FOUNDATIONS OF ETHICAL USE OF AI IN EFL ACADEMIC WRITING[1]

ЗАСАДИ ЕТИЧНОГО ВИКОРИСТАННЯ ШТУЧНОГО ІНТЕЛЕКТУ В АКАДЕМІЧНОМУ ПИСЬМІ АНГЛІЙСЬКОЮ МОВОЮ

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This paper aims to develop a framework for discussing the ethical implications of integrating Artificial Intelligence (AI) into academic writing in English as a Foreign Language (EFL), emphasising the need for a balanced and responsible use of AI technologies to maintain academic integrity and foster effective scholarly communication.

The integration of AI technologies into text production has gained significant attention, particularly regarding its ethical implications. The ethical dimensions of employing AI writing assistants include safeguarding intellectual property, minimising encryption and algorithm-related traces in texts, and addressing concerns about the devaluation of higher education. This paper focuses on the use of AI in EFL academic writing, where AI tools are increasingly spreading, affecting student learning experiences, undermining academic integrity, and requiring innovative approaches in EFL teaching methodologies. Building on the cognitive approach to defining the role of AI in the writing process by Buck and Limburg [1, pp. 8–23], who distinguish AI usage as a replacement, relief, support, or extension of human thinking, we explore the potential consequences of excessive reliance on Large Language Models (LLMs) and emphasise the importance of balancing AI-assisted text generation with human writing driven by creativity and critical thinking. We advocate for ethical AI usage and encourage critical examination and discourse among educators, researchers, policymakers, and other stakeholders involved in EFL academic writing.

By combining cognitive theories of writing with practical considerations of AI implementation, this research presents a novel perspective on how AI tools can impact writing practices, contributes new insights into the ethical use of AI in EFL writing, and provides practical recommendations to sustain academic integrity. Ultimately, we acknowledge the inevitability of AI integration in EFL writing activities while emphasising the need for establishing inclusive, equitable, and ethically sound communication environments for all writers.

Key words: *academic integrity, academic writing, artificial intelligence, critical thinking, EFL.*

Ця стаття має на меті закласти підґрунтя етичної інтеграції інструментів штучного інтелекту (ШІ) у процес написання англомовних академічних текстів з наголосом на необхідності збалансованого та відпо-відального використання технологій ШІ з дотриманням академічної доброчесності й одночасним сприянням ефективній науковій комунікації.

Етичні аспекти інтеграції технологій ШІ у створення текстів привертають значну увагу дослідників та охоплюють питання захисту інтелектуальної власності, мінімі-зації цифрових слідів алгоритмів кодування у текстах, а також осмислення проблеми зне-цінення вищої освіти. У цій статті зосеред-жено увагу на використанні ШІ в англомов-ному академічному письмі, де інструменти ШІ застосовуються дедалі ширше, змінюючи навчальний досвід студентів, підриваючи поняття академічної доброчесності, а від-так вимагаючи інноваційних підходів у мето-диці викладання англійської мови.

Орієнтуючись на когнітивний підхід до визначення ролі ШІ в процесі письма (Buck & Limburg [1, pp. 8–23]), за яким способи використання ШІ розрізняють як заміну, полегшення, підтримку або розширення людського мислення, ми досліджуємо потенційні наслідки надмірної залежності від великих мовних моделей і підкреслюємо співвідношення між текстами, згенерова-ними за допомогою ШІ, та людським пись-мом, керованим креативністю і критичним мисленням. Ми обстоюємо етичне викорис-тання ШІ й заохочуємо до його критичного вивчення й обговорення в колі педагогів, дослідників, урядовців та інших зацікавлених сторін, які причетні до англомовного акаде-мічного письма.

Поєднуючи когнітивні теорії письма з прак-тичними аспектами впровадження ШІ, це дослідження представляє новий погляд на те, як інструменти ШІ можуть вплинути на писемні практики, пропонує нове бачення етичного використання ШІ під час ство-рення іншомовних текстів й надає прак-тичні рекомендації задля забезпечення ака-демічної доброчесності. У кінцевому рахунку, ми визнаємо неминучість інтеграції ШІ у створення текстів англійською мовою як іноземною та підкреслюємо необхідність створення інклюзивного, об'єктивного й етично захищеного комунікаційного серед-овища для всіх авторів.

