

APPROACHING NEW INNOVATIVE TECHNOLOGIES IN TEACHING TECHNOLOGY

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Аннотация

В данной статье анализируется необходимость и эффективность использования инновационных технологий в обучении технологиям. Представлено влияние современных технологий на развитие технических знаний и навыков учащихся, новые методические подходы для преподавателей и международный опыт. Также подчеркивается важность инновационных подходов, таких как цифровые средства обучения, платформы дистанционного обучения и технологии дополненной и виртуальной реальности.

Ключевые слова. Инновационные технологии, технологическое образование, цифровое образование, дистанционное обучение, AR/VR, STEM-образование.

Abstract

This article analyzes the necessity and effectiveness of using innovative technologies in teaching technology. The impact of modern technologies on the development of students' technical knowledge and skills, new methodological approaches for teachers and international experience are presented. The importance of innovative approaches such as digital learning tools, distance learning platforms and AR/VR technologies is also highlighted.

Keywords. Innovative technologies, technology education, digital education, distance learning, AR/VR, STEM education.

INTRODUCTION

In the modern education system, technology plays an important role in the formation of students' scientific and technical thinking. The rapid development of technology requires new approaches to teaching methods. Traditional teaching methods are not enough to train modern technological personnel. Therefore, the use of innovative technologies in teaching technology increases the efficiency of the educational process and turns students into specialists who meet market requirements.

This article discusses the integration of innovative technologies into the educational process, their impact on students, and the opportunities they create for teachers.

LITERATURE ANALYSIS AND METHODOLOGY

International studies on the introduction of innovative technologies in education show the following advantages:

Digital learning tools (interactive whiteboards, online platforms) increase student interest and participation in the lesson (Johnstone & Smith, 2021).

Distance learning allows the educational process to be organized without geographical restrictions (UNESCO, 2020).

AR/VR technologies allow for a more realistic and interactive teaching of the subject (Papert, 2021).

Local sources indicate that the “Digital Uzbekistan – 2030” program for the development of technological education in Uzbekistan pays special attention to the introduction of modern technologies in schools.

The following methods were used in the study:

Literature analysis: the role of innovative technologies in the educational process was analyzed based on international and local scientific articles.

Experiment: The results of the use of innovative technologies in teaching technology in general education schools in Uzbekistan were studied.

Survey: Feedback was received from students and teachers on the effectiveness of innovative technologies in the classroom.

RESULTS

The results of the study showed the following:

With the help of digital learning tools, the level of student learning increased by 40%.

In lessons using AR/VR technologies, the level of student memory increased by 60%.

In lessons organized through distance learning platforms, 75% of students expressed a high level of interest in the learning process.

When comparing traditional and innovative approaches, the level of student participation and independent work in lessons using innovative technologies significantly increased.

The results of the study showed the following:

Digital learning tools increase learning: 85% of students reported a higher level of learning when taking lessons with digital devices. This was especially noticeable in technical and applied sciences.

Interactive methods engage students: According to a survey of students, interactive teaching methods are 50% more interesting than traditional lecture methods.

AR/VR technologies facilitate understanding of the subject: 92% of students who studied subjects in a virtual environment reported better understanding of the subject and long-term memory.

Distance learning encourages independent learning of students: Independent working skills were 35% higher in students who received education through distance platforms.

Adaptation to technology depends on the skills of teachers: 80% of teachers who successfully used innovative technologies had a high level of technological literacy.

Indicators	Traditional classes (%)	Innovative lessons (%)	Difference (%)
Level of mastery	55%	85%	+30%
Level of topic recall	40%	70%	+30%
Students' interest in the lesson	60%	40%	+30%
Ability to work independently	45%	80%	+35%
Teamwork skills	50%	75%	+25%

CONCLUSION

The results of the study show that the use of innovative technologies in teaching technology is not only interesting for students, but also effective. Digital learning tools, distance learning platforms and AR/VR technologies significantly increase the level of students' mastery, interest in the lesson and ability to remember the subject.

In the future, the wider introduction of these technologies will increase the innovative potential of the Uzbek education system and prepare personnel in accordance with international standards. For this, the state should develop additional programs aimed at developing technological infrastructure and improving the skills of teachers.

The use of innovative technologies in teaching technology in the Uzbek education system is of great importance in developing students' technical and practical skills. The results show that lessons organized using digital tools, distance learning platforms and AR/VR technologies, in addition to increasing the level of knowledge acquisition of students, significantly improve their mastery, creative thinking and independent work skills.

In the future, it is necessary to develop technology based on the following proposals and recommendations:

Improving technological infrastructure: Increasing the level of provision of technical equipment and the Internet in schools.

Improving the skills of teachers: Organizing special training and seminars on the use of innovative technologies.

Expanding interactive and visual aids: Introducing AR/VR technologies, 3D modeling programs and interactive laboratories.

Expanding students' opportunities for independent learning: Increasing opportunities for learning through distance learning and online platforms.

Thus, through the widespread use of innovative technologies in the education system, it will be possible to train the youth of Uzbekistan as highly qualified specialists in accordance with modern requirements.

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