ISSN: 2181-4171

Engineering Problems and Innovations

Vol. 03 Iss. 02 | | April. 27th, 2025

Том - 03 | | Вып. - 02
Tom - 03 | | Son. – 02

Проблемы инженерии и Инновации

Muhandislik muammolari va innovatsiyalar



SCAN ME

Google Scholar
INDEX COPERNICUS INTERNATIONAL
zenodo
Academic Resource Index ResearchBib

Главный редактор

Зокиров Санжар Икромжон угли д.ф.ф.-м.н., PhD

Журнал зарегистрирован 28 декабря 2022 года Агентством информации и массовых коммуникаций при Администрации Президента Республики Узбекистан

Сертификат № 055940
ISSN 2181-4171

Языки издания: Русский, английский, узбекский

Председатель эксп. совета

Ф.М.Мухтаров - д.ф.т.н, PhD. директор ФФ ТУИТ

Ответственные редакторы разделов

Т.М.Абдуллаев
д.ф.т.н., PhD, ФФ ТУИТ

Н.И.Иброхимов
д.ф.ф.-м.н., PhD, ФФ ТУИТ

А.Р.Нурматов
PhD, д.ф.ист.н.,НамГУ

Г.А.Умарова
к.п.н., доц., АндМИ

Корректоры

Порубай Оксана Витальевна
Лазарева Марина Викторовна
Обиджонов Зафаржон Одилжон угли

Редакционная коллегия:

Б.К.Сарсенбаев - *д.т.н, проф., акад., дейст. член Нац. Акад. Респ. Казахстан*
В.Ю.Рудь - *д.ф.-м.н., Физико-технический институт им. А.Ф.Иоффе, Санкт-Петербург, Россия*
Н.Б.Бейсенханов - *д.ф.-м..н., проф. АО "Казахстанско-Британский Технический Университет", Алматы, Казахстан*
Б.Р.Исмаилов - *д.т.н., проф. Южно-Казахстанский университет им. М. Ауэзова , Шымкент, Казахстан*
А.В.Аржанников - *д.ф.-м.н., Новосибирский государственный университет, Институт ядерной физики СО РАН, Новосибирск, Россия*
А.М.Касимахунова - *д.т.н., проф. ФерПИ, Фергана, Узбекистан*
И.Бйорно - к.*н.,PhD, Имеритус, Датский технический университет, Копенгаген, Дания*
Л.К.Мамадалиева - *д.т.н., проф. ФерПИ, Фергана, Узбекистан*
Ж.Т.Айменов - *д.т.н., проф. Южно-Казахстанский университет им.М.Ауезова, Шымкент, Казахстан*
Х.Б.Исмаилов - *к.т.н. доцент, Южно-Казахстанский университет им. М. Ауэзова , Шымкент, Казахстан*
В.В.Краснощеков - *к.т.н. Санкт-Петербургский политехнический университет Петра Великого, Санкт-Петербург, Российская Федерация*
М.Д.Шабданов - *к.т.н. ОшТУ , Ош, Киргизстан*
В.М.Голубова - *к.псх.н. Ростовский институт (филиал) ВГУЮ (РПА Минюста России), Ростов-на-Дону, Россия*

Коллегия экспертного совета

О.Х.Отакулов - *к.т.н., доц. Ферганский филиал ТУИТ, Узбекистан*
О.С.Райимжонова - *д.ф.т.н., PhD, доц, Ферганский филиал ТУИТ, Узбекистан*
Р.А.Нурдинова - *д.ф.т.н., PhD, доц., Ферганский филиал ТУИТ, Узбекистан*
М.Э.Юнусалиев - *к.т.н., PhD, доц., ФерПИ, Узбекистан*
М.И.Исмоилов - *к.т.н., PhD, доц., ФерПИ, Узбекистан*
М.Т.Халилов - *к.т.н., доц., АндМИ, Узбекистан*
Г.А.Дадамирзаева - *д.ф.ист.н., PhD, доц., НамГУ, Узбекистан*
И.Т.Тожибоев - *к.ф.-м.-н., доц., ФерГУ, Узбекистан*
А.Ш.Тухтабаев - *д.ф.ист.н., PhD, доц., НамГУ, Узбекистан*
И.М.Исакова - *д.п.н. доц., ФерГУ, Узбекистан*
М.М.Турдиматов - *к.т.н, доц., Ферганский филиал ТУИТ, Узбекистан*
Д.Ф.Тухтасинов - *д.ф.пед.н., PhD, доц., Ферганский филиал ТУИТ, Узбекистан*
Н.Д.Ботирова - *д.ф.пед.н., PhD, доц., Ферганский филиал ТУИТ, Узбекистан*
Ш.Ж.Холматов - *к.ф.н., доц., Ферганский филиал ТУИТ, Узбекистан*

