

СЕКЦИЯ «МЕТОДОЛОГИЯ СОВРЕМЕННЫХ  
ИНФОРМАЦИОННЫХ ТЕХНОЛОГИЙ»

UDC 37.02

**Ways of development of modern educational technologies**

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Abstract:

The application of modern technologies in the field of education is explored. The problems are considered and the ways of development of modern educational technologies are proposed. The main trends in the field of EdTech are considered.

Modern educational technologies and their application are one of the most productive ways to reform the education system. In the context of digitalization of society and the rapid development of information technology, the need to introduce innovative teaching methods is increasing. Modern educational technologies, such as online courses, interactive platforms and mobile applications, can significantly improve the quality of education, improve student motivation and adapt the learning process to the individual needs of students. There are problems with the effectiveness of integrating these technologies into traditional education, as well as with the lack of uniform recommendations on their application.

With the rapid development of information technology, modern educational technologies have penetrated the educational sector, becoming a decisive force in promoting education reform and development. The study shows that modern educational technologies significantly increase the effectiveness of teaching, enrich learning resources and contribute to the optimal allocation of educational resources through multimedia learning, online education, virtual reality and intelligent learning systems [1].

The advancement of modern educational technology fosters the innovation of teaching methods. Educators can adaptively select the most appropriate teaching tools and strategies based on the content being taught and the characteristics of their students, achieving an optimal synergy between teaching and learning [2]. For example, with the aid of intelligent

teaching systems, teachers can monitor students' learning progress and comprehension in real time, allowing for timely adjustments to teaching strategies to enhance educational outcomes.

However, the integration of modern educational technology presents challenges. Key issues include ensuring the effective incorporation of technology without disconnecting it from the teaching content, developing teachers' proficiency in utilizing technology effectively, and assessing the actual impact of technology on learning outcomes. In summary, the application of modern educational technology represents a promising yet challenging area of research within the field of education.

Technology has been implemented in post-secondary education and other professional areas. For new teachers, technology is considered a necessity for learning [3]. New teachers demand it. Also, technology allows teachers to help children on a more one-on-one level. Kids want and can to learn at their own pace, but at times traditional classrooms make it hard to do so. With technology integration in education, children can slow down and go back over concepts and lessons, and more advanced kids can go ahead. Kids are digital natives. Children know technology better than most adults. It's become the easiest way they learn since it is an integral part of their life. Technology engagement in the classroom helps children not only learn better but also acquire multi-tasking skills.

There are no limitations with technology. Having access to other information outside of school material provides students with various ways of learning a concept. Teachers can come up with creative ways of teaching their students, which keep them engaged. Technology has changed the learning space, so learning is now more hands-on.

Technology can definitely help teachers do a better job, not replace them. Thus, teachers don't have to worry about the way technology is revolutionizing the field of education. As schools and teachers continue adopting a growing number of tech solutions and software development tools, it's important to consider new trends in education and how students learn. Like other sectors in today's society, the field of education should be updated with the latest technologies to meet student's needs.

Education Technology is a large industry combining Education and Information Technology. Nowadays Education Technology (hereinafter – EdTech) is a development that allows us to get more information, faster and more efficiently. Let's look at the main trends in the field of EdTech. Major trends in

EdTech are expected to change the educational landscape in 2024, offering a higher level and ways of teaching and learning.

1. Datafication. The use of learning data will continue to gain momentum at scale. The education industry has collected and used learner data in isolation for quite some time. Data policies will evolve with the next stage of analytics and deepening compliance requirements. Also, industry interconnectedness will facilitate and streamline data sharing to help education stakeholders gain refined insights into existing and future learning requirements. EdTech organizations must create compliant data collection and usage policies, and ensure that users are informed and consent to such data collection.

2. Neuroeducation. Traditionally, education delivery and knowledge acquisition have remained separate entities. Neurodidactics forms a bridge between pedagogy and neuroscience and lays the foundation of the premise that any generation cannot be taught with the techniques that worked for the preceding generation. The availability of data-backed teaching methodologies based on the principles of neuroscience adds significant value to the learning ecosystem. The combination of artificial intelligence, data analytics, and neuroscience is a powerful tool to hyper-personalize learning journeys for fast and slow learners while ensuring that there are no learning gaps. In the era of infobesity, staying updated on the latest scientific findings and ways to translate them into teaching techniques will be a potent differentiator.

3. Blended learning. Digitization has significantly transformed education models and will continue to do so in 2024. Further penetration of EdTech will drive blended learning experiences. In-classroom, remote, on-the-move, and many other techniques, when combined, will improve knowledge acquisition, and enhance the efficiency of the course/learning module. EdTech organizations must facilitate blended education, where learners can choose their preferred learning modes while maintaining equitable learning progress.