Ключові слова: *академічна доброчесність, академічне письмо, англійська мова як іно-земна, критичне мислення, штучний інте-лект.*

Introduction
Research Background

The evolution of Artificial Intelligence (AI) and AI-powered writing tools has progressed from basic spell checkers and grammar checkers to advanced machine translators, automated summarising and paraphrasing tools, and sophisticated writing assistants.

These technologies are revolutionising traditional academic writing, particularly in English as a Foreign Language (EFL), where AI offers both benefits and challenges.

On the one hand, AI-powered writing tools, offering innovative solutions for improving writing proficiency and providing immediate personalised feedback, can assist in various stages of the research and

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[1] This text is proofread with ChatGPT-4, March 2023 release, to eliminate inaccuracies of non-native users of English.

writing process, from brainstorming and drafting to proofreading and revising. Large Language Models, such as ChatGPT, can be beneficial in developing a wide variety of texts in academic writing, including but not limited to the following: research articles, dissertations, essays, reports, literature reviews, research proposals, grant proposals, annotated bibliographies, book reviews, conference papers, abstracts and summaries, project statements and more, speeding up the process of writing scholarly documents.

On the other hand, the ethical considerations regarding AI integration in EFL academic writing encompass such issues as ensuring the originality and authenticity of the work, preventing plagiarism, protecting intellectual property, maintaining academic integrity, and maintaining the integrity of the academic writing process in general. Some technical concerns, such as encryption and algorithm-related traceability in AI outputs, as well as adhering to the academic writing style and distinguishing between human-created and AI-generated texts, are also essential for maintaining the standards of academic writing.

Research Questions

In this study, we explore the ethical considerations of employing AI-powered writing tools in EFL academic writing, addressing their impact on originality, quality, and authenticity of academic papers, the effective maintenance of distinctions between human and AI-generated texts, alignment with academic writing standards, necessary policies and guidelines for ethical usage, potential risks, implications for cognitive and linguistic development, and measures to prevent plagiarism and protect intellectual property. In particular, specific research questions underlying this study address the following issues:

1. How do AI-powered writing tools influence the overall quality of EFL academic writing?

2. What are the potential risks of employing AI-powered writing tools in the EFL academic writing process?

3. Can AI outputs be aligned with academic writing styles and standards?

4. Do AI-powered writing tools impact the originality and authenticity of academic papers?

5. How can the distinction between human-created and AI-generated texts be effectively identified?

6. What are the implications for writers' cognitive and linguistic development when relying on AI assistance?

7. What guidelines are necessary to ensure the ethical usage of AI in academic settings?

Research Methodology

This study employs qualitative research methods to investigate the ethical issues related to using AI-powered writing tools in EFL academic writing. The research design includes an analysis of the outlined research questions, including the perceptions of writing researchers regarding AI use and its influence on academic integrity and originality. By examining these aspects, the study aims to uncover whether AI can be ethically integrated into EFL academic writing without compromising integrity. Additionally, it addresses the impact on critical thinking and independent writing skills, and the necessary institutional policies and guidelines for ethical usage of AI.

Purpose of the Article

We **aim** to contribute to the ongoing discourse on the responsible and effective use of AI technologies in academic writing, ensuring that they enhance, rather than compromise, the writing experience.

Thesis Statement

This article explores the ethical implications of AI writing assistants in EFL academic writing and emphasises the balance between technology-equipped and human writing.

Literature Review

Recent research demonstrates that Artificial Intelligence (AI) has profoundly impacted academic writing, introducing both opportunities and challenges to scholarly communication. By examining scholarly studies on the impact of AI-powered writing tools on academic writing and the overall quality of scholarly papers, we seek to highlight the dual nature of AI in academic writing—its potential to enhance writing proficiency and its implications for sustaining the principles of academic integrity.

Enhancing Writing Skills

Considering the problem of insufficient support for students' academic writing due to increasing student numbers and diversity, Schmohl, Watanabe, Fröhlich, and Herzberg [10, pp. 168–171] propose using an AI-supported text generator to improve writing skills without heavy reliance on one-to-one mentoring. Their approach aims to provide scalable assistance, particularly in academic writing courses, to enhance students' scientific education without heavy reliance on professors' supervision.

