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TRAINING TEACHERS FOR EFFECTIVE USE OF NEW TOOLS AND METHODS IN THE EDUCATIONAL PROCESS

Saduova Zhanar Nuralievna,

Candidate of Pedagogical Sciences, Associate Professor
School of Humanities

International University of Tourism and Hospitality
Turkistan, Kazakhstan
e-mail:

zhanar.saduova@iuth.edu.kz

Abstract: The article is devoted to the current problem of teachers' professional development in the context of the continuous updating of educational technologies and pedagogical approaches. Key challenges faced by educators in mastering new tools and methods are examined. Principles and models of effective teacher training are analyzed, including the importance of practice-orientation, continuity, personalization, and creating a supportive environment. Special attention is paid to strategies for integrating new knowledge into daily pedagogical practice and evaluating the effectiveness of professional development programs. The conclusion emphasizes the need for a systemic approach to teacher training as a key factor for the successful modernization of education.

Keywords: teacher professional development, advanced training, new educational technologies, pedagogical methods, innovations in education, continuous learning, pedagogical mastery, digital literacy, effective teaching.

Introduction

The education system is in a state of permanent transformation, driven by both global socio-cultural changes and the rapid development of technology. New digital tools, platforms for collaboration, interactive resources, as well as innovative pedagogical methods such as blended learning, flipped classroom, project-based and

research activities, and gamification are emerging. In these conditions, the key figure on whom the success of implementing innovations and achieving modern educational outcomes depends remains the teacher. However, the mere presence of new tools and methods does not guarantee their effective application. Educators need not only to master the technical aspects of working with new resources but also to deeply understand their didactic potential, learn to organically integrate them into the educational process to increase student engagement, personalize learning, and improve educational achievements. The purpose of this article is to analyze modern approaches to training teachers for the effective use of new tools and methods, and to identify the key principles of successful professional development in this area.

Main Part

The process of integrating new tools and methods into daily pedagogical practice is inevitably associated with a number of **significant difficulties and challenges** that must be considered when planning professional development. First and foremost, **psychological barriers** play a significant role. Many teachers experience natural resistance to change, especially if existing work methods seem sufficiently effective and comfortable to them. There is a fear of technology ("technophobia"), uncertainty in the ability to master complex interfaces or new pedagogical approaches, as well as concerns that the introduction of innovations will lead to a significant increase in an already high workload. For example, a teacher with many years of experience may be skeptical about the idea of using an interactive whiteboard or an online platform, believing that it is just a "fashionable toy" that takes time away from "real" teaching, and not seeing a direct connection between the new tool and improving students' understanding of the subject.

Another serious obstacle is the chronic **lack of time**. High teaching loads, the need to fill out numerous reports, prepare for lessons, grade assignments, extracurricular activities, and homeroom responsibilities often leave teachers with extremely few free resources for focused mastery, and most importantly – for

thoughtful testing and adaptation of new tools and methods. Even if a teacher has taken courses on gamification, finding time to develop a full-fledged educational game for their subject under time pressure becomes an almost impossible task.

Added to this is the often **insufficient or ineffective organization of the teacher training process itself**. Frequently, professional development courses are formal in nature, offering theoretical knowledge detached from real school practice and specific subject tasks. For example, a general digital literacy course may not give a chemistry teacher an understanding of how to use specific chemical reaction simulators. The lack of an individual approach that considers the teacher's initial level of training, and, crucially, the lack of subsequent methodological support and the opportunity to receive consultation after completing the courses, leads to the acquired knowledge not transforming into sustainable changes in pedagogical practice (Fullan, 2021). A teacher may successfully pass the final test for the course but never start applying what they learned in their lessons due to uncertainty or difficulties encountered.

Finally, one cannot discount the **lack of necessary infrastructure and technical support** within the educational organization itself. Even the most motivated teacher cannot effectively use new digital tools without stable internet in the classroom, modern equipment, or prompt assistance from a technical specialist in case of failures. If the projector constantly breaks down, and the school Wi-Fi does not allow loading an online resource, the teacher's enthusiasm will quickly fade. Thus, the successful mastery of new things by teachers requires a comprehensive approach that considers and overcomes all these interconnected challenges.