4. Massive Artificial Intelligence adoption. Technologies such as Natural Language Processing, Machine Learning, and Large Language Models will facilitate the creation of hyper-personalized digital spaces. The evolution of assistive technologies will help create learner-centric virtual and real-life classrooms with flexible instruction techniques to address the unique learning needs of every individual. While Artificial Intelligence adoption is one of the most actively ongoing processes in the education

industry, it's time to go beyond predictive Artificial Intelligence. EdTech organizations must prepare to incorporate generative and super Artificial Intelligence for the best educational results.

5. Enveloping learning experiences. Augmented, Virtual, and Extended Reality technologies will empower education providers to deliver immersive experiences with different levels of abstraction. The quantum leap will add to the thrill of navigating virtual terrains among students and improve engagement. Executing tasks and active participation in learning will further intensify the gamification of learning experiences. Additionally, participation in simulated environments will create unique learning journeys. Making interoperable immersive education devices accessible and affordable is a collaborative mission for the learning and technology industries to transform education [4].

6. Cloud platforms lending ubiquity to education. The coming year will witness a further rise in interoperable cloud-based learning material. This will facilitate continued learning through mobile devices, offering learners a wide spectrum of learning resources worldwide. This will further deepen the penetration of online learning. Tapping into the potential of cloud computing can significantly elevate data management, user privacy, and teaching-learning experiences while facilitating information exchange among educators.

7. Learning with wearables. Education wearables possess the potential to revolutionize learning environments. They will simplify tracking progress, reminding students and educators regarding deadlines and lessons/modules that need focus, and offering real-time feedback. These devices can transform how students record notes and interact with their peers and teachers. As learning becomes more experiential, the overall experience will be more convenient and unified. IoT devices will add to the learner data, including learning preferences and styles, enriching the education system with relevant data and empowering the delivery of tailored education. However, making wearables affordable and comfortable for learners at all levels requires considering the physical and learning environments of learners of different age groups.

8. Microlearning and Massive Open Online Courses (hereinafter – MOOCs) will gain more traction. While it is no secret that short and spaced bursts of knowledge witness better retention, MOOCs provide greater control over what an individual chooses to learn. Educational institutions are increasingly integrating microlearning modules to facilitate

learning and teaching to improve learning outcomes. Additionally, emerging online platforms are providing undergraduate and postgraduate degrees to promote a culture of continued self-driven education. These facilitate homeschooling and help learners align education with their short- and long-term goals.

Educational technology organizations must provide the technology to create modular and micro-courses to facilitate education across learning levels, while standardizing fully online courses for real-world relevance and application. In the event of a decline in applications to higher education institutions and a shortage of faculty, educational technology organizations can fill the gap by offering specialized courses.

The development of modern educational technology has brought new opportunities and challenges to domestic education and teaching. By enriching teaching resources, diversifying teaching methods, and personalized learning, modern educational technology has provided strong support for improving the quality of domestic education and teaching, and also promoting the all-round development of students in high education.

In order to comprehensively promote the innovation and deepening application of modern education technology, we urgently need to increase our strategic investment in information technology in education, not only upgrading the hardware facilities, such as high-speed networks, smart classrooms and cloud-based learning platforms, but also constructing a stable and highly efficient network environment, so as to provide teachers and students with a seamless learning experience. At the teacher development level, IT competency training has been strengthened to comprehensively enhance teachers' IT literacy through regular seminars, online courses and hands-on exercises, enabling them to flexibly utilize technological tools to innovate their teaching mode.

At the same time, we focus on the development of students' information literacy and independent learning ability, integrating IT into the curriculum system so that students not only master the use of technological tools, but also have a deeper understanding of the value of information, critical thinking and effective communication skills. Optimize educational resources to ensure that the content is both cutting-edge and relevant, to meet different learning styles and needs, and to promote personalized learning.

Especially crucial is the commitment to educational equity, the use of modern educational technology to break down geographical and economic

constraints, provide high-quality educational resources to remote areas and weak schools, narrow the urban-rural and inter-school gaps, so that every child can enjoy the light of quality education. To sum up, in-depth study and effective application of modern educational technology is a sure way to lead the modernization of education, improve the quality of education, and cultivate composite talents who can adapt to the needs of the future digital society.

### **List of sources used**

1. Duan Haitao Analysis of the application of modern educational technology in computer teaching in colleges and universities [J]. Information System Engineering. – 2024. – № 9. – P. 165–168.

2. Ma Xinping A preliminary study of interactive teaching in primary school language wisdom classroom [J]. Journal of Science. – 2022. – P. 130–132.

3. Li Bingchun Modern Educational Technology Application (Twelfth Five-Year Plan Textbook for General Higher Education). – 2014. – P. 32–37.

4. Xiang Yuhe. Application of Modern Educational Technology in Primary School Mathematics Teaching Most Cartoon. School Physical Sound and Beauty. – 2018. – P. 123–133.

UDC 37.02

### **The role of modern information technology in education**

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Abstract:

The value of PowerPoint, micro-lessons, Artificial Intelligence, Flash animation and online learning in education is emphasized in order to increase teachers' awareness of information technology and promote their deeper integration into education.