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Reaping the rewards with minimal toil: Evaluating the polemics of artificial intelligence in academia and the future of academic writing

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Abstract: The use of Artificial Intelligence in academic writing swings on the edge of revolution and obliteration, where the promise of unparalleled efficiency clashes with the specter of intellectual dilution, which challenges the essence of academic rigor and originality. This paper interrogates the ways in which the two extremes of innovation and traditional writing methods in academia can be integrated. As such, the paper argues that it is essential to incorporate new technologies and modern AI tools with critical and historical aspects of academic culture rather than replacing them. In essence, AI should only augment what researchers are able to do, not replace them. As a result, it is important to set specific guidelines and standards in order to deal with issues, of authorship, data collection, controlled storage, and validation of artificial intelligence products. Lastly, the paper recommends the necessity of training and education about AI tools for academics and scientists in institutions of higher learning. The academic community should seek to implement policies and strategies that allow for the use of AI technologies in the execution of scholarly activities without compromising the quality of academic writing.

Keywords: *Academic integrity, Academic writing; Artificial intelligence, Efficiency, Ethics.*

1. Introduction

Artificial Intelligence (AI) and academic writing merge to create a transformative intersection in education, each reciprocally refining and reforming the other (Malik, et al., 2023). The rapid development of AI in recent years has become a crucial factor in transforming educational paradigms (Chan, & Hu, 2023). AI tools have the capability to perform tasks such as summarising, translating, or paraphrasing text (Ray, 2023). Additionally, they can generate text on a wide range of topics and offer appropriate citations. These qualities are advantageous for academic writing, and a growing number of researchers are adopting AI tools as aids in paper composition (Curtis & ChatGPT, 2023). The utilisation of AI techniques presents numerous possible challenges, encompassing the veracity of the created text that may include erroneous assertions, as well as ethical considerations (Marchandot, et al., 2023). The rapid advancement of AI in education indicates a change towards learning environments that are more adaptable and responsive. This optimisation of language acquisition and instruction is designed to cater to the specific and subtle requirements of both learners and educators (Cotton et al., 2023). AI is a combination of technology that allows machines to imitate cognitive processes related to human minds, such as learning and problem-solving (Ali, 2020). AI plays a significant role in language instruction by enabling the development of intelligent tutoring systems, which is considered a groundbreaking advancement.

The emergence of AI technologies enables opportunities to transform all phases of academic writing, from the research phase to the editing phase (Liu et al., 2023). Nevertheless, some of these progressions also do incite extremely contentious concerns like ownership, self-plagiarism as well as subordination of the body of knowledge. This paper assesses these debates and makes a fair contribution to how writing practices are likely to change because of such technologies while dealing with the polemics at hand. Over the past few decades, there has been a great deal of excitement about AI in

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various areas and academic writing cannot be spared. These technologies provide unique strategies that assist in maximising efficiency and quality in the various stages of research.

Incorporating advanced AI tools such as advanced drafting assistance and intelligent writing systems creates room for efficiency as well as appropriate improvement of academic writing with less effort (Storey, 2023; Aljuaid, 2024). However, the arguments brought out in these discussions largely relate to questions of authorship and ethics. As the ability of AI systems to generate meaningful and context-appropriate information improves, one question that naturally arises is whether and to what extent human stakeholders in the achievements of these systems should be given credit. This raises fundamental questions about the nature of academic writing, and whether sincerity in writing can survive in disregard of technological encroachment. In addition to authorship concerns, there has been criticism that the use of such AI tools may reduce the quality of the academic output significantly (Ahmad, et al., 2022; Bearman, 2023; Caprioglio, & Paglia, 2023). There is fear that when AI accomplishes writing work, the outcome does not generate knowledge and deep understanding as will be required in research work.