Investigating the efficacy of AI-assisted language learning for Chinese EFL students, Song and Song [11] find significant improvements in writing skills and motivation among students who received AI-assisted instruction compared to those who were provided with traditional teaching. The study highlights AI's potential to enhance various aspects of writing, including text organisation, coherence, grammar, and vocabulary. However, it also raises concerns about contextual accuracy and drawbacks of over-reliance on AI tools.

Khalifa and Albadawy have observed that AI can improve academic writing in six key areas: generating ideas, structuring content, synthesising literature, managing data, editing, and ensuring ethical compliance [5].

Examining human-AI collaboration patterns in academic writing, Nguyen, Hong, Dang, and Huang [6, pp. 1–18] find that doctoral students

who engage interactively with AI-powered tools perform better than those who use them primarily as supplementary sources. Their findings suggest that interactive use of AI tools can enhance writing performance, pointing to the need for tailored instructional strategies.

Buck and Limburg [1, pp. 8–23] analyse AI integration in writing through Hayes's cognitive model [4, pp. 1–27], outlining four usage scenarios: AI as a substitute for human effort, a relief for routine tasks, an aid for comprehension and motivation, and an extension of thinking that enhances text quality. Their study highlights that while AI can improve the writing processes and time management, it also poses challenges related to complexity of writers' cognitive activities.

Ethical Considerations and Academic Integrity

On the other hand, the rapid advancement and spread of AI technologies poses serious ethical challenges, particularly concerning academic integrity.

Roe, Renandya, and Jacobs [8] specify three primary types of AI writing tools: machine translators (MTs), digital writing assistants (DWAs), and automated paraphrasing tools (APTs), pointing out that each category offers distinct functionalities that can assist or potentially undermine academic integrity. The study emphasises the need for clear guidelines and policies to safely manage these tools.

Seufert, Burkhard, and Handschuh [9, pp. 49–58] explore the ethical dimensions of using AI-supported environments from the angle of enhancing academic writing skills through integrated feedback models. Their study emphasises the necessity of ethically blending traditional feedback methods with AI-powered tools, ensuring that AI is used responsibly to create a comprehensive and supportive educational system for students.

Exploring the potential benefits and threats of AI in academic writing, Dergaa, Chamari, Zmijewski, and Saad [2, pp. 615–622], as well as Golan, Reddy, Muthigi, and Ramasamy [3, pp. 327–328] highlight the improved writing efficiency and quality but also emphasise the need for comprehensive ethical guidelines to ensure the authenticity and credibility of academic work, suggesting that human intelligence and critical thinking remain central to the research process.

The reviewed studies underscore the undeniable impact of AI-powered writing tools on academic discourse: while these tools offer substantial benefits, such as improved writing skills and efficiency, they also pose challenges related to harms of over-reliance on AI assistants and academic integrity. Comprehensive guidelines and ethical regulations are crucial to harness the full potential of AI in academic writing while maintaining the authenticity and credibility of academic work.

Research Methodology
Research Design

The study adopts qualitative research methods, including thematic and content analysis, to develop an understanding of the ethical implications of AI-powered writing tools in EFL academic writing. This design addresses the research questions by (1) incorporating scholarly papers and relevant literature on AI in academic writing, (2) examining current practices, gaps in policy, and recommendations for ethical AI integration, and (3) applying an analytical framework to identify key themes and ethical considerations.

Literature Review

The literature review explores the role of AI technologies in EFL academic writing, addressing the evolution of AI-powered tools such as spell checkers, grammar checkers, machine translators, automated paraphrasing tools, and digital writing assistants. It also examines the increasing prevalence of these tools in educational contexts and the ethical dimensions of their integration, including academic integrity and the need to distinguish between human-created and AI-generated texts. The sources include peer-reviewed journal articles, conference papers, books, and relevant online resources.

Qualitative Data Collection Methods

The qualitative data collection for this study involves analysing texts of different academic genres created by human writers and ChatGPT. By examining a variety of written works, we aim to compare the lexical, stylistic, structural, and thematic differences between human and AI-generated texts. This comparison aims to highlight how AI-powered tools influence the writing outputs.

