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USING ARTIFICIAL INTELLIGENCE IN THE PROCESS OF TEACHING ENGLISH

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Abstract. *The aim of the article is to explore the possibilities and challenges of integrating artificial intelligence (AI) into teaching English (TE). This aim provides for solving the following tasks of research: evaluating the effectiveness of AI in improving students' learning outcomes, the potential for personalized learning, the automation of feedback, and the impact of AI on the role of the teacher; investigating the potential issues that arise in the context of AI integration, including data privacy concerns, access to technology, and the need for professional development.*

Methodology. *Achieving the goal and solving the tasks have been enhanced by using such methods of research as qualitative and quantitative analyses, case studies, survey research (the survey questions were designed to gather both quantitative data (such as the frequency of AI tool usage) and qualitative feedback (such as perceived effectiveness and ease of use), content analysis (reviewing learning platforms, mobile apps, and AI-powered language assistants to assess their educational content, usability, and effectiveness in fostering language skills), and comparative analysis.*

Scientific novelty. *It is reflected in its multi-dimensional approach to AI integration in teaching English, focusing on a specialized, non-traditional educational institution − the PAU. By exploring AI's potential in such a unique context, the research offers new insights into how AI can be applied to meet the specific professional language needs of cadets preparing for careers in the penitentiary system. This study expands the body of knowledge regarding AI in education and provides a foundation for future research and practical implementation of AI tools in specialized educational settings.*

Research results. *The article examines the integration of artificial intelligence (AI) in education, specifically focusing on TE and its implications for academic integrity. It highlights AI tools' transformative potential, such as intelligent tutoring systems, automated feedback mechanisms, and conversational agents in enhancing personalized learning, engagement, and skill development. The research provides insights into how AI supports language proficiency improvement while addressing challenges like ethical concerns, teacher training, and technical limitations. Using the PAU as a case study, the article explores the*

unique applications of AI in specialized educational settings, emphasizing the importance of ethical AI use and ongoing research.

Practical implications. *Integrating artificial intelligence (AI) in TE opens new possibilities for personalized learning, automated feedback, and improving language skills. However, the research also emphasizes the importance of maintaining academic integrity, particularly in the context of potential misuse of AI tools. Using tools such as Grammarly, Duolingo, and ChatGPT significantly enhances grammar, vocabulary, pronunciation, and writing proficiency. Interactive platforms adapt to individual learners' needs, providing a flexible and effective learning environment. AI complements, but does not replace, the role of the teacher. Educators remain crucial in motivating students, offering emotional support, and addressing complex issues beyond AI's capabilities. Successful AI integration requires teacher training to use these technologies effectively. Technical difficulties, limited technological access, and AI's inability to fully understand cultural context need attention. Ethical concerns, such as data privacy and preventing algorithmic biases, remain important issues.*

Value (originality). *The value of the study is characterized by the presentation of evaluating the effectiveness of AI in improving students' learning outcomes, the potential for personalized learning of English, the automation of feedback, and the impact of AI on the role of the teacher; investigating the potential issues that arise in the context of AI integration, including data privacy concerns, access to technology, and the need for professional development for teachers.*

Key words: *AI in education, teaching English (TE), academic integrity, personalized learning, intelligent tutoring systems, automated feedback, ethical AI use.*

ЗАСТОСУВАННЯ ШТУЧНОГО ІНТЕЛЕКТУ В ПРОЦЕСІ ВИКЛАДАННЯ АНГЛІЙСЬКОЇ МОВИ

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Мета статті *– дослідити особливості та труднощі застосування штучного інтелекту (ШІ) у процесі вивчення англійської мови (АМ). Ця мета передбачає виконання таких* ***завдань*** *дослідження: визначити ефективність ШІ у підвищенні рівня успішності студентів, оцінити можливості індивідуального навчання, автоматизації зворотного зв'язку та вплив ШІ на діяльність викладача; дослідити проблемні фактори, що виникають під час застосування ШІ, зокрема питання забезпечення конфіденційності даних, доступу до використання технологій, а також необхідність підвищення професійного розвитку.*