1.1. Knowledge Construction in the Fourth Industrial Revolution

In 2023, upon my return to Zimbabwe after a long period abroad, I began a new phase in my academic career by accepting a position as a lecturer at a local University. This transition occurred after spending several years out of the country, where I pursued further education and gained experience in academia. As soon as I returned, I became deeply involved in the ongoing debates about incorporating AI into academic work. The debate involved both students and faculty members, demonstrating the wider conversation about the increasing influence of AI on the educational front. One of the interesting aspects of this debate, however, was the extent to which students were using AI tools to do their research projects and assignments. As I started assessing students' submissions, I discovered a trend in the utilisation of AI tools.

The use of AI significantly changed the work ethics of most students, i.e. instead of conducting in-depth research and exercising critical thinking skills, some students relied solely on AI tools to do their work. This shift resulted in concerns about how the use of AI would affect the quality of work vis-à-vis academic rigor and authenticity. A few months after my return to Zimbabwe, I enrolled for a Postgraduate Diploma in Tertiary Education at the Midlands State University in order to empower myself further in academia. In this program, debates on AI were also quite critical as both the students and the lecturers came into discussions on AI implications. One of the classes had a professor who gave an interesting analogy of how the current sentiment against AI can be paralleled to the protests by Maths teachers over the invention of the Scientific calculator in the 1960s.

The scientific calculator which was once regarded as a rival by teachers has ultimately become an essential component in the study and teaching of mathematics. This comparison helped explain the opposition to new technology by depicting that even AI will become an essential component of academic activities like the calculator eventually did. This analogy was persuasive in that it showcased how past waves of technological changes are relevant to the current discourse on AI. The analogy highlighted the recurring nature of technological resistance and acceptance, suggesting that AI, like the calculator, has the potential to become a fundamental component of academic practices. Inspired by these reflections and the vibrant discussions surrounding AI, I felt compelled to contribute to the debate. My main objective is to provide a balanced perspective on the use of AI in academic writing, addressing both the associated challenges and opportunities.

By engaging with the current discourse through my research, I seek to add value to the debate and help shape a thoughtful approach to the integration of AI in academic practices. This is immensely inspired by the academic imperative to consistently produce scholarly publications, commonly referred to as the '*publish or perish*' demeanour, which imposes significant strain and has the potential to result in exhaustion among scholars. Khalifa and Albadawy (2024) assert that writers need strike a balance between providing information and captivating the reader. In addition, they are anticipated to demonstrate originality and ingenuity in their work, which can be challenging when faced with strict time constraints. Ensuring logical flow of ideas, known as structural coherence, is crucial in academic

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writing, particularly in lengthy publications such as theses or dissertations. Therefore, the necessity for coherence must be harmonised with efficient time management, as academic writing frequently competes with other obligations. With regard to these difficulties, AI has become an indispensable instrument in academic writing.

2. The Promise of AI in Academic Writing

2.1. Efficiency and Productivity

AI writers are highly useful in academic work by increasing productivity and efficiency of the work. Authors usually face tedious processes of editing and textual production including using grammar checkers and drafting language models. Academic research can be made easier with the use of AI-powered research assistants that can carry out literature reviews as well as analyze data leaving the advanced tasks to researchers themselves (M´ajovský, 2023). Therefore, the usage of AI makes it possible to speed up the work process while being able to achieve even more (Kuleto, et al., 2021; Lingard, 2023). Cost cutting and time saving technologies such as AI-based text writers and drafting programs such as ChatGPT can help ease the task of writing by generating the first version in a matter of seconds from the available text (Lingard, 2023; Imran, & Almusharraf, 2023). Further, highly developed AI techniques can search and retrieve huge amounts of resources and locate necessary research papers or facts within them very fast and accurately (Joshi, et al., 2021). As a result of offloading transactional and low-complexity activities, AI reduces the overall time to complete tasks which results in the reduction of the time taken to write papers thus, accommodating high productivity. Therefore, the use of AI tools improves the amount and quality of work done in such advanced stages as literature review and data analysis.

Table 1.
Selected AI tools used in academic writing and their purpose.