Text Analysis

A comparative analysis of human-created and AI-generated texts is conducted to identify distinctive linguistic characteristics. Selected texts are compared using the linguistic analysis to identify differences in grammatical accuracy, syntactical structure, coherence, and the use of cohesive devices. Namely, the analysis includes the following aspects:

– Content analysis: Systematic review of literature to extract relevant information on ethical guidelines and institutional practices.

– Thematic analysis: Coding of sample human-written texts to identify recurring themes and patterns.

– Grammatical and syntactical aspects in native and non-native human-written texts.

– Comparison: analysing sample human-written and AI-generated texts to identify commonalities and discrepancies.

– Cohesive devices and coherence in AI-generated and human discourse.

– Features of AI-generated discourse, including strict adherence to grammatical rules, monotonous tone, lack of colloquial expressions, and cohesion.

– Deficiencies in contextual knowledge, personal experiences, and cultural understanding in AI-generated texts.

Limitations

The sample size and diversity of research materials present potential limitations due to the fact that a narrow or homogenous sample can restrict the applicability of the findings across different contexts and populations. Furthermore, technological variability poses another significant ethical challenge because AI tools differ in functionality and availability, potentially leading to inconsistent results, which can affect the reliability and validity of the study. By addressing these factors, we can ensure a more objective analysis of AI impact on EFL academic writing.

The research findings will potentially contribute to the ongoing discourse on balancing technological advancements with ethical considerations regarding AI usage and authentic language practices.

Discussion

AI Technologies as an Aid in EFL Academic Writing

In academic writing, AI tools like ChatGPT [7] can be used in developing a wide range of texts, covering diverse genres and formats that are crucial for scholarly communication. Namely, these tools can support the following areas:

– Abstracts and summaries: AI can capture the essence of the research and its key findings and thus assist in writing concise and informative abstracts and summaries for research articles, conference papers, or reports.

– Research papers: AI can help to draft and structure the content and suggest relevant sources for literature reviews. It can help to summarise existing research and identify research gaps to support a critical analysis of sources.

– Annotated bibliographies: When compiling annotated bibliographies, AI can help to summarise and evaluate each source, providing a concise overview of the relevance and quality of the referenced papers.

– Essays: From brainstorming to generating thesis statements and developing arguments, AI can enhance the clarity of essays, including argumentative, expository, descriptive, and other types of academic papers. Additionally, AI can help to organise ideas and suggest supporting evidence while maintaining a consistent tone.

– Case studies: AI can assist in writing clinical, business, and educational case studies through detailing the context, describing the case, analysing the issues, and discussing the implications and consequences.

– Conference papers: AI can help to draft proposals and abstracts for academic conferences, ensuring that they are appropriately structured, clear, and meet the specific requirements of the conference.

– Reports: AI can assist in organising data, accurately documenting procedures, and creating demonstrative visual aids.

– Dissertations and theses: AI tools can aid in formulating research questions, conducting literature searches, and refining drafts to meet academic standards.

– Presentations: AI can generate outlines and suggest visuals to effectively present information.

– Grant proposals: AI can help to clearly and persuasively articulate goals, objectives, methodologies, and limitations of the projects.

– Reviews and critiques: AI can assist in analysing and summarising academic papers, identifying gaps in research.

Apparently, AI is a versatile tool that can support various aspects of scholarly writing, ensuring that each type of text meets the required academic standards and effectively communicates the intended message. By using AI, researchers can enhance their productivity, optimise their workflow, produce high-quality scholarly documents, and save sufficient time for focusing more on critical thinking and creativity in their writing.

At the same time, while AI-powered tools can significantly improve the quality and coherence of academic papers, it is necessary to juxtapose the AI-generated content to the human-created discourse by considering the linguistic characteristics of the texts to maintain academic integrity, i.e. identify and correct potential plagiarism issues or consequences of over-reliance on AI tools, thus preserving the authenticity and originality of academic work.