Principles of Effective Teacher Training. For professional development programs to truly lead to change and not remain a formality, they must be based on a number of **key principles** that overcome the challenges described above. First of all, training must be **practice-oriented and relevant** to the teacher's daily tasks. This means moving away from abstract theory in favor of demonstrating and

practicing specific techniques. It is important not just to tell a physics teacher about the existence of virtual laboratories, but to show how a specific simulator can be used to conduct a laboratory experiment on the topic "Newton's Laws" for the 8th grade, what didactic tasks it solves (e.g., visualizing abstract concepts, safety), and how to evaluate student results. Teachers must clearly see how new knowledge or tools will help them solve their pedagogical problems and improve the learning of their students – only then does real motivation for mastery arise.

Closely related is the **principle of active involvement and an activity-based approach**. Passive listening to lectures or viewing presentations rarely leads to deep understanding and readiness to apply new things. Effective training implies that teachers themselves become active participants: they try working with new digital tools (e.g., creating an interactive quiz on Kahoot! or Plickers), develop lesson fragments or entire learning modules using new methods (say, planning a lesson stage in the "flipped classroom" format), discuss application scenarios in the context of their subject and the specifics of their students. The more opportunities a teacher has to "get their hands dirty" and adapt the new to themselves during the learning process, the higher the probability of its subsequent use in real practice.

Mastering something new is not a sprint, but a marathon, so **continuity and systematicity** of professional development are critically important. One-off courses, even the highest quality ones, often do not produce a sustainable effect if they are not followed by support. An effective system involves creating opportunities for continuous learning: these could be short workshops on specific tools, access to online resources, regular consultations with methodologists or more experienced colleagues. It is important that the teacher feels they are not left alone with the new technology or methodology after the formal training ends, but can receive help and advice as questions arise during its implementation.

A powerful catalyst for professional growth is **collaboration and exchange of experience** among colleagues. The creation and support of Professional Learning

Communities (PLCs) within a school or between schools allows teachers to jointly study and test new approaches, share their findings, analyze difficulties, and support each other (Darling-Hammond et al., 2020). For example, a group of primary school teachers might meet regularly to discuss the use of game-based methods in math lessons, sharing developed games and analyzing their effectiveness. Such exchange of experience often proves more valuable and motivating than formal courses.

It is also necessary to consider the **principle of personalization and differentiation**. Teachers come to training with different backgrounds, different levels of technological proficiency, different needs, and different paces of learning. A "one-size-fits-all" approach is ineffective here. Modern professional development programs should offer flexible educational pathways, the possibility to choose modules, learning formats (face-to-face, online, blended), and levels of difficulty. For example, a teacher who confidently uses basic digital tools could be offered an advanced course on creating their own educational content, while their colleague just beginning to master the computer needs a basic course on working with office programs and educational platforms.

Finally, the success of any teacher training initiatives largely depends on the presence of a **supportive environment and the active role of school leadership**. The school administration must not just declare the importance of innovation, but also create real conditions for the professional growth and experimentation of teachers: allocate time for training and exchange of experience, provide the necessary infrastructure and technical support, encourage initiatives, and not be afraid of possible mistakes during the testing phase of new things. If the school principal demonstrates interest in new technologies and methods and supports innovative teachers, it creates a favorable climate for the development of the entire teaching staff.

Models and Strategies for Training. Modern practice of teacher professional development offers **diverse models and strategies**, the choice of which depends on

the learning objectives, context, and resources. **Traditional seminars and workshops** are still relevant, but their effectiveness directly depends on adherence to the principles described above: they must be interactive, focus on specific, practically applicable skills, and provide participants with the opportunity for active practice. For example, a workshop on using the Tilda website builder to create educational web quests will be useful if teachers not only listen to a lecture but also create a prototype quest for their subject under the guidance of a trainer. For deeper and more personalized support, **coaching and mentoring** are effective. Individual or group support for teachers from more experienced colleagues or specially trained pedagogical coaches allows focusing on the specific needs and difficulties of the educator, helping them integrate new knowledge and skills directly into their lessons (Kraft & Hogan, 2020). A coach can visit a lesson, provide feedback on the use of a new methodology, and jointly plan the next steps.