Ai Tool	Purpose
Grammarly	Grammarly is a widely used AI-powered writing assistant that helps with grammar, spelling, punctuation, and style. It provides real-time feedback on text, suggesting corrections and improvements to enhance clarity and readability. Grammarly also offers tone adjustments and writing style recommendations, which can be particularly useful for maintaining a formal academic tone.
EndNote	EndNote is a comprehensive reference management software that leverages AI to facilitate the organization of references, creation of bibliographies, and citation management. It integrates with word processors to automate the formatting of citations and references according to different style guides, making it easier for researchers to adhere to academic standards.
QuillBot	QuillBot is an AI-powered paraphrasing tool that assists in rephrasing and rewriting text. It helps researchers and writers to generate alternative phrasings, improve the clarity of their writing, and avoid plagiarism. QuillBot's AI algorithms analyze the input text and provide rephrased versions that maintain the original meaning.
Hemingway Editor	The Hemingway Editor uses AI to analyze text for readability and clarity. It highlights complex sentences, passive voice, and other elements that may affect the readability of the writing. The tool provides suggestions to simplify and improve the text, making it more accessible and engaging for readers.
ChatGPT (OpenAI)	ChatGPT is a conversational AI model that can assist with generating ideas, drafting text, and providing feedback on academic writing. It can help researchers brainstorm topics, generate content outlines, and refine drafts by offering suggestions and answering questions related to writing and research.
Turnitin	Turnitin is an AI-driven plagiarism detection tool that compares submitted text against a vast database of academic papers, books, and online sources. It helps ensure the originality of academic work by identifying potential instances of

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	plagiarism and providing similarity reports.

These AI tools Table 1 are designed to streamline various aspects of academic writing, from managing references and ensuring grammatical accuracy to enhancing readability and detecting plagiarism. By leveraging these technologies, researchers can improve the efficiency and quality of their scholarly work while maintaining adherence to academic standards.

2.2. Enhanced Accuracy and Consistency

AI is improving the consistency and correctness of academic writing as it helps address some of the problems that academics often encounter (M´ajovský, 2023). Data collection and analysis become more efficient with the use of AI. A good number of theses and dissertations include punctuation and spelling checks and inconsistencies which even normal people cannot comprehend (Chan, & Hu, 2023). AI tools can assist academics in providing a consistent approach to academic writing. Thus, AI systems may help to maintain stylistic consistency, formatting conformity, and referencing accuracy throughout the entire document. Many of the editing tools meant for students contain options that allow formatting of citations, reference lists, and bibliographies to any particular required format (Ahmad, et al., 2022). Further, in large scale investigations, AI systems can also facilitate consistency of the vocabulary and language used (Aljuaid, 2024). Taking into account the research situation where several scientists write one article, AI systems could help overcome differences in the writing style and terms. For instance, AI-based content management systems can track down specialized terms or jargon slung by the various authors and bring them under one umbrella during the last editing of the manuscript.