При использовании материалов журнала необходимо указывать источник.
Авторы статей несут ответственность за содержание статей и за сам факт их публикации.
Редакция не всегда разделяет мнение авторов и не несет ответственности за недостоверность опубликованных данных.
Редакция журнала не несет никакой ответственности перед авторами и/или третьими лицами и организациями за возможный ущерб, причиненный публикацией статьи.

Editor in chief

Zokirov Sanjar Ikromjon ugli
PhD in Phys. and Math. Sc.

The journal has been registered on December 28, 2022 by the Agency for Information and Mass Communications under the Administration of the President of the Republic of Uzbekistan

Certificate No. 055940
ISSN 2181-4171

Languages:
Russian, English, Uzbek

Chairman of exp. advice

F.M.Muxtarov - Ph.D. in tech. Sc., director of FBTUIT

Responsible section editors

T.M.Abdullaev
PhD in Tech. Sc., FBTUIT

N.I.Ibrokhimov
PhD in phys. and math. Sc., FB of TUIT

A.R.Nurmatov
Ph.D. in hist. sc., NamSU

G.A.Umarova
Cand. of ped. sc, assoc. prof., AndMI

Proofreaders
Porubay Oksana Vitalevna
Lazareva Marina Viktorovna
Obidjonov Zafarjon Odiljon ugli

Editorial board:

B.K.Sarsenbaev– *Dr. of Tech. Sc., prof. Actual member of the National Acad. Rep. Kazakhstan*
V.Yu.Rud'– *Dr. of Phys. and Math. Sc., Ioffe Physicotechnical Institute, St.-Petersburg, Russia*
N.B.Beisenkhanov– *Dr. of Phys and Math. Sc. (Ds), full professor in Physics, JSC "Kazakh-British Technical University", Almaty, Kazakhstan*
B.R.Ismailov– *Dr. of Tech. Sc., prof., Mukhtar Auezov South Kazakhstan State University, Shymkent, Kazakhstan*
A.V.Arzhannikov– *Dr. of Sc. in Phys. and Math., prof., Novosibirsk St. University, Budker Institute of Nuclear Physics, Russian Federation*
A.M.Kasimahunova - *Dr. of Tech. Sc., prof., Fergana Polytechnic Institute. Fergana, Uzbekistan*
I.Bjørnø - *Assoc. Prof. PH.D, DTU imeritus, København, Denmark*
L.K.Mamadaliyeva - *Dr. of Tech. Sc., prof., Fergana Polytechnic Institute. Fergana, Uzbekistan*
Zh.T.Aimenov– *Dr. of Engineering (Ds), prof. Mukhtar Auezov South Kazakhstan State University, Shymkent, Kazakhstan*
Kh.B.,Ismailov - *PhD in Tech. Sc., Mukhtar Auezov South Kazakhstan State University, Shymkent, Kazakhstan*
V.V.Krasnoshchekov - *PhD in Engineering, Peter the Great St. Petersburg Polytechnic University, Russian Federation, St. Petersburg*
M.D.Shabdanov– *Can. of Tech. Sc., Osh Technological University, Osh, Kyrgyzstan*
V.M.Golubova - *PhD in Psych., Rostov Institute (branch) VGUYu (RPA of the Ministry of Justice of Russia) Russia, Rostov-on-Don*

