

METHODOLOGY OF USING INNOVATIVE TECHNOLOGIES IN TEACHING PHYSICS

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Abstract

The process of teaching physics in higher education is one of the important aspects of the modern education system. Physics, with its place among the natural sciences, helps students understand the laws of nature, study physical processes and understand their application in practice. However, today the use of innovative technologies in the educational process is becoming increasingly important in teaching physics. This article provides information on how to effectively use innovative technologies in teaching physics in higher education.

Keywords: Physics, innovative technologies, students, methods, research, presentations, videos, simulations, interactive programs.

Introduction

Physics is one of the subjects that many students find interesting, but sometimes seem complicated. Teachers need to use innovative technologies to increase students' interest in physics and engage them in learning. Innovative technologies play an important role in updating the teaching process and increasing students' learning efficiency. They provide interactive and interesting methods that help students understand complex theories.

LITERATURE REVIEW AND METHODOLOGY

Innovative technologies, interactive teaching methods, multimedia tools, distance learning platforms, and approaches such as gamification can enhance communication between teachers and students and update the teaching process.

Abdullaeva provides theoretical foundations and practical examples of the use of innovative technologies in the educational process. She emphasizes the effectiveness of using interactive methods, multimedia and online platforms in the educational process. Abdullaeva demonstrates the possibilities of establishing effective communication with students through innovative technologies and encouraging their active participation.

Murodov provides information on the use of modern technologies in teaching physics and their pedagogical effectiveness, and suggests new methods of teaching physics using virtual laboratories, simulations and interactive programs. Kadirov analyzes the use of interactive teaching methods in higher education and emphasizes the importance of encouraging students to participate actively through the use of methods such as problem-based learning, group work and discussions. With the help of interactive methods, students develop their skills in expressing their thoughts and solving problems.

Tashkentov's scientific research provides information on innovative approaches to teaching physics and their role in the educational process. He shows how the teaching process can be made more effective by integrating modern technologies. Through innovative approaches, students will have the opportunity to consolidate their knowledge.

This literature helps to study and put into practice various aspects of the use of innovative technologies in teaching physics in higher education. Each work offers teachers new ideas and approaches in using modern teaching methods.

Interactive educational technologies ensure active participation of students in the lesson. Teachers can use various interactive tools in the lesson process. For example, elements such as presentations, videos, simulations, and games help to show students the processes of physics. These methods allow students to apply their theoretical knowledge in practice and encourage them to learn. Interactive learning enhances communication between students and ensures their active participation in the learning process. The development of online learning platforms plays an important role in teaching physics in higher education. Teachers should provide students with the opportunity to learn independently by creating online resources and platforms for them. Online courses, video lessons, and interactive tests help students consolidate their knowledge and master new knowledge. This process enhances communication between students and creates opportunities for knowledge exchange. Online learning platforms create

comfortable conditions for students and make the learning process more effective. The use of virtual and augmented reality technologies provides an innovative approach to teaching physics. Through virtual reality, students have the opportunity to see physical processes in action. For example, students can conduct experiments and see the laws of physics with their own eyes through virtual laboratories.

RESULTS AND DISCUSSION

Teachers' professional development is important in the use of innovative technologies. Teachers can update their knowledge and skills by using new technologies in their lessons. This helps teachers improve their professional skills and meet the requirements of modern education. Organizing regular seminars, trainings and online courses for teachers will increase their ability to use innovative technologies in their lessons. By updating their knowledge and skills, teachers will be able to provide students with better quality education. The use of innovative technologies in teaching physics helps develop students' creative thinking. Through innovative methods, students can freely express their thoughts, generate new ideas and apply a creative approach to solving problems. This will help them in their personal development and future success in their fields. Developing students' creative thinking skills prepares them to create innovative ideas in the future and helps them be competitive in the modern world.

The use of innovative technologies in teaching physics in higher education is important for updating the educational process and improving the effectiveness of student learning. Teachers can increase students' interest in physics and successfully teach them by using methods such as interactive educational technologies, online platforms, virtual and augmented reality, gamification, and professional development. Innovative technologies create new opportunities in teaching physics and help to further consolidate students' knowledge.

The use of innovative technologies in teaching physics in higher education provides an individual approach to the educational process. Providing each student with materials and resources that match their learning style helps them to fully demonstrate their abilities. This process serves to develop students' self-learning abilities, independent thinking, and creative approaches. Teachers need to personalize the educational process, taking into account the individual needs of students. As a result, the use of innovative technologies in teaching physics in

higher education not only renews the educational process, but also has a positive impact on the personal and professional development of students. Teachers should help students develop their knowledge and skills by effectively using innovative technologies in their lessons. At the same time, this approach ensures the professional development of teachers and increases the quality of the higher education system. The use of innovative technologies in teaching physics in higher education plays an important role in preparing the future generation and ensuring their acquisition of modern knowledge and skills. Teachers should create new opportunities for students and make their educational process more interesting and effective by effectively using innovative technologies in their lessons. By implementing innovative approaches in their lessons, teachers have the opportunity to make student learning more engaging and effective.

CONCLUSION

In conclusion, the use of innovative technologies in teaching physics in higher education is important for updating the educational process, improving the effectiveness of students' learning, and promoting their personal development. Teachers, by effectively using innovative technologies in their lessons, play an important role in preparing the future generation as successful specialists. This process helps students consolidate their knowledge, develop their creative thinking skills, and make them competitive in the modern world.

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