqamli ta'lim texnologiyalari, metodik kompetentlik, bo'lajak o'qituvchi, TPACK, DigCompEdu, refleksiya, pedagogik ta'lim

Аннотация: В тезисах рассматривается, каким образом цифровые образовательные технологии могут служить средством развития методической компетентности будущих учителей, а не только их технических навыков. Автор обосновывает, что это достигается при интеграции цифровых инструментов в курсы частных методик и их связи с обоснованными педагогическими решениями, и предлагает циклическую модель «проектирование – апробация – рефлексия».

Ключевые слова: цифровые образовательные технологии, методическая компетентность, будущий учитель, TPACK, DigCompEdu, рефлексия, педагогическое образование

Introduction

A student teacher who can build an attractive presentation in a few minutes is not necessarily able to explain why that presentation helps pupils learn. Universities increasingly report that future teachers arrive with confident everyday digital skills, yet struggle to turn those skills into well-reasoned lessons. The gap lies not in technical ability but in methodological competence: the capacity to choose, combine and justify methods, forms and means of teaching in relation to a concrete learning goal and a concrete class.

The Development Strategy of New Uzbekistan for 2022–2026 and the "Digital Uzbekistan – 2030" strategy both set the task of improving the quality of teacher training and expanding the use of digital technologies in education [1; 2]. For pedagogical universities this raises a practical question:

how should digital educational technologies be used in methods courses so that they develop students' methodological thinking, and not only their familiarity with software? This paper offers a short theoretical answer.

Main Part

In Uzbek and Russian pedagogy, methodological competence is usually understood as part of a teacher's wider professional competence, covering the ability to design the learning process, select teaching methods and means, organise pupils' activity and evaluate results [6; 7]. What distinguishes it from general pedagogical knowledge is its instrumental, situational character: it shows itself only in decisions about how to teach a particular topic to particular learners. A digital technology therefore contributes to methodological competence only when it becomes part of such decisions.

International frameworks support this reading. The TPACK model of Mishra and Koehler holds that teaching with technology requires knowledge located at the intersection of technology, pedagogy and content, rather than in any one of them [3]. The European Framework for the Digital Competence of Educators (DigCompEdu) similarly places the use of digital resources, teaching and learning, and assessment at the centre of teachers' digital competence, treating the technical side as a means and not an end [4]. Both frameworks suggest that in teacher education digital technologies should not be taught in a separate course detached from subject methods, but within those methods, where questions of content and pedagogy already arise.

Experience alone, however, does not produce competence. Kolb's experiential learning cycle shows that concrete experience becomes learning only after reflective observation and conceptualisation [5], and Schön's notion of the reflective practitioner stresses that professional knowledge grows through reflection on one's own action [8]. Digital technologies have a particular advantage here: they make teaching actions recordable, shareable and revisable. A lesson plan in a shared document carries the history of its revisions; a recorded microteaching fragment can be watched several times; an online quiz produces data on which pupils' answers can be analysed.

On these grounds the author proposes a "design – try – reflect" model for using digital educational technologies in methods courses for future teachers.

At the design stage, students plan a lesson fragment in which a digital tool is chosen for an explicitly stated learning goal. The key requirement is justification: the plan must explain what the tool allows pupils to do that a non-digital method would not, and what risks it brings. Collaborative documents and lesson-planning templates make this reasoning visible to the lecturer and to peers.

At the try stage, students conduct the planned fragment in microteaching or during teaching practice, using the tool with real or simulated learners. Here they encounter what plans usually omit: time lost to logging in, pupils who lack devices, questions the tool cannot answer. Recording the fragment, with the consent of participants, preserves this experience for analysis.

At the reflect stage, students analyse the recording, the pupils' results and peer feedback, and revise their plan. Reflection is guided by three questions: Did the tool serve the stated goal? What did it change in pupils' activity? What would I do differently in a school with fewer resources? The last question is important for Uzbekistan, where conditions vary between well-equipped urban schools and rural schools with limited connectivity, and where lessons may be taught in Uzbek, Russian or Karakalpak.

The model is cyclical: a revised plan becomes the starting point of a new design stage. Its value lies not in any specific tool but in the habit it forms, namely the habit of treating every digital technology as a methodological decision that must be justified, tested and evaluated. In this sense digital technologies act as a means of developing methodological competence, not merely as its object.

The model also indicates how progress can be assessed. The number of platforms a student can name says little. More telling are the quality of justification in lesson plans, the depth of changes made

after reflection, and the student's ability to adapt a digitally supported method to a low-technology setting without losing its learning purpose.

Conclusion

Digital educational technologies become a means of developing the methodological competence of future teachers when they are integrated into subject methods courses, when their choice is justified by a learning goal, and when their use is followed by structured reflection. The proposed "design – try – reflect" model offers pedagogical universities of Uzbekistan a simple framework for organising such work in methods courses and teaching practice. Further research should test the model empirically by comparing the lesson plans and reflective reports of students trained with and without it.

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