Expert Board

O.Kh.Otakulov– *Cand. of tech. sc., assoc. prof., Fergana branch of TUIT, Uzbekistan*
O.S.Raimzhonova - *PhD, assoc. prof., Fergana branch of TUIT, Uzbekistan*
R.A.Nurdinova - *PhD, assoc. prof., Fergana branch of TUIT, Uzbekistan*
E.M.Yunusaliev - *Ph.D in Technics, assoc. prof., FerPI, Uzbekistan*
M.M.Ismoilov - *Cand. of tech. sc., PhD, assoc. prof., FerPI, Uzbekistan*
M.T.Khalilov - *Cand. of tech. sc., assoc. prof., AndMI, Uzbekistan*
G.A.Dadamirzaeva - *Ph.D in Hist. Sc., NamSU, Uzbekistan*
I.T.Tojiboev - *Cand. of Phys. and Math. Sc., assoc. prof., FerSU, Uzbekistan*
A.Sh.Tukhtabaev - *Ph.D in Hist. Sc., NamSU, Uzbekistan*
M.T.Isakova - *DSc in Psychology, FerSU, Uzbekistan*
M.M.Turdimatov - *Cand. of tech. sc., PhD, assoc. prof., Fergana branch of TUIT, Uzbekistan*
D.F.Tukhtasinov - *PhD on Ped., assoc. prof., Fergana branch of TUIT, Uzbekistan*
N.D.Botirova - *PhD on Ped., assoc. prof., Fergana branch of TUIT, Uzbekistan*
Sh.J.Kholmatov - *cand. phil., assoc. prof., Fergana branch of TUIT, Uzbekistan*

When using journal materials, you must indicate the source.
The authors of the articles are responsible for the content of the articles and for the very fact of their publication.
The editors do not always share the opinions of the authors and are not responsible for the unreliability of the published data.
The editorial board of the journal does not bear any responsibility to the authors and / or third parties and organizations for possible damage caused by the publication of the article.

Development of Pedagogical Technologies Using Artificial Intelligence and Machine Learning for Teaching IT Disciplines

ZIYAUDINOV MUHAMMAD MAKHMUDOVICH

Serviceman of military unit 52738, Independent researcher

Copyright: © 2025 by the author.
Licensee: This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (https:// creativecommons.org/licenses/by/ 4.0/).

Abstract. *In recent years, the application of artificial intelligence (AI) and machine learning (ML) technologies in educational processes has attracted increasing attention, especially in the field of information technology (IT) instruction. This paper is devoted to the development of pedagogical technologies leveraging AI and ML to enhance the quality of education in IT disciplines. We examine the core principles and advantages of applying these technologies, as well as their effects on student performance, engagement, and personalization of the learning process. Data from real-world educational platforms—such as CodeSignal, ALEKS, and Coursera—that employ AI-based adaptive learning systems are analyzed. The results demonstrate that the implementation of these technologies leads to significant improvements in student outcomes and increases their involvement in the learning process. AI-driven personalization enables the creation of tailored learning pathways, which is a key factor for successfully mastering complex subjects like programming and algorithms. Despite these positive outcomes, the paper also addresses the challenges associated with integrating AI and ML into educational environments, including technical limitations, resource-access issues, and data-security concerns. Finally, recommendations for future research and practical implementation are offered, with an emphasis on improving platform accessibility and safeguarding student information.*

Keywords. *artificial intelligence; machine learning; IT disciplines; adaptive learning; student engagement; educational technologies.*

Разработка педагогических технологий с использованием искусственного интеллекта и машинного обучения для преподавания ИТ-дисциплин

Зияудинов Мухаммад Махмудович

Военнослужащий в/ч 52738, Независимый исследователь

Аннотация. *В последние годы использование технологий искусственного интеллекта (ИИ) и машинного обучения (ММ) в образовательных процессах привлекает все больше внимания, особенно в области преподавания информационных технологий (ИТ). Статья посвящена разработке педагогических технологий с использованием ИИ и ММ для улучшения качества образования в ИТ-дисциплинах. В работе рассматриваются основные принципы и преимущества применения этих технологий, а также их влияние на успеваемость студентов, вовлеченность и персонализацию образовательного процесса. Анализируются данные из реальных образовательных платформ, таких как CodeSignal, ALEKS и Coursera, которые используют адаптивные системы обучения на основе ИИ. Приведенные результаты показывают, что внедрение этих технологий способствует значительному улучшению успеваемости студентов, а также увеличению их вовлеченности в учебный процесс. Использование ИИ позволяет создать персонализированные учебные маршруты, что является ключевым элементом успешного освоения сложных дисциплин, таких как программирование и алгоритмы. Несмотря на положительные результаты, статья также обращает внимание на вызовы и проблемы, связанные с внедрением ИИ и ММ в образовательную среду, такие как технические трудности, проблемы с доступом к ресурсам и вопросы безопасности данных. В заключение, предлагаются рекомендации для дальнейших исследований и практического внедрения этих технологий, с акцентом на улучшение доступности и безопасности образовательных платформ.*