Professional Learning Communities (PLCs) play a crucial role in creating a culture of continuous learning. These can be methodological associations or initiative groups of teachers who meet regularly to jointly plan lessons, analyze student performance data, study and test new pedagogical approaches, and discuss professional literature. For example, a PLC of foreign language teachers might dedicate several meetings to studying and implementing debate technology in lessons to develop communication skills. The strength of PLCs lies in collaborative problem-solving and mutual support. **Online courses and educational platforms** provide flexibility and accessibility, allowing teachers to learn at their own pace and time. However, to increase their effectiveness, quality feedback from tutors or curators, as well as elements of interaction between participants – forums, group projects, webinars – are important.

A promising model is **Blended Learning**, which combines the advantages of online formats (flexibility, access to resources) and face-to-face meetings (live communication, joint practical work, networking). For example, a teacher can study the theoretical material on project-based learning online, and during a face-to-face

meeting, a group of teachers will develop and defend projects of learning modules based on this methodology. Finally, for scaling training within an organization, the **"Training of Trainers" (ToT) model** is used. Within this model, an in-depth training is first provided to a group of the most motivated and prepared teacher-leaders (future trainers), who then train their colleagues in the school or region. This not only allows disseminating knowledge to a wider circle of educators but also forms an internal pool of methodologists and mentors, ensuring the sustainability of the professional development system. The choice and combination of these models allow for building flexible and effective learning pathways for different categories of teachers.

Evaluation of Training Effectiveness. A key, but often underestimated, aspect of professional development programs is the **assessment of their actual effectiveness**. The approach to evaluation cannot be limited to formal testing of knowledge about new tools or methods at the end of the course. A teacher might brilliantly pass a test on using an interactive whiteboard but never start using it in lessons due to technical difficulties or lack of confidence. Therefore, the true effectiveness of training is manifested in **real changes in pedagogical practice**. To assess these changes, complex methods must be used: purposeful observation of lessons (possibly using special checklists or protocols), analysis of teaching materials developed by teachers (lesson plans, didactic aids, assignments on online platforms), study of student work products (e.g., the quality of completed projects after the teacher was trained in project methodology). Analysis of this data helps to understand how deeply new approaches are integrated into the teacher's work.

Ultimately, the goal of any professional development is the **improvement of student learning outcomes**. Assessing this impact is the most challenging task, as student achievement and development are influenced by many factors, and isolating the contribution of a specific teacher training program is difficult (Guskey, 2022). Nevertheless, it is important to strive to track the dynamics of indicators that may be related to the implementation of new methods: this could be not only academic

performance but also the level of student engagement in lessons (e.g., based on surveys or observation), their meta-subject skills (critical thinking, communication, collaboration), the quality of creative or research work. Effective evaluation also necessarily involves **collecting feedback from the teachers themselves** – through questionnaires, focus groups, interviews – about their satisfaction with the training, difficulties encountered, and how they themselves assess the changes in their work. An important tool is also the **analysis of teachers' reflections**, their entries in professional journals or portfolios. A comprehensive approach to evaluation, covering different levels – from the teacher's reaction to the training to the impact on students – and tracking long-term effects, allows not only determining the effectiveness of a specific program but also improving the professional development system as a whole.

Conclusion

The effective use of new tools and methods by teachers is a necessary condition for the modernization of education and preparing students for life in the 21st century. This requires a transition from formal, one-off professional development courses to the creation of a holistic system of continuous professional development based on the principles of practice-orientation, collaboration, personalization, and ongoing support. Creating a culture in educational organizations that encourages innovation and professional growth, as well as focusing on real changes in pedagogical practice and their impact on students, play a key role. Investing in quality teacher training is an investment in the future of education.

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