Методологія. *Досягненню мети та виконанню поставлених завдань сприяло використання таких методів дослідження, як якісний та кількісний аналіз, кейс-метод, анкетування (питання анкети були розроблені таким чином, щоб зібрати як кількісні дані (наприклад, частота використання інструментарію зі штучним інтелектом), так і якісний зворотний зв'язок (наприклад, сприйняття ефективності та простоти використання), контент-аналіз (огляд навчальних платформ, мобільних додатків та мовних асистентів зі штучним інтелектом з метою оцінювання їхнього освітнього контенту, зручності використання та ефективності в розвитку мовленнєвих навичок), а також компаративний аналіз.*

Наукова новизна. *Полягає в багатовимірному підході до інтеграції штучного інтелекту у викладанні англійської мови у спеціалізованому освітньому закладі – Пенітенціарній академії України (ПАУ). Вивчаючи потенціал штучного інтелекту в цьому контексті, дослідження пропонує нове розуміння того, як ШІ може бути застосований для задоволення специфічних професійних іншомовних потреб курсантів і студентів, які здобувають освіту для роботи в пенітенціарній системі. Це дослідження не лише розширює обсяг знань про використання штучного інтелекту в освіті, зокрема в навчанні іноземних мов, а й закладає основу для майбутніх досліджень і практичного впровадження інструментів штучного інтелекту у спеціалізованих освітніх закладах.*

Результати дослідження. *Стаття досліджує інтеграцію штучного інтелекту (ШІ) в освіту, зокрема в процес викладання англійської мови, та її вплив на академічну доброчесність. Розглядається потенціал ШІ у створенні персоналізованого навчання, автоматизованого зворотного зв'язку та підвищенні залученості студентів. У дослідженні проаналізовано переваги використання ШІ для розвитку іншомовної комунікативної компетентності, водночас звертається увага на виклики, зокрема етичні питання, технічні проблеми тощо. У статті акцентується увага на специфіці застосування ШІ у спеціалізованих освітніх закладах, зокрема в Пенітенціарній академії України, підкреслюючи важливість етичного використання технологій і продовження наукових досліджень у цій сфері.*

Практичне значення. *Інтеграція штучного інтелекту (ШІ) в ТЕ створює нові можливості для персоналізованого навчання, автоматизованого зворотного зв'язку та покращення володіння іноземними мовами. Однак дослідження також підкреслює важливість дотримання академічної доброчесності, особливо в контексті потенційного зловживання інструментами ШІ. Використання таких інструментів, як Grammarly, Duolingo і ChatGPT значно покращує знання граматики, словниковий запас, володіння вимовою і письмом. Інтерактивні платформи адаптуються до індивідуальних потреб користувачів, забезпечуючи гнучке й ефективне освітнє середовище. ШІ доповнює, але не заміняє роль учителя. Викладачі мають вирішальний вплив на мотивацію студентів, надають емоційну підтримку та сприяють розв'язанню складних питань, які виходять за межі можливостей ШІ. Успішна інтеграція штучного інтелекту вимагає підготовки ви-*

кладачів для ефективного використання цих технологій. Потребують уваги технічні труднощі, обмежений доступ до технологій і нездатність штучного інтелекту повністю розуміти культурний контекст. Важливими питаннями залишаються етичні проблеми, такі як конфіденційність даних і запобігання алгоритмічним упередженням.