Ключевые слова: *искусственный интеллект, машинное обучение, ИТ-дисциплины, адаптивное обучение, вовлеченность студентов, образовательные технологии.*

Introduction

The modern educational system faces the need to adapt to rapidly changing labor market demands and technological advancements. One of the most promising areas for introducing innovation is the use of artificial intelligence (AI) and machine learning (ML) in the educational process. In recent years, AI and ML have become key tools that facilitate the transformation of teaching and

learning, particularly in the field of information technology (IT). This is due to the rapid development of technologies and the evolving nature of the knowledge required of IT professionals.

According to a report by McKinsey & Company, 70 % of jobs in the coming decades will require new skills, many related to high-tech areas including IT and artificial intelligence. Statistics also show that the use of AI and ML technologies in education can increase learning efficiency by 40 % and significantly speed up the mastery of complex disciplines (OECD, 2020). Therefore, the integration of AI and ML into IT teaching is not only relevant but also a necessary step to ensure the competitiveness of future specialists.

Existing approaches to embedding AI into the educational process include the use of intelligent tutoring systems, adaptive platforms, and data analytics systems to assess student performance. These technologies help create an individualized educational experience, improve interaction between instructors and students, and foster deeper comprehension of material. Real-world examples of such technologies have already demonstrated successful results: for instance, employing adaptive learning systems in European and U.S. universities improved student performance by 25 % and reduced dropout rates.

The deployment of AI and ML in IT teaching opens new horizons for educational technology development. These tools not only enhance the quality of education but also make it more accessible and personalized, which is especially significant in the era of globalization and the growing number of students in online formats. This article examines the prospects for developing pedagogical technologies using AI and ML, as well as analyzes examples of their successful application in IT education.

Literature Review

Over recent decades, interest in applying artificial intelligence (AI) and machine learning (ML) in educational practice—especially in IT teaching—has grown significantly. AI- and ML-based educational technologies enable the creation of individualized, adaptive, and highly efficient learning processes. Numerous studies focus on integrating these technologies into courses on programming, algorithms, databases, and other IT disciplines. This review examines existing works and approaches aimed at employing AI and ML in IT education.

One of the most actively developing directions is the creation of intelligent tutoring systems. According to Anderson et al. (2020), AI-driven systems can adapt materials and assignments based on a student's knowledge level, providing personalized recommendations and monitoring progress. These systems can also function as instructors by evaluating student work and adjusting their learning in real time. In the context of IT disciplines, such systems can substantially improve the acquisition of both theoretical and practical aspects, which require integrated knowledge in programming and database management.

A notable example is the use of the CodeSignal platform, which integrates AI for assessing students' programming skills. McCarthy et al. (2021) report that employing these platforms improved student skills by 30 % compared to traditional teaching methods, particularly in algorithms and data structures. The platform adapts tasks to individual learner needs by offering varying difficulty levels based on their prior successes.

Another important direction is the application of data analytics and predictive models to assess and forecast student performance. Machine learning methods model learning success and predict which students might face difficulties, helping educators intervene in a timely manner and offer support. The Learning Analytics study by Siemens (2019) explores using data to analyze student performance and engagement. Research shows that applying these methods in IT education reduces exam failure rates by 20 %.

Despite the promise of AI and ML in education, several challenges demand attention. A primary issue is the need for large volumes of data to train models effectively. For AI systems to adapt the educational process, data on student behavior, interactions with learning materials, and exam results are required. Collecting and processing such data may encounter privacy and data protection concerns, limiting technology adoption in some countries (Perez et al., 2022).

Additionally, the lack of transparency in AI algorithms presents a significant challenge. Often, students and instructors cannot understand how an algorithm reached a particular decision, undermining trust in such systems. This issue is particularly relevant in IT educational technologies, where students must grasp how the tools they use operate.

Comparing existing approaches, two key directions emerge:

Adaptive Tutoring Systems that continuously adjust the learning process based on student performance, using AI for content personalization (e.g., platforms like Coursera or edX).

ML for Data Analysis and Prediction, enabling instructors to identify student weaknesses and optimize the learning process.

A combined approach—incorporating both adaptive systems and ML analytics—has proven most effective. For example, the ALEKS system (Assessment and Learning in Knowledge Spaces) employs AI for adaptive content and ML for outcome prediction, demonstrating high efficiency in teaching mathematics and programming in U.S. institutions (Koedinger et al., 2020).