Linguistic Characteristics in Human-Created Discourse

Human-created discourse, both written and spoken, relies on fundamental grammatical and syntactical aspects to convey meaningful messages. However, while native human-written texts exhibit a strong understanding of aspectual properties, functional organisation of clauses, and proper syntax, non-native human-written texts may showcase grammatical errors, unconventional word order, inappropriate prepositions or verb forms, unconventional punctuation, or inconsistencies in style. Unnatural language use in non-native human-written texts can result from linguistic patterns specific to the speaker's native language, leading to inaccuracies in conveying intended meanings. In addition, proficient language users' discourse goes beyond language skills, with cohesive devices used to establish logical connections between ideas, while non-native English users may face coherence issues due to cultural or knowledge gaps, which may result in pragmatic failures.

AI-Generated Discourse Characteristics

In contrast, AI-generated texts exhibit distinctive features that set them apart from human-created

discourse. AI strictly adheres to grammatical rules, maintaining consistent syntax and parallel structures based on statistical patterns developed on extensive training data. This precision gives AI-generated content a monotonous tone, serving as a potential indicator of its artificial origin.

On the other hand, in terms of language usage, AI-generated texts often lack natural linguistic patterns found in human-created content, presenting an excessively formal or rigid style. Cohesion in AI-generated discourse relies on statistical patterns derived from native English speakers, allowing for some level of coherence but with limitations in maintaining focus in long-term narratives. Additionally, AI-generated content lacks contextual knowledge, updated information, knowledge of current events, personal experiences, and cultural understanding, leading to occasional errors or inappropriate responses. This deficiency is evident in the occurrence of so-called "hallucinations" – inaccurate or erroneous assertions that compromise the integrity and trustworthiness of the content.

Academic Writer's Ethical Responsibility

In the context of academic integrity (avoiding plagiarism and misuse of AI-generated content), observing ethical responsibility presents specific issues due to the easier access to AI-generated content in online environments. This increases the likelihood of unintentional plagiarism or the reliance on AI-generated content fed on pre-existing texts without proper attribution.

Also, online collaboration platforms that facilitate the sharing of AI-generated or uncredited content, the vastness of online information, and the anonymity of digital environments can encourage plagiarism or the use of AI-generated material without proper acknowledgment. This complicates tracing the origin of submitted work, verifying its originality, and monitoring for unethical use of source materials.

Thus, excessive reliance on AI in academic writing could undermine genuine language mastery and proficiency, potentially leading to a decline in writers' overall linguistic competence.

Recommendations on Promoting Ethical AI Usage

As it follows from the above discussion, promotion of ethical AI usage in scholarly writing necessitates the development of comprehensive institutional policies. Academic institutions must provide explicit guidance on responsible AI usage, emphasising the importance of academic integrity, ensuring that writers understand and adhere to ethical standards when integrating AI tools into their work. It is crucial to encourage writers to use AI tools as supplements and text checkers rather than replacements for human creativity and critical thinking. In this way, authors will be guided on how to responsibly take advantage of AI while maintaining the integrity and originality of their academic work.

Mitigations

Mitigating the drawbacks associated with academic dishonesty and unethical AI usage in scholarly communication requires a holistic approach.

Firstly, in terms of fostering a culture of academic integrity, it is crucial to provide explicit education on ethical writing. Writers should adhere to proper citation practices and be aware of legal consequences of plagiarism.

Secondly, it is essential to implement advanced digital tools for plagiarism detection for identifying instances of copied or AI-generated content, thereby maintaining the integrity of academic submissions.

Clear academic integrity policies must be established and effectively communicated, serving as a deterrent and setting explicit expectations for ethical practices.

Fostering Critical Thinking Abilities

Cultivating writers' critical thinking skills is essential for ensuring originality and depth in written work. Some of the areas that promote critical thinking include the following:

– Given AI's lack of knowledge of contemporary events, one effective approach is to write essays that address debates on current social, political, or cultural issues. By exploring various perspectives and forming well-supported arguments, writers can develop critical thinking skills and express their unique viewpoints. This process not only enhances their understanding of the topics but also discourages the use of AI-generated content, as the complexity and personal nature of the arguments are challenging for AI to replicate.

– Encouraging writers to express their own voice through various academic writing genres can also promote originality by sharing their unique perspectives, insights, and personal experiences through a variety of academic writing genres, which not only secures authenticity but also fosters originality in the scholarly work.

