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INNOVATIVE TECHNOLOGIES AS A FACTOR IN IMPROVING THE PROFESSIONAL COMPETENCE OF FUTURE TEACHERS

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Abstract: The paper asks under what conditions innovative technologies actually become a factor in improving the professional competence of future teachers. It argues that the decisive element is not the technology itself but its alignment with content and pedagogical purpose, and proposes a "three filters" criterion for selecting technologies in teacher training: didactic purpose, professional modelling and contextual fit.

Keywords: innovative technologies, professional competence, future teachers, TPACK, SAMR, teacher education

Annotatsiya: Tezisda innovatsion texnologiyalar bo'lajak o'qituvchilar kasbiy kompetentligini oshirish omili sifatida qachon samarali bo'lishi masalasi ko'rib chiqiladi. Muallif texnologiyaning o'zi emas, balki uning mazmun va pedagogik maqsad bilan uyg'unligi hal qiluvchi ekanini asoslaydi va "uch filtr" mezonini (didaktik maqsad, kasbiy namuna, kontekstga moslik) taklif etadi.

Kalit so'zlar: innovatsion texnologiyalar, kasbiy kompetentlik, bo'lajak o'qituvchi, TPACK, SAMR, pedagogik ta'lim

Аннотация: В тезисах рассматривается вопрос о том, при каких условиях инновационные технологии становятся реальным фактором повышения профессиональной компетентности будущих учителей. Автор обосновывает, что решающим является не сама технология, а её согласованность с содержанием и педагогической целью, и предлагает критерий «трёх фильтров»: дидактическая цель, профессиональный образец, соответствие контексту.

Ключевые слова: инновационные технологии, профессиональная компетентность, будущий учитель, TPACK, SAMR, педагогическое образование

Introduction

A lecturer who replaces a chalkboard with an interactive whiteboard and then writes on it exactly as before has introduced a new device but not a new technology of teaching. The example is trivial, yet it captures a confusion that persists in discussions of innovation in teacher education. "Innovative technologies" is often taken to mean digital tools, and their presence in a course is taken as evidence of modernisation. For the training of future teachers this confusion is especially costly, because students

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learn not only from what they are told about teaching but also from how they themselves are taught.

The Development Strategy of New Uzbekistan for 2022–2026 gives considerable attention to the quality of education and to the training of teachers [1]. The question for pedagogical universities is therefore not whether to use innovative technologies, but how to ensure that their use leads to measurable growth in students' professional competence rather than to a change of surface. This paper offers a brief theoretical answer to that question.

Main Part

In Uzbek and Russian pedagogical scholarship, the term "pedagogical technology" has a meaning broader than technical equipment. Bespalko described pedagogical technology as a project of a particular pedagogical system realised in practice, stressing the reproducibility and diagnosable goals of the learning process [5]. Yo'ldoshev and Usmonov likewise treat pedagogical technology as a systematic organisation of goals, content, methods and assessment [6]. From this perspective a technology is innovative not because it is new or digital, but because it reorganises the teaching and learning process in a way that leads to better results. Digital tools may be part of such a reorganisation, but they are not its essence.

This view finds support in international work on teachers' knowledge. Shulman's concept of pedagogical content knowledge drew attention to the specific knowledge a teacher needs in order to make subject matter teachable [2]. Mishra and Koehler extended it into the TPACK framework, arguing that effective teaching with technology depends on the interaction of technological, pedagogical and content knowledge, not on each separately [3]. A future teacher who knows how to operate a tool, how to organise group work and what the topic contains, but cannot combine the three, will not use technology productively in a lesson. The UNESCO ICT Competency Framework for Teachers points in the same direction, presenting the use of ICT as something that develops through stages of knowledge acquisition, knowledge deepening and knowledge creation, and that touches curriculum, pedagogy and assessment rather than only technical skill [4]. For teacher education this means that innovative technologies cannot be taught as a separate module on tools; they must be woven into courses on teaching methods, where content and pedagogy are already present.

A further distinction concerns the depth of change a technology brings. Puentedura's SAMR model separates substitution and augmentation, where technology performs familiar tasks more conveniently, from modification and redefinition, where it allows tasks that were previously difficult or impossible. In teacher training, the first two levels are useful but limited: an online test that replaces a paper test saves time but leaves the student's professional thinking untouched. The higher levels are more promising. When students record a microteaching fragment, watch it with peers and revise it, technology makes visible something that previously escaped observation, namely the student's own teaching behaviour.

On these grounds, the author proposes a "three filters" criterion that a lecturer or department can apply when deciding whether to introduce a particular innovative technology into the training of future teachers.

The first filter is didactic purpose. The lecturer should be able to state which component of professional competence the technology is meant to develop: planning,

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communication, assessment, reflection or digital practice. If the only answer is that the technology makes the course more modern or attractive, it has not passed the filter.

The second filter is professional modelling. Because students are learning to teach, every technology used in their training is also a model. A technology passes this filter if students experience it from the learner's side and then analyse it from the teacher's side: why it was chosen, what it required, what it achieved and what it could not do. A case study discussed in class and then deconstructed as a method is an example; a quiz platform used for revision and then examined as an assessment tool is another.

The third filter is contextual fit. A technology should be realistic for the schools in which graduates will work. In Uzbekistan, conditions differ widely between well-equipped urban schools and rural schools with limited connectivity, and classes may be taught in Uzbek, Russian or Karakalpak. Preparing future teachers only for ideal conditions leaves them helpless in ordinary ones. Technologies that have low-technology versions, or that can be adapted to a single projector or to pupils' own devices, pass this filter more easily.

The three filters are deliberately simple. They do not replace a full evaluation of a technology, but they help avoid the most common errors: using a tool without a goal, using it without making it an object of professional analysis, and using it in a form that students will never be able to reproduce. Applied consistently, they shift the question from "Which technologies do we use?" to "What does each technology teach our students about teaching?".

The approach also suggests a way of judging whether innovative technologies are in fact improving competence. Counting the number of tools used in a programme says little. More informative are signs in students' own work: whether their lesson plans justify the choice of technology by a learning goal, whether they can adapt a method to different conditions, and whether their reflections on teaching practice show awareness of what a technology did and did not achieve in a real class.

Conclusion

Innovative technologies become a factor in improving the professional competence of future teachers when they are understood as reorganisations of the teaching process rather than as devices, when they integrate technological, pedagogical and content knowledge, and when they are experienced and then analysed by students as models of practice. The proposed "three filters" criterion, covering didactic purpose, professional modelling and contextual fit, offers a practical tool for selecting such technologies in pedagogical universities of Uzbekistan. Its further development will require empirical study of how the filtered choice of technologies is reflected in students' lesson planning and practice.

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