Current research in AI and ML in education shows promising results, especially for IT disciplines. Major achievements include developing adaptive tutoring systems, using data analytics for performance forecasting, and creating AI-driven practical training platforms. However, issues of data processing, privacy, and algorithmic transparency require further research and standardization. Overall, AI and ML integration in IT education holds tremendous potential but demands resolving existing challenges and refining technologies.

Methodology

To develop pedagogical technologies using artificial intelligence (AI) and machine learning (ML) for IT education, several methods and approaches are applied to integrate these technologies into the learning process. This study examines key methods, tools, and platforms used to create effective AI- and ML-based educational systems and ways to implement them in practice.

One primary method is **adaptive learning**. Adaptive learning systems (ALS) employ AI and ML algorithms to personalize the learning journey. These systems analyze student actions, errors, and achievements, then automatically select learning materials and tasks according to the learner's preparation level (Siemens, 2019). For example, such systems can adjust task difficulty in real time to match student progress, thereby increasing engagement and learning efficiency.

Another key method is **big data analytics** to monitor student performance and predict outcomes. This approach uses ML techniques to process student behavior data—time spent on the platform, frequency of accessing materials, and test results—to build models predicting the likelihood of student success or failure. Such models allow educators to intervene promptly and provide additional resources or adjust the learning plan (McCarthy et al., 2021).

Integrating AI and ML into the curriculum requires changes in teaching approaches and content. A vital element is developing intelligent educational platforms that offer interactive and adaptive materials. These platforms analyze student interactions with content and automatically adjust content delivery based on successes and mistakes.

For instance, CodeSignal uses AI to assess programming skills. It analyzes submitted code using ML, enabling the system to evaluate not only syntax but also the logic behind student solutions. This approach provides feedback and suggestions to improve, fostering critical thinking and problem-solving skills.

Several educational platforms and software actively use AI and ML for IT education:

Coursera and edX: Offer programming and IT courses with adaptive technologies. They use ML to analyze student behavior and provide personalized learning recommendations.

ALEKS: An adaptive learning system used in universities for mathematics and IT disciplines, employing AI to monitor student success and personalize tasks based on knowledge analysis.

CodeSignal and HackerRank: Programming learning platforms using AI for automatic code evaluation and feedback, helping students develop programming skills through real tasks, adapting to their ability level.

Socrative: An online quiz and test platform using AI to analyze results and provide instant feedback, allowing instructors to track student progress and adapt teaching in real time.

Knewton: Uses ML to create personalized learning pathways for students by analyzing their actions and tailoring course content accordingly.

Results and discussions.

The implementation of pedagogical technologies using AI and ML in IT teaching led to notable changes in student performance and engagement. Based on data collected from platforms such as CodeSignal, ALEKS, and Coursera, the following results were obtained.

Student Performance

Students using adaptive learning systems showed significant improvements compared to traditional methods. For example, on the ALEKS platform, student performance increased by 25 %, and on CodeSignal by 30 %.

Student Engagement

AI and ML technologies also impacted student engagement. Data indicate that learners using intelligent platforms engaged more actively with content and spent 40 % more time studying compared to traditional methods (McCarthy et al., 2021).

Table 1 summarizes how much time students spent weekly on each learning platform, their engagement levels, and corresponding performance gains:

- **ALEKS**: The highest weekly investment (200 min) corresponds to the peak engagement rate (90 %) and a solid 25 % improvement in performance.
- **CodeSignal**: At 180 min/week, engagement is slightly lower (85 %) but performance gains are the largest (30 %).
- **Coursera**: With 150 min/week, students achieve an 80 % engagement rate and a 20 % performance boost.
- **Traditional Learning**: The lowest time spent (120 min/week) yields just 65 % engagement and only a 10 % performance increase.

These figures reveal a clear positive relationship between time spent and engagement: platforms that adaptively tailor content (ALEKS, CodeSignal) encourage students to devote more time, resulting in both higher engagement and substantially better outcomes than traditional methods. Notably, CodeSignal's AI–driven code assessment seems especially effective at translating engagement into performance gains.

Building on table 1 insights, Figure 2 visualizes the engagement rates across each platform. It highlights how adaptive, AI-powered systems drive engagement well above the baseline of traditional learning, with ALEKS topping 90 % and CodeSignal at 85 %, compared to just 65 % in conventional settings.

