

AI TOOLS IN ACADEMIC WRITING: METHODS AND BEST PRACTICES

Seydabullaeva Dilnoza Tangirbergenovna

1st Faculty of English Language and Literature, 3rd year

seydabullaevadilnoza0@gmail.com

Annotation: In recent years, artificial intelligence (AI) has become an increasingly important part and parcel of human life to use and create academic writing. From generating new ideas to gathering information, improving grammar and organizing research, AI tools offer a wide range of support for students and researchers. Over the past decade, AI has been widely used in various spheres such as: education, problem solving, medicine.

One of the key benefits of AI tools in academic writing is their ability to increase efficiency. Preparing an academic paper usually takes a considerable amount of time for idea generation, drafting, and revision. AI tools can support this process by offering topic and body ideas, creating outlines, and providing examples of well-organized paragraphs. This enables students to concentrate more on understanding the subject instead of worrying about how to begin or how to construct their writing. Consequently, AI helps reduce the time required to complete assignments and improves overall productivity.

This study seeks to identify and classify AI tools used in academic writing, examine their features and functions, and assess the positive and negative sides of integrating AI technologies. It relies on secondary data collected from a range of sources, including academic articles, journals, newspapers, and online platforms, and explores how different AI tools support academic writing.

Key words: Artificial intelligence (AI), academic writing, tools,

Аннотация: В последние годы искусственный интеллект (ИИ) стал неотъемлемой частью жизни человека, особенно в сфере использования и создания академического письма. От генерации новых идей до сбора информации, улучшения грамматики и организации исследований — инструменты ИИ предлагают широкий спектр поддержки для студентов и исследователей. За последнее десятилетие ИИ получил широкое применение в различных областях, таких как образование, решение задач и медицина. Одним из ключевых преимуществ инструментов ИИ в академическом письме является их способность повышать эффективность. Подготовка научной работы обычно требует значительного времени для генерации идей, написания черновиков и редактирования. Инструменты ИИ могут поддерживать этот процесс, предлагая темы и идеи для содержания, создавая структуры работ и предоставляя примеры хорошо организованных абзацев. Это позволяет студентам сосредоточиться больше на понимании предмета, а не на том, как начать или как правильно выстроить текст. В результате ИИ помогает сократить время, необходимое для выполнения заданий, и повышает общую продуктивность.

Данное исследование направлено на выявление и классификацию инструментов ИИ, используемых в академическом письме, изучение их характеристик и функций, а также оценку положительных и отрицательных сторон интеграции технологий ИИ. Оно основано на вторичных данных, собранных из различных источников, включая научные статьи, журналы, газеты и онлайн-платформы, и рассматривает, как различные инструменты ИИ поддерживают академическое письмо.

Ключевые слова: искусственный интеллект (ИИ), академическое письмо, инструменты.

Abstrakt: So'nggi yillarda sun'iy intellekt (SI) inson hayotining ajralmas qismiga aylanib bormoqda, ayniqsa akademik yozuvni yaratish va undan foydalanish jarayonida. Yangi g'oyalarni yaratishdan tortib ma'lumot to'plash, grammatikani yaxshilash va tadqiqotni tartibga solishgacha — SI vositalari talabalar va tadqiqotchilar uchun keng ko'lamli yordamni taqdim etadi. O'tgan o'n yillik davomida SI ta'lim, muammolarni hal qilish va tibbiyot kabi turli sohalarda keng qo'llanilmoqda. Akademik yozuvda SI vositalarining asosiy afzalliklaridan biri — ularning samaradorlikni oshirish qobiliyatidir. Ilmiy ish tayyorlash odatda g'oyalarni ishlab chiqish, dastlabki matnni yozish va tahrirlash uchun ancha vaqt talab qiladi. SI vositalari esa mavzu va mazmun bo'yicha g'oyalar berish, reja tuzish hamda yaxshi tuzilgan paragraf namunalarini taqdim etish orqali bu jarayonni qo'llab-quvvatlaydi. Bu esa talabalarga matnni qanday boshlash yoki qanday tuzishni o'ylashdan ko'ra, mavzuni chuqurroq tushunishga e'tibor qaratish imkonini beradi. Natijada, SI topshiriqlarni bajarish uchun ketadigan vaqtni qisqartiradi va umumiy samaradorlikni oshiradi. Mazkur tadqiqot akademik yozuvda qo'llaniladigan SI vositalarini aniqlash va tasniflash, ularning xususiyatlari va funksiyalarini o'rganish hamda SI texnologiyalarini joriy etishning ijobiy va salbiy tomonlarini baholashga qaratilgan. Tadqiqot turli manbalardan, jumladan ilmiy maqolalar, jurnallar, gazeta materiallari va onlayn platformalardan olingan ikkilamchi ma'lumotlarga asoslanadi hamda turli SI vositalari akademik yozuvni qanday qo'llab-quvvatlashini tahlil qiladi.