– Assignments such as case studies, commentaries, opinion pieces, and reflection papers require writers to analyse information, reflect on their background knowledge, and articulate their thoughts in a distinctive manner. This diversity in writing tasks helps writers to develop a broad range of skills and makes it less tempting to resort to AI-generated content, which often lacks the personal touch and insight required in these genres.

– Another effective strategy is to incorporate citations into writing research-based essays, cultural exploration essays, and interview/survey-based research papers that necessitate thorough investigation and proper attribution of sources. This not only enhances writers' research skills but also sustains academic integrity. AI-generated content, which often lacks accurate and reliable citations, becomes less appealing when assignments require

detailed references and proper documentation of sources.

– Writing research-based essays on multidisciplinary topics can stimulate intellectual curiosity and critical thinking. When required to explore complex issues from multiple angles, writers will integrate knowledge from various fields. This comprehensive approach to research and writing fosters a deeper understanding of the subject matter and discourages the use of simplistic AI-generated content, which can rarely address the required details and interdisciplinary connections.

– Cultural exploration essays encourage writers to examine different cultures, traditions, and perspectives. These projects promote analytical thinking, cultural awareness, and empathy. By conducting in-depth research and presenting the findings in a coherent and reflective manner, writers develop original thought and reduce reliance on AI-generated text which may lack the needed depth and cultural sensitivity.

– Interview and survey-based research papers involve gathering primary data through direct interaction with individuals or groups. These types of work teach writers relevant research methods, including designing surveys, conducting interviews, and analysing data. The personalised nature of these tasks makes it difficult for AI-generated content to replace the primary data and required authentic insights, thereby encouraging writers' genuine research activities.

– Writing based on literary analysis and interpretation employs literary devices and connects themes to broader contexts. Comparative analysis of literature and film, drawing parallels and contrasts between different media forms require understanding of narrative techniques, thematic elements, and stylistic differences. By encouraging writers to critically evaluate and interpret various types of discourse and provide unique perspectives and detailed comparisons, these assignments foster analytical skills and creativity, promoting original thought and effort. The features needed in these papers are difficult for AI-generated content to replicate.

– Essays that examine historical events from multiple viewpoints develop critical thinking because they require an understanding of various perspectives, interpretations, and contextual factors. This process involves analysing and synthesising complex information, questioning biases, and considering the implications of different viewpoints. AI, while capable of processing large volumes of information and generating text based on patterns, lacks the capacity for genuine critical thinking and evaluating the subjective and interpretative aspects of historical analysis. AI tools operate based on algorithms and existing data without judgement, making it challenging for them to replicate the critical and personal insight required in such papers.

By performing the above-mentioned writing projects that emphasise original thought and promote creativity, critical thinking, and personal engagement, the temptation to rely on AI-generated content can be effectively reduced.

Conclusion. Given the insights and discussions presented throughout this study, this study has highlighted key ethical considerations in integrating AI-powered writing tools into EFL academic writing, challenges related to plagiarism, and the ways of distinguishing AI-generated texts from human-authored ones. Recognizing the features to differentiate between these texts is crucial for ensuring text authenticity and maintaining academic integrity.

In particular, analysing human-created and AI-generated texts underscores the importance of recognizing key linguistic features to distinguish between them. Namely, human texts exhibit unique voices, creative patterns, and colloquial expressions, while AI-generated content often shows a monotonous prosody and limited cohesion. The lack of contextual awareness and accurate responses in AI-generated content highlights the significance of background knowledge and cultural awareness. Recognizing these distinctions is essential for maintaining academic integrity when encountering AI-generated texts.

The potential risk of over-reliance on AI tools poses significant threats to critical thinking and problem-solving skills, potentially impacting the writers' overall communication experience.

Institutional initiatives must prioritise academic integrity and promote authentic language usage. Writing that involves debate, personal reflection, comprehensive research, cultural exploration, and comparative analysis helps writers to develop their own voices and produce original work.

By considering ethical and practical implications, we can more effectively manage the integration of AI technologies in a manner that enhances academic writing while preserving the ethical standards essential to the field. This necessitates continuous critical evaluation and discourse among educators, researchers, policymakers, and other stakeholders to promote the responsible use of AI in scholarly communication.

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