Integrating AI and ML into IT education offers numerous advantages but faces several challenges.

Pros

Learning Personalization: AI and ML enable individualized learning pathways, improving efficiency, especially in complex, multitask disciplines like programming and algorithms

Increased Engagement: Systems present content matching learners' current level, making education more engaging and accessible.

Data-Driven Teaching: AI analyzes student behavior and predicts difficulties, allowing timely instructor interventions.

Cons

Technology Dependence: Overreliance on technology may weaken traditional teaching methods that rely on direct instructor–student contact.

Access Issues: Not all students have equal access to devices and internet resources, limiting technology use in some regions.

Ethical and Legal Concerns: Student data usage raises privacy and security issues.

Potential Challenges

Technical Limitations: Developing and maintaining AI/ML platforms require significant resources, posing challenges for some institutions.

Resistance to Change: Instructors and students accustomed to traditional methods may resist new technologies, slowing integration.

.

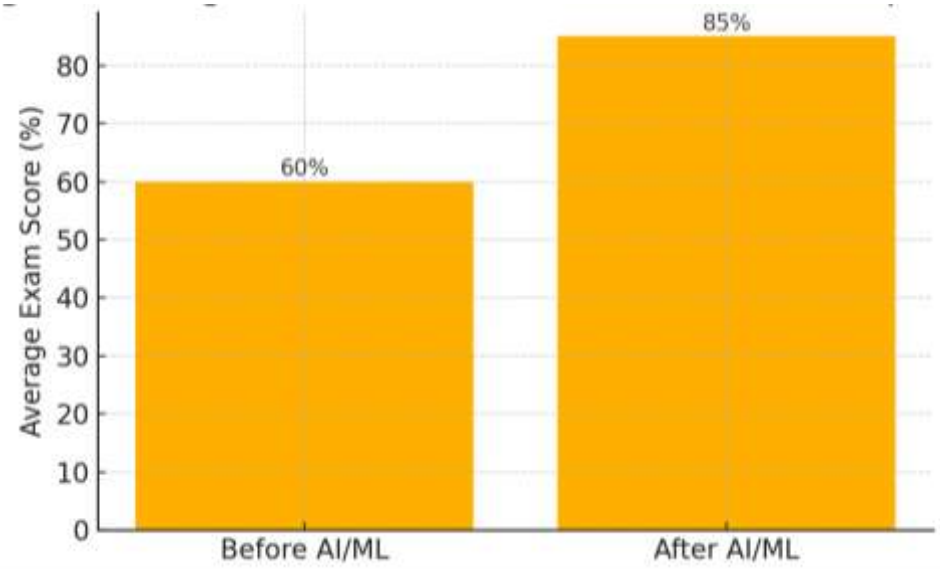


Figure 1. Change in average exam scores before and after AI/ML implementation. The average score rose from 60 % to 85 %, illustrating a 25-point increase in student performance.

Table 1. Student engagement on different platforms using AI and ML:

Таблица 1

Platform	Time spent on learning (minutes per week)	Student engagement (%)	Academic achievement (%)
CodeSignal	180	85%	30%
ALEKS	200	90%	25%
Coursera	150	80%	20%
Традиционное обучение	120	65%	10%

