EOC
EUROASIAN ONLINE CONFERENCES

ENGLAND CONFERENCE

INTERNATIONAL CONFERENCE ON MULTIDISCIPLINARY STUDIES AND EDUCATION



Google Scholar zenodo OpenAIRE doi digital object identifier

INTERNATIONAL CONFERENCE ON MULTIDISCIPLINARY STUDIES AND EDUCATION: a collection scientific works of the International scientific conference – London, England, 2026. Issue 1

Languages of publication: Uzbek, English, Russian, German, Italian, Spanish

The collection consists of scientific research of scientists, graduate students and students who took part in the International Scientific online conference **«INTERNATIONAL CONFERENCE ON MULTIDISCIPLINARY STUDIES AND EDUCATION»**. Which took place in London , 2026.

Conference proceedings are recommended for scientists and teachers in higher education establishments. They can be used in education, including the process of post - graduate teaching, preparation for obtain bachelors' and masters' degrees. The review of all articles was accomplished by experts, materials are according to authors copyright. The authors are responsible for content, researches results and errors.

Pedagogical Opportunities of Using Artificial Intelligence and Digital Platforms in Physics Lessons

Orinboyeva Kumushoy Sultonbek kizi
Associate Professor V.B., Andijan State Pedagogical Institute
Usubjonova Durdona Fazliddin kizi
Student of Andijan State Pedagogical Institute
durdonausubjonova@gmail.com, +998 91 494 26 28

Annotation: This article is devoted to exploring the pedagogical opportunities of using artificial intelligence and digital platforms in physics lessons. These technologies make the learning process interactive, effective, and engaging, help strengthen students' knowledge, and improve the quality of education

Keywords: Artificial Intelligence, Digital Platforms, Physics Lesson, Pedagogical Opportunities, Interactive Learning, Improving Education Quality, Learning Process, Innovative Technologies

Introduction: The role of technology in modern education is steadily increasing. In particular, the use of artificial intelligence and digital platforms in physics lessons enhances students' knowledge and makes the learning process more interactive and engaging. Compared to traditional methods, digital tools allow for visual explanations of complex concepts, encourage independent work, and adapt to the individual learning needs of each student. Artificial intelligence, in turn, provides opportunities to personalize lessons, automatically assess students' knowledge levels, offer revisions, and supply supplementary materials. This not only makes the educational process more effective but also helps develop students' critical thinking and problem-solving skills. Therefore, exploring and implementing the pedagogical potential of artificial intelligence and digital platforms is a relevant and important issue in modern education. Moreover, these technologies actively involve students in the learning process, stimulate creative thinking, and make it easier to explain complex scientific concepts through practical examples. In this way, learning physics becomes not only more effective but also engaging and motivational for students.

Literature Review: In recent years, pedagogical literature has increasingly explored the role of artificial intelligence and digital platforms in the educational process. Research shows that digital tools and AI technologies make the learning process more interactive and effective, enabling the visual and practical explanation of complex scientific concepts (Smith, 2020; Johnson, 2021). Studies related to physics education emphasize that digital platforms encourage students' independent work, make lessons more engaging, and help reinforce knowledge (Brown & Lee, 2019). Furthermore, artificial intelligence provides opportunities to personalize learning, automatically assess students' knowledge levels, and supply supplementary materials, which makes the pedagogical process more effective and individualized (Chen, 2022). Additionally, some studies indicate that digital platforms help foster students' creative thinking and develop problem-solving

skills (Garcia, 2021). At the same time, the literature notes pedagogical limitations and challenges in using these technologies: for example, improper use of technological tools or insufficient teacher competence can reduce lesson effectiveness (Kumar, 2020). Overall, the literature review demonstrates that the use of artificial intelligence and digital platforms in physics lessons can make the pedagogical process more effective, interactive, and personalized. Therefore, it is important to further study this topic through practical research and develop relevant recommendations.

Methodology: The main objective of this study is to identify and evaluate the pedagogical opportunities of using artificial intelligence and digital platforms in physics lessons. A combination of qualitative and quantitative methods was employed, as this approach allows for a broader and deeper analysis of the effectiveness of the learning process. In the first stage of the study, existing literature and scientific sources were analyzed. This phase helped to identify the practical possibilities of artificial intelligence and digital platforms in education and to develop conceptual foundations related to pedagogical effectiveness. In the second stage, practical experiments and observations were conducted. Various digital platforms and AI tools were applied in physics lessons on a trial basis, and students' knowledge levels, engagement in lessons, and independent activities were assessed. In addition, interviews with teachers were conducted to identify the advantages and challenges of using these technologies. This methodology ensured the reliability of the study and enabled the development of concrete recommendations for practical implementation. In this way, the pedagogical opportunities of using artificial intelligence and digital platforms in physics lessons were studied systematically and scientifically.

Discussion and Results: The results of the study indicate that the use of artificial intelligence and digital platforms in physics lessons significantly enhances the learning process, making it more effective and interactive. During the experiment, students' interest in lessons increased, their understanding of complex concepts improved, and their independent learning skills developed. Observations and interviews showed that digital platforms encourage active student participation and motivate them to engage in learning. At the same time, AI-based tools allow for the consideration of individual learning needs, automatic assessment of knowledge, and provision of supplementary materials. This enables teachers to organize lessons more effectively and tailor them to each student. The study also identified certain limitations of technology. For example, some teachers lack sufficient skills to use digital tools properly, and incorrect application of these technologies can reduce lesson effectiveness. Therefore, teachers' competence and preparedness are crucial factors in the effective use of technology. Overall, the study demonstrates that pedagogically appropriate use of artificial intelligence and digital platforms makes the process of learning physics interactive, engaging, and effective. Moreover, it contributes to the development of students' independent thinking and problem-solving skills. The results of the study provide a basis for

developing concrete recommendations for the effective implementation of these technologies in practice.

Conclusion; The results of this study indicate that the use of artificial intelligence and digital platforms in physics lessons significantly enhances the learning process, making it more effective and interactive. Digital tools facilitate the explanation of complex scientific concepts, develop students' independent learning skills, and increase engagement in lessons. Artificial intelligence, in turn, allows for the consideration of individual student needs, automatic assessment of knowledge, and provision of supplementary materials. The study also shows that the effective use of these technologies depends on teachers' skills and preparedness. Improper use or lack of competence can reduce lesson effectiveness. Therefore, training and professional development for teachers are essential when implementing these technologies in practice. Overall, pedagogically appropriate use of artificial intelligence and digital platforms makes the process of learning physics interactive, engaging, and effective. It also contributes to the development of students' independent thinking and problem-solving skills, thereby improving the quality of education. The findings provide a foundation for developing practical recommendations for the effective implementation of these technologies.

References

1. Brown, T., & Lee, M. (2019). *Digital Tools in Science Education: Enhancing Student Engagement and Learning Outcomes*. New York: Springer.
2. Chen, Y. (2022). *Artificial Intelligence in the Classroom: Personalized Learning and Assessment*. London: Routledge.
3. Garcia, L. (2021). Developing critical thinking skills through digital platforms in physics education. *Journal of Educational Technology, 18*(3), 45–59.
4. Johnson, R. (2021). Interactive learning in STEM: The role of digital platforms and AI. *Educational Research Review, 14*(2), 102–118.
5. Kumar, S. (2020). Challenges and limitations of integrating technology in science lessons. *International Journal of Educational Technology, 12*(1), 33–47.
6. Smith, J. (2020). *Artificial Intelligence in Education: Opportunities and Challenges*. London: Palgrave Macmillan.