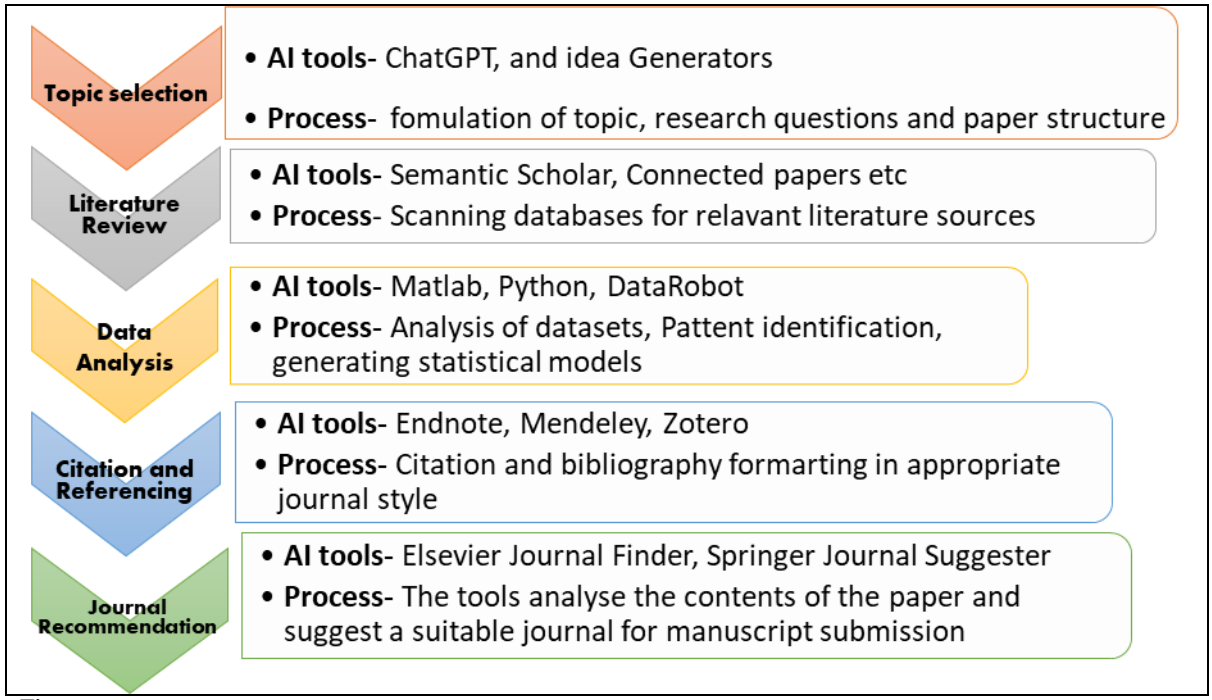

Figure 1.
Effective use of AI in writing a research paper.

Figure 1 demonstrates the use of AI in writing a research paper. The model reduces the burden in the process from topic selection to identifying a suitable journal for submission. When selecting a topic, AI provides insights that encompass a range of factors including trends and possible research topics that the researchers are interested in which saves time and offers new perspectives. A literature review can

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also be developed through the use of AI tools such as Semantic Scholar, Google Scholar, and ResearchRabbit to search for and extract relevant literature. Further, if the research requires the use of computer software to analyse data, data analysis tools like MATLAB make the work simpler as they contain in-depth and comprehensive data analysis tools. This also allows the researcher to easily complete tasks like statistical analysis, visualization, and modeling. When the paper is completed, citation-related software tools such as Endnote or Zotero help in fixing citations, references, and bibliographical entries. Furthermore, this model, in addition to helping in the management of the works, also extends to assisting in the selection of journals that the authors would wish to publish their works by comparison of the title, abstract, and keywords of the works with that published in journals. At this stage, one can make use of tools like Elseviers Journal Finder or Springer Journal Suggester.

3. Doctrinal Polemics in the Use of AI for Academic Writing

3.1. Authorship and Infringement of Intellectual Property Rights

One of the rather sensitive battlefronts regarding the use of AI in academic writing is the question of copyright. With the progress of AI in generating content, the question arises of how many of these human scholars' accolades can be accompanied by work that was aided by AI. The use of AI in the activities awarding academic titles creates new dilemmas on authorship. The question of who should take responsibility for academic content grows larger as AI develops. Researchers may enlist the use of AI tools to facilitate the manuscript writing process (see Figure 1), however, despite these developments, the ability of AI to do substantive work within the sphere of academic writing undermines the traditionalist idea of copyright (Aljuaid, 2024). One of the core issues in this context is whether humans and AI need to be credited as authors of the generated content. With the advent of advanced text generators that are AI optimized such a ChatGPT, Jasper AI, Notion AI, Article Forge etc. it will be tough to determine how much of the content was created by humans and how much of it was created by AI. This leads to questions of the moral responsibility of possessing authorship. There are also considerations of the intellectual honesty principles within the discourse of AI and academic writing. Although AI is very useful, it is very limited as it works with what has already been generated or formulated within its framework and these may not be free from some degree of faults.