Цінність (оригінальність). *Цінність дослідження характеризується оцінюванням ефективності ШІ у покращенні результатів навчання студентів, потенціалу для персоналізованого вивчення англійської мови, автоматизації зворотного зв'язку та впливу ШІ на роль викладача; дослідженням потенційних проблем, що виникають у контексті використання ШІ, включно з проблемами безпеки даних, доступу до технологій та необхідності професійного розвитку.*

Ключові слова: *ШІ в освіті, викладання англійської мови, академічна доброчесність, персоналізоване навчання, інтелектуальні системи навчання, автоматизований зворотний зв'язок, етичне використання ШІ.*

Relevance of article. The widespread use of artificial intelligence (AI) in higher education has sparked serious debate about academic integrity. The integration of AI in the field of teaching foreign languages, particularly in teaching English (TE), has become a transformative force in the modern educational sphere of the role of AI in TE, exploring its potential benefits, obstacles, and implications for both learners and teachers. The main areas of study on this subject include AI-based language learning tools, personalized learning, and automated feedback.

The development of artificial intelligence technologies has led to its widespread use in various fields, including education. In the context of foreign language teaching, artificial intelligence can change traditional methods by offering an individualized approach to learning, real-time feedback, and an effective environment for practical foreign language learning. T. N. Fitria studies AI in the teaching and learning process, and her research draws on library research results [11]. She shows that AI is widely used on various educational technology platforms: Global courses (*Google AI, edX, Alison, Khan Academy, MOOCs, Udemy, Udacity, Coursera), Siri (Apple), and Cortana (Microsoft)*), smart content, translator for creating presentations, virtual tutor, voice assistant (automatic assessment, personalized learning, Google Assistant (Google), educational games, intelligent tutoring system or intelligent automated learning [11].

The use of artificial intelligence technologies in TE is not just about facilitating tasks but about improving the learning process through adaptive systems that take into account the individual needs of students (Crompton et al. (2024); Xiaohong et al., W. (2021, February)). At the same time, the implementation of artificial intelligence in the educational process is associated with several challenges that need to be addressed to achieve equitable and effective use (Canbek et al. (2016); Fitria et al. (2021)).

Artificial intelligence technologies used at TE include natural language recognition, chatbot development, machine learning, and intelligent learning algorithms. These programs allow students to learn in an interactive, dynamic learning environment that adapts to their development and needs.

Analysis of significant research and publications. Several scholars and researchers have thoroughly studied the interaction between artificial intelligence and academic integrity, paying special attention to ethical standards, anti-plagiarism, and artificial intelligence tools in educational institutions. As for the authors working in this area, we can highlight certain sufficient developments: H. Yang and S. Kyun (2022) study current trends in the study of artificial intelligence in teaching foreign languages. AI is contributing to the teaching and learning of foreign languages with research showing that AI can help develop language skills, such as Z. Xu, K. Wijekumar, G. Ramirez, X. Hu, and R. Irey (2019) study reading comprehension; T. N. Fitria (2021) investigates the process of paraphrasing and editing written work in English; R. et al. (2023) investigate technology-enhanced feedback for second language writing based on activity-based theory; D. et al. (2015) study vocabulary learning in multiplayer online games; S.- C. C. Liu and P.-Y. Hung (2016) analyze how to teach English pronunciation using computer-assisted pronunciation support; S. D. Noviyanti (2020) analyses the correction of English pronunciation; S. Lo (2023) writes about neural network machine translation in English for Specific Purposes classes; S. Koltovskaia (2020) draws attention to the involvement of students in automated written feedback provided by Grammarly; teaching and learning activities S. Pokrivčáková (2019) studies automatic marking,

feedback, adaptive educational experience, intelligent learning and prediction systems; N.-Y. Kim (2022) studies mobile learning systems using artificial intelligence and others.

J. Lockwood (2014). N. McNulty (2023), C. Chen (2023) and others have studied the effectiveness and reliability of AI-based assessment systems, comparing them with traditional human assessment methods and exploring the potential opportunities and limitations of automated assessment. AI in assessment, including speech recognition and plagiarism identification, can facilitate assessment, reduce workload, and enable data-driven decision-making.