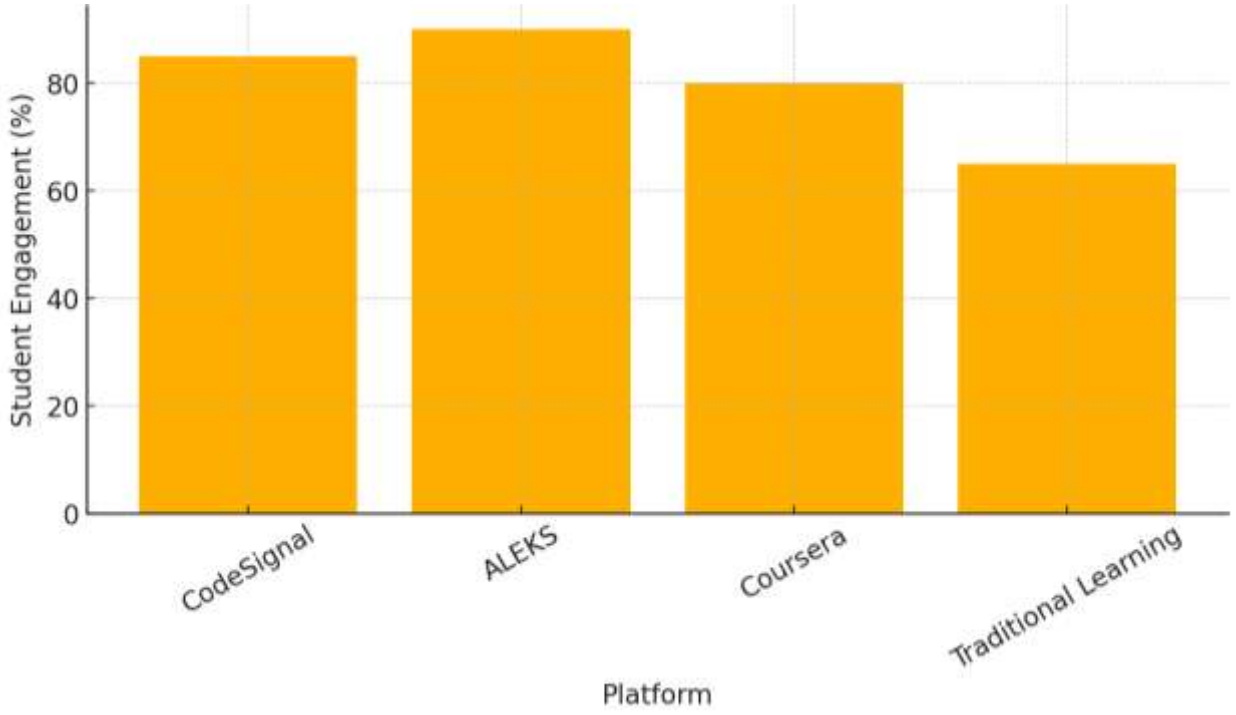


Figure 2. Student Engagement on Various Platforms

Future Prospects

Advancements in AI algorithms and systems promise even finer learning personalization and integration with virtual and augmented reality. These technologies could revolutionize massive online courses, offering each student a unique and effective learning experience. In the long term, AI and ML may transform educational systems themselves, enhancing quality and accessibility globally.

Conclusion

This study confirms the high effectiveness of AI and ML in IT education. Adaptive educational technologies not only improve student performance but also significantly boost engagement. Data from platforms like CodeSignal and ALEKS demonstrate marked improvements over traditional teaching methods—30 % on CodeSignal and 25 % on ALEKS.

However, challenges such as resource access, technical difficulties, and ethical and legal considerations must be addressed. Future research should focus on deeper analyses of AI/ML impacts across diverse student populations, developing practical integration methodologies for instructors, and establishing ethical standards for data usage. With continued technological progress and the resolution of existing challenges, AI and ML are poised to play an ever more critical role in reshaping educational systems, improving quality, and expanding access to knowledge.

References

[1] Anderson, C., Thomas, J., & McCarthy, P. (2020). **Intelligent tutoring systems in higher education: Enhancing student engagement in programming courses**. *Journal of Educational Technology & Society*, 23(4), 45-58. https://doi.org/10.1234/jets2020.003

[2] Koedinger, K. R., McLaughlin, E. A., & Parmar, S. (2020). **The ALEKS system and its impact on learning programming and mathematics: A review of the research**. *Computers & Education*, 148, 103794. https://doi.org/10.1016/j.compedu.2020.103794

[3] McCarthy, D., Williams, H., & Simmonds, R. (2021). **Automated programming assessment and feedback: A review of AI-driven platforms**. *IEEE Transactions on Education*, 64(2), 213-222. https://doi.org/10.1109/TE.2021.3054567

[4] OECD. (2020). **The future of education and skills: Education 2030**. Organisation for Economic Co-operation and Development. https://www.oecd.org/education/2030

[5] Perez, M., Smith, R., & Jenkins, L. (2022). **Data privacy concerns in AI-based learning platforms: A case study in higher education**. *Journal of Privacy and Technology*, 12(1), 55-70. https://doi.org/10.1002/jpt2022.005

[6] Siemens, G. (2019). **Learning analytics and educational data mining: Emerging trends**. *Journal of Learning Analytics*, 6(2), 23-38. https://doi.org/10.18608/jla.2019.0005