Kalit so'zlar: sun'iy intellekt (SI), akademik yozuv, vositalar.

Introduction

Artificial intelligence plays crucial role in the present era. This concept is not new, but the development is continuous day by day. Development of AI makes human life easier, saves time and effort.

Artificial objects are defined as items that are created by humans rather than occurring naturally. Intelligence, in its simplest form, can be understood as a set of problem-solving abilities that enable individuals to deal with real-life challenges. Artificial intelligence (AI) refers to the simulation of human intelligence in machines that are programmed to think and act like humans. It can also describe any computer system that demonstrates human-like capabilities, such as understanding and problem-solving (**Frankenfield & Investopedia, 2021**).

According to John McCarthy, who was considered as the father of artificial intelligence, AI is defined as “the science and engineering of creating intelligent machines, particularly intelligent computer programs.” (**McCarthy et al., 1955**)

For researchers, AI is neither a new idea nor a recent technological development. In fact, it is one of the oldest concepts in computer science and continues to offer significant opportunities for further research. The origins of AI can be traced back to 1943, when Warren McCulloch and Walter Pitts introduced the first model of artificial neurons. With continuous progress in the field, the term “artificial intelligence” was officially introduced in 1956 by American computer scientist John McCarthy during the Dartmouth Conference, marking the establishment of AI as an academic discipline. Since that time, AI has developed to a highly advanced level.

Platforms such as ChatGPT, Grammarly and QuillBot offer various types of feedbacks: on grammar, coherence and cohesion, punctuation and lexical. While this tools promise to the greater efficiency and accuracy, their broader pedagogical implications remain effects on students' intellectual critical thinking, autonomy and originality.

Methodology

This study shows the impact of AI-based writing skill tools on students' academic writing performance with a specific focus on four main dimensions such as: grammatical accuracy, structural coherence, critical thinking and originality. By combining quantitative and qualitative insights, it seeks to move beyond binary evaluations of AI as either beneficial or harmful. AI tools intersect with learners' behavior, meta cognitive development and evolving definitions of authorship in the digital age.

Objectives of the Study

This study aims to examine the impact of AI-based writing tools on undergraduate students' academic writing in English Studies, including the identification and categorization of such tools. It investigates how AI usage affects writing performance in terms of grammar, coherence, originality, and critical thinking, as well as students' perceptions and integration of these tools in the writing process. The study also evaluates whether AI tools support or hinder independent writing skills and provides insights into their responsible and ethical use in academic writing.

Literature Review

Intelligent machines may, in the future, either replace or enhance certain human abilities. Artificial intelligence refers to machine or programmed intelligence and is considered a branch of computer science (**Gidh, 2020**). Today, AI has become a widely recognized area within computer science due to its positive impact on various aspects of human life. Over the past two decades, artificial intelligence has greatly improved the efficiency of both production and service processes. One of the important outcomes of AI research is the development of expert systems, which continue to evolve as an advanced technological application.

Expert systems are widely used today to address complex problems across various domains, including research, engineering, industry, medicine, and weather forecasting, demonstrating the significant influence of artificial intelligence in many areas of life (**Marda, 2018**). Fields that adopt AI technologies have experienced notable improvements in productivity and overall performance. AI also enables machines and robots to perform analytical and conceptual reasoning. Over the past two decades, artificial intelligence methods have made substantial contributions to numerous disciplines (**Mittal & Sharma, 2021**).