Ethical issues regarding introducing artificial intelligence into everyday life should be thoroughly considered [5]. This requires studying the impact of AI on human lives and society. V. Dignum (2017) emphasizes the importance of upholding public values, considering moral and ethical implications, and ensuring confidentiality in the process of reasoning about AI; S. Tatineni (2019); K. et al. (2021); F. Osasona et al., O. A. Farayola and B. S. Ayinla (2024); O. Akinrinola and P. Bozanis (2024) raises the issue of responsibility, powers, control and possibilities of violation of privacy by artificial intelligence systems.

The increasing use of AI in higher education indicates the need to study its impact on ethical, social, and educational trends in this field [4; 17]. V. Bozhenko and K. Petrenko (2022) conducted a study to ensure the proper ethical use of AI in criminal justice education, addressing the specific challenges faced in this area [1].

These researchers demonstrate a growing number of works aimed at understanding and dealing with the integrated challenges associated with using artificial intelligence in academic establishments while preserving academic integrity. They emphasize the need for continuous dialogue and strategy development to tackle these challenges effectively.

Artificial intelligence covers a wide range of technologies that can improve research processes, from data collection and analysis to writing support. Natural language recognition and machine learning can help researchers identify trends in large amounts of data, automate everyday tasks, and create written products [6–10; 12–15].

The aim of the article is to explore the possibilities and challenges of integrating AI into TE. This aim provides for solving the following **tasks** of research: evaluating the effectiveness of AI in improving students' learning outcomes, the potential for personalized learning, the automation of feedback, and the impact of AI on the role of the teacher; investigating the potential issues that arise in the context of AI integration, including data privacy concerns, access to technology, and the need for professional development for TE.

Methodology. Achieving the goal and solving the tasks of this study have been enhanced by using such methods of research as qualitative analysis (including interviews and focus groups), quantitative analysis (applied to assess the effectiveness of AI tools in improving students' language skills, particularly in pronunciation, grammar, vocabulary, and writing; using pre- and post-tests, along with surveys assessing student engagement and satisfaction), case studies (implemented AI-based tools in their English language curricula), survey research (the survey questions were designed to gather both quantitative data (such as the frequency of AI tool usage) and qualitative feedback (such as perceived effectiveness and ease of use), content analysis (reviewing learning platforms, mobile apps, and AI-powered language assistants to assess their educational content, usability, and effectiveness in fostering language skills), and comparative analysis (evaluating traditional language teaching methods against AI-integrated methods). These methods have been chosen to provide a comprehensive picture of how AI can be used in TE, as well as its benefits and challenges. In addition to these main methods, the study draws on a literature review to determine where the findings fit within the existing research and theoretical framework related to AI in education, learning foreign languages, and educational technology.

Scientific novelty. It is reflected in its multi-dimensional approach to AI integration in TE, focusing on a specialized, non-traditional educational institution − the PAU. By exploring AI's potential in such a unique context, the research offers new insights into how AI can be applied to meet the specific professional

language needs of cadets preparing for careers in the penitentiary system. This study expands the body of knowledge regarding AI in education and provides a foundation for future research and practical implementation of AI tools in specialized educational settings.

Research results. This article examines AI's impact on academic integrity, focusing on global and Ukrainian research, including at the PAU. While AI can detect plagiarism with advanced algorithms, it also risks enabling it, as students and researchers might misuse AI-generated text, compromising originality and honesty.

In Ukraine, educational institutions, including the PAU, are grappling with AI-assisted plagiarism. Many students reported using AI tools to generate essays and reports, raising concerns among educators about maintaining academic standards. The PAU faces unique challenges, as its focus on criminal justice and rehabilitation necessitates a high level of integrity in research and academic outputs, which are crucial for informing policy and practice.

The ethical implementation of AI in higher education should be closely monitored, especially ensuring academic integrity. Essential measures include introducing AI literacy into educational programs, teaching students the basics of ethical research, and implementing strict policy measures. The PAU is building partnerships with technology providers to strengthen its academic integrity system, ensuring the quality of research in criminal justice.