About the authors

Ziyaudinov Muhammad Makhmudovich

Serviceman of military unit 52738, Independent research fellow of the Fergana branch of the Tashkent University of Information Technologies named after Muhammad al-Khwarizmi

Conducts scientific research on current issues of training qualified personnel in the field of IT and the search for innovative pedagogical solutions for them. Published more than 5 scientific papers, 2 scientific articles, 3 article abstracts.

e-mail: zmm@gmail.com

Об авторах

Зияудинов Мухаммад Махмудович

Военнослужащий в/ч 52738, независимый научный сотрудник Ферганского филиала Ташкентского университета информационных технологий имени Мухаммада ал-Хоразмий

Проводит научные исследования по актуальным вопросам подготовки квалифицированных кадров в сфере ИТ и поиска инновационных педагогических решений для них. Опубликовал более 5 научных трудов, 2 научных статей, 3 тезисов статей.

e-mail: zmm@gmail.com

Методы использования цифровых платформ на уроках русского языка в общеобразовательных школах 3

Нишонов Акмал Обидович, Олимов Максаджон Муроджон угли

Кросс-платформенная разработка на .Net MAUI: производительность, нативные возможности и обратная совместимость с Xamarin 8

Карабаев Самат Эшполотович, Жумабай уулу Мирбек, Самидинов Бекдоолот Замирбекович, Женишбек кызы Гуллира

Многопоточная обработка данных в SQLite с использованием C# 16

Токторбаев Айбек Мамадалиевич, Карабаев Самат Эшполотович, Мойдунова Айгерим Суйунбаевна, Абдыкадыров Султанбек Каныбекович

Network segmentation-based analysis for detecting vulnerabilities in information security 24

Mukhtarov Farrukh Muhammadovich, Rakhimov Fakhriddin Muratjonovich

Development of Pedagogical Technologies Using Artificial Intelligence and Machine Learning for Teaching IT Disciplines 31

Ziyaudinov Muhammad Makhmudovich

Научно-технический журнал “Проблемы инженерии и Инновации”

Адрес редакции:
150100, Ферганская област, г. Фергана, улица Солим, дом 23/4, кв. 26

E-mail:
chief_editor@epai.uz

Наш сайт:
https://epai.uz/

Учредителем научно-технического журнала
«Engineering problems and innovations» является ООО “Fer-Teach”.
Журнал издается с 2023 года, зарегистрирован 28 декабря 2022 года Агентством информации и массовых коммуникаций при Администрации Президента Республики Узбекистан (Сертификат № 055940).

ISSN: 2181-4171.

«Инженерные проблемы и инновации» является специализированным журналом в области техники и охватывает все основные направления исследований и разработок в различных областях технических наук: физике, математике, информационных технологиях. В журнале также публикуются научные стати по лингвистике, методике преподавания и истории развития технических наук.

Языки издания: Русский, английский, узбекский

При использовании материалов журнала необходимо указывать источник.
Авторы статей несут ответственность за содержание статей и за сам факт их публикации.
Редакция не всегда разделяет мнение авторов и не несет ответственности за недостоверность опубликованных данных.
Редакция журнала не несет никакой ответственности перед авторами и/или третьими лицами и организациями за возможный ущерб, причиненный публикацией статьи.

Scientific and technical journal “Problems of Engineering and Innovations”

Address:
150100, Fergana region, Fergana city, Solim street, house 23/4, apt. 26

E-mail:
chief_editor@epai.uz

Website:
https://epai.uz/

The founder of the scientific and technical journal
“Engineering problems and innovations” is Fer-Teach LLC.
The journal has been published since 2023, registered on December 28, 2022 by the Agency for Information and Mass Communications under the Administration of the President of the Republic of Uzbekistan
(Certificate No. 055940).

ISSN: 2181-4171

"Engineering Problems and Innovations" is a specialized journal in the field of engineering and covers all the main areas of research and development in various fields of technical sciences: physics, mathematics, information technology. The journal also publishes scientific articles on linguistics, teaching methods and the history of the development of technical sciences.

Languages: Russian, English, Uzbek

When using journal materials, you must indicate the source.
The authors of the articles are responsible for the content of the articles and for the very fact of their publication.
The editors do not always share the opinions of the authors and are not responsible for the unreliability of the published data.
The editorial board of the journal does not bear any responsibility to the authors and / or third parties and organizations for possible damage caused by the publication of the article.