With the continuous advancement of technology, educators are required to adapt in order to remain relevant, as failure to do so may lead to replacement by automated systems (**Tira Nur Fitria, 2021**). Educational institutions and regulatory bodies are working together to develop policies that encourage the ethical and responsible use of AI in both education and research (**Sonal Devesh et al., 2023**). In addition, effective and safe use of generative AI tools requires close collaboration among policymakers, researchers, educators, and technology experts (**David Baidoo-Anu, Ansah, 2023**).

Upgrading Writing skill with this kind of Apps:

Grammarly is a widely used academic writing assistant that provides a comprehensive set of features. It carefully checks grammar, punctuation, and clarity, going beyond simple error correction. In addition, Grammarly offers suggestions for improving sentence structure and flow, helping writers produce text that is not only accurate but also clear and engaging.

Paperpal is designed specifically for academic writing needs. It evaluates writing style, tone, and compliance with citation standards, offering useful feedback to help produce well-structured and publication-ready manuscripts. It also integrates smoothly with MS Word, enabling convenient editing during the writing process.

Jenni:AI serves as a research writing assistant that supports users in generating ideas, organizing content, and drafting academic papers. It can also recommend relevant citations and help ensure originality, thereby supporting efficient and ethical research writing.

QuillBot is a paraphrasing tool that helps users reword sentences while maintaining their original meaning. It is especially useful for avoiding accidental plagiarism and offers multiple paraphrasing modes to achieve different levels of text originality, supporting academic integrity.

ProWritingAid is an advanced writing tool that extends beyond basic proofreading by offering a wide range of features to address grammar, style, and plagiarism issues. It provides detailed suggestions to improve sentence structure, variety, and vocabulary choice, helping writers produce text that is both precise and more impactful.

WriteSonic, Copysmith, and Rytr: are AI-powered writing assistants that can support the creation of various text elements such as outlines, introductions, and conclusions. However, they should be used carefully in academic writing. It is important to ensure that the main ideas and arguments remain original and that proper citation is provided for any external sources used.

Discussion

The use of generative artificial intelligence (AI) in academic writing presents a complex debate, encompassing issues of authenticity, intellectual property, academic integrity, and skill development. On one hand, AI tools offer the potential to enhance efficiency, assist in overcoming writer's block, streamline the research process, and improve text quality through grammatical and stylistic error detection. They can serve as powerful aids for brainstorming, structuring ideas, and finding relevant information, which is particularly valuable for students beginning to master academic writing. However, over-reliance on AI carries significant risks. The primary concern is that AI generates text based on vast datasets without possessing its own experience, critical thinking, or unique voice. This can lead to the creation of superficial, unoriginal work that lacks the depth and individual perspective that are cornerstones of academic research. Furthermore, there is a real threat of plagiarism, even unintentional, if users do not properly verify and cite AI-generated content. Educational institutions, such as UCT, are developing policies to establish clear boundaries for the use of such tools, striving to balance the benefits of technology with the necessity of maintaining academic integrity.

It is crucial to differentiate between using AI as a tool to support the learning process and as a means to automatically generate work. AI can be an effective assistant for research, structuring, review, and editing, but it should not replace a student's own thinking, analysis, and argumentation. Policies that demand transparency regarding AI use and proper citation are key to integrating these technologies into the academic environment ethically.

Conclusion

The integration of generative AI in academic writing is a double-edged sword. It provides unprecedented opportunities for enhancing productivity and access to information but demands extreme caution, critical thinking, and ethical responsibility.

1. Support but not replacement. Generative AI should be viewed as a tool to support the writing process, not as a substitute for human intellect, creativity, and original thought.

2. Academic Integrity is Paramount Strict adherence to academic integrity principles, including proper citation and avoidance of plagiarism, is essential when using AI. Institutional policies must clearly delineate acceptable and unacceptable forms of use.

3. Cultivating Critical Thinking The ability of users to critically evaluate AI-generated

information, verify its accuracy, and integrate it into their own reasoning is vital.

4. **Ethical Use** The future of academic writing will depend on the ability of students, educators, and institutions to ethically integrate AI, leveraging its benefits for improved learning and research while preserving the value of original contribution and intellectual honesty.

Educational institutions must continue to develop and refine their AI policies and provide students with educational resources to help them learn to use these new technologies effectively and responsibly.

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