Artificial intelligence tools have significant advantages in TE [2; 6–10; 12–15; 18]. *Duolingo*, an AI-powered intelligent learning system, adapts lessons to individual learners, improving their vocabulary and grammar knowledge through game-based methods. Writing tools like *Grammarly* and *ProWritingAid* provide real-time feedback for grammar, style, and spelling. According to research, *Grammarly* helps users with a beginner's level of knowledge, while *ProWritingAid* is suitable for advanced users.

Chat technologies such as *ChatGPT* and *Google Assistant* support conversational activities, providing a comfortable dialogue environment. These assistants help users identify and correct mistakes and improve their foreign language skills. Together, they

contribute to individualized learning, increase motivation, and develop practical skills in learning English.

AI-driven language learning games, such as *Kahoot!* and *Quizlet,* offer interactive ways for students to practice vocabulary and grammar. Also, AI can streamline the assessment process through automated grading systems. Tools like *ETS's Criterion* and *WriteToLearn* use natural language processing to evaluate students' writing and provide instant feedback.

AI integration in English language teaching brings innovative and effective methods to improve learning outcomes. Intelligent tutoring systems and automated assessment tools provide personalized and engaging support for students. AI tailors lessons and feedback to individual learner needs, addressing diverse language challenges. It also enhances accessibility, enabling learners with disabilities to benefit from customized resources. Automated tools streamline assessment, offering immediate feedback on writing and speaking tasks.

These technologies allow educators to focus on personalized instruction and student support. However, AI should complement, not replace, teachers, empowering them with insights into student progress. Educators can use AI to identify areas for improvement and adapt teaching strategies. Ethical considerations, including data privacy, remain critical as AI adoption grows. Ultimately, AI holds transformative potential for English language education while reinforcing the teacher's pivotal role.

As AI becomes integral to TE, addressing ethical concerns like data privacy, security, and bias is crucial [1; 3; 16–17]. Institutions must manage student data responsibly, fostering trust among learners and families. AI algorithms should be regularly assessed to avoid biases impacting learning outcomes. At PAU, where cadets train for the penitentiary system, AI tools are used to teach English. A study was conducted using qualitative and quantitative analysis, case studies, surveys, and content analysis to explore the impact of AI on language learning in this context.

The research examined how AI enhances language proficiency, engagement, and teaching effectiveness. It assessed the effectiveness of AI-powered tools, gathered instructor and student

perceptions, and identified challenges in adopting these technologies. Qualitative analysis captured the subjective experiences of both instructors and cadets, revealing nuanced insights. Interviews and focus groups highlighted how AI tools like chatbots, virtual tutors, and automated assessments are used and perceived. The findings underscore the importance of thoughtful AI integration in English education.

Also, we observed English language lessons where AI tools were used, noting how these tools were incorporated into the curriculum, how students interacted with them, and how teachers facilitated their use. We found that the teachers and instructors reported that AI tools significantly helped students revise grammar rules in language practice and personalized learning, allowing individual attention even in large classes. Cadets expressed high satisfaction with AI-driven language applications, particularly those that allowed them to practice English pronunciation and grammar at their own pace. However, some students felt that the AI tools lacked a teacher's "human touch" and could not address the emotional or motivational aspects of language learning.

Quantitative analysis was used to objectively assess the impact of AI tools on students' English proficiency. This approach provided measurable data on the effectiveness of AI-assisted language learning tools at the PAU. Cadets who used AI tools for three months were given pre- and post-tests on English vocabulary, grammar, and speaking skills. The pre-test established baseline proficiency, and the post-test measured improvements after integrating AI tools.