3.2. Academic Rigor and Quality

Some scholars believe that computers are likely to compromise the rigour, and hence, the quality of academic work (Chan, & Hu, 2023; Aljuaid, 2024; Cotton et al., 2023). In their opinion, AI content generation cannot generate as much analytical skill or understanding as human academic input would. It is easy to understand the purpose of AI in that students will make one's work easier and faster. AI devices have many positive impacts in improving productivity and efficiency of processes without unduly compromising the completeness of standard scholarly work. The problems arise from the fact that AI systems are based on existing patterns and modelling technology and hence do not integrate experience, logical bases, and creativity which human scholars apply to their writing, resulting in either thin or formulaic writing (Liu et al., 2023; Caprioglio, & Paglia, 2023). AI systems are constructed using huge databases containing errors, stereotypes, and old data (Liu et al., 2023). However, if managed and monitored well there is no danger but there are potential dangers of content generated by AI systems reproducing the same pattern of content generation (Bearman, 2023). As such, to a greater extent, there are dangerous assumptions where heavy reliance on AI poses direct threats in the academic sense.

3.3. AI Trends in Academic Writing

This section examines how scholars may go about using AI and still uphold the sanctity of academic writing. The integration of AI into academic writing calls for an understanding of the need to preserve and enhance creativity (Ali, 2020; Caprioglio, & Paglia, 2023). AI can help make most of the processes related to both researching and paper writing very efficient thus improving the way that scholars handle information, create text, and write work (Aljuaid, 2024). Managing such a scenario requires the use of AI tools that are complementary to 'traditional' research processes so that these are enhanced, rather than displaced. Given the controversies associated with particular aspects of AI tools, there is a need for

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policies and best practices in place that govern the use of such AI tools in academic writing. There are issues of policy and best practices relative to the appropriate use of these tools to enhance writing. Policies should address general and specific issues concerning the use of AI, such as attribution and ownership of the work where AI has been used or co-created with researchers.

4. Recommendations

4.1. Integrate AI Training in Academic Curricula

Universities should adopt AI training modules for the use of AI tools. Authorities should promote the use AI research tools like ChatGPT for topic formation, Semantic Scholar for literature support creation, and Python or MATLAB for data mining. It is also possible to conduct workshops or give courses or seminars about these technologies to researchers and scientists who in turn will be able to use technologies to improve the quality of their research outcomes without breaching any academic ethical standards.

4.2. Set Effective Policies that Govern Appropriate AI Application

Universities and research entities should create the best practices that facilitate the appropriate application of AI in academic work. Such policies should provide guidelines on the dos and don'ts of AI in writing, researching, and data analysis so that it is used as an aide and not as the couch that administers and destroys creativity. Therefore, it is important to work on policies that call for openness and standards of how and when to style any of the work done by the researchers with AI.

4.3. Continuous Professional Development

It is important for higher education institutions to promote CPD programs for teachers and researchers, which would allow them to learn about the new developments in AI technologies. If this academic culture of AI literacy is encouraged, the scholars' comprehension of using these tools in their academic work will be advanced, and more so the ethical implications will be put into consideration. Regularly updated training programs, provision of online resources, and attending AI-related conferences will help training institutions and their employees remain conversant with AI and its implications in research work.

5. Conclusion

The introduction of AI has witnessed new prospects that confronted the academic writing process. On the one hand, these potential instruments can increase productivity and precise work, while on the other hand, they raise certain controversies regarding ownership of ideas, standards of research work, and moral issues. This paper, therefore, embarked on this debate in order to enhance a better understanding of discourse on the role of AI in academic writing. The computerization of academic writing with the assistance of AI is a game changer in the way scholarly activities are performed, yielding positive outcomes. As scientists advance even further the AI technologies, it is possible that more and better research from an AI-led writing team would be produced more efficiently in places where perhaps fewer bunch of research writers would do it manually. In order to make the best use of AI tools without compromising the essence of academia, there is a need for rules and policies that will serve as guidance. These instructions ought to provide for the determination of several essential aspects such as the determination of a percentage of authorship, keeping confidential any data collected, and having a clear stand on AI-generated content scrutiny.

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