A survey was distributed to cadets to measure their satisfaction with the AI tools, rating their effectiveness on a scale of 1 (strongly disagree) to 10 (strongly agree). The survey included questions such as, "The AI tool helped improve my English vocabulary" and "I feel more confident in speaking English after using AI tools". The average increase in English proficiency scores from pre-test to post-test was 12,4 %, suggesting that AI tools had a measurable positive impact on language skills. Survey results revealed that 59,6 % of cadets agreed or strongly agreed that AI tools helped improve their English grammar and vocabulary. In comparison,

63,3 % felt more confident in their spoken English after using AI-powered applications.

In our research, we used a case study approach to examine in-depth how AI tools were implemented in the PAU, providing specific examples of their use in real classroom settings. The case study focused on a specific group of first-year cadets using AI-based English learning tools in their curriculum. The implementation of AI was tracked over one academic semester.

As for classroom integration, AI tools, such as speech recognition software, AI-based vocabulary apps, and grammar checkers, were incorporated into the classroom activities. Cadets used these tools for autonomous learning outside of class while teachers monitored their progress and provided additional support. We found out that AI tools allowed cadets to engage in language learning at their own pace, with immediate feedback on their performance, which helped build confidence in using English. The teachers reported using AI to complement traditional teaching methods, particularly for vocabulary building and pronunciation practice. Despite the positive outcomes, challenges included technical issues with software, insufficient teacher training in AI tool usage, and occasional student resistance to adopting technology.

The survey research was conducted among the PAU cadets, teachers, and instructors to gauge their opinions and attitudes toward integrating AI into learning English. The structured survey was distributed to both students and instructors at the academy. The questions explored their familiarity with AI, the tools they used, and their perceptions of AI's effectiveness in language learning. Both closed-ended and open-ended questions were included. It is important to say that 73,8 % of teachers and instructors believed that AI tools enhanced the learning experience by offering personalized learning paths for students. However, some expressed concerns about the need for more human interaction and the limitations of AI in handling complex language teaching scenarios. 86,4 % of cadets found AI tools helpful for self-study and practicing language skills outside the classroom. However, many cadets reported difficulties adapting to new

technologies and felt that their AI-based practice was less effective than face-to-face teacher interactions.

The content analysis was used to examine the educational content produced by AI tools used at the PAU. This analysis focused on the appropriateness, quality, and pedagogical value of the content provided by AI-powered language learning tools. We did the analysis of AI-generated exercises. The exercises, quizzes, and lessons produced by AI-based tools, such as grammar checkers and automated vocabulary trainers, were analyzed for their linguistic accuracy, educational relevance, and difficulty level. Also, we used comparative analysis, as AI-generated content was compared to traditional English language textbooks and exercises used at the academy to assess the quality and alignment with curriculum objectives. AI-generated content effectively addresses individual learner needs, focusing on areas where students typically struggle, such as grammar and pronunciation. However, some content generated by AI tools lacked cultural context and was sometimes too formulaic, making it less engaging for learners.

Conclusions and further research perspectives. The intersection of AI and academic integrity presents both opportunities and challenges. While AI can enhance research practices, it raises significant ethical concerns that academic institutions must address. Institutions like the PAU can navigate these complexities by fostering a culture of integrity and setting clear guidelines for AI use. Researchers worldwide must remain vigilant in upholding academic integrity as AI evolves. In TE, AI offers innovative approaches to improve learning outcomes through intelligent tutoring systems and automated assessment tools. These technologies enable personalized, engaging, and efficient support for cadets and students. At the PAU, AI integration has shown promise in improving language learning and student engagement. AI tools helped provide personalized learning and immediate feedback, which is particularly beneficial for cadets with varying language proficiency. However, challenges remain, such as technical issues, the need for more studying, and AI's limited capacity to address emotional and motivational aspects of learning. Despite these obstacles, AI holds significant potential to

enhance English language education in specialized settings. Thoughtful integration of AI in education should consider ethical implications, the role of educators, and ongoing research.

Continued development of AI tools tailored to students' needs is crucial to realizing its full potential in correctional education settings. This perspective highlights the multifaceted implications of AI integration in TE and underscores the importance of thoughtful implementation and continuous research.

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