

## **Research writing empowered by AI: benefits, Concerns and recommendations**

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**Abstract:** This article examines the impact of AI tools on research writing, highlighting benefits like task streamlining and enhanced data analysis. However, concerns arise regarding academic integrity and critical thinking. Despite challenges, judicious AI use holds promise for revolutionizing scholarly writing. Integration into education fosters awareness of ethical implications. Researchers must balance AI benefits with skill development to maintain integrity. Embracing AI as a complement to human judgment is crucial for navigating research writing ethically.

**Key Words:** Artificial intelligence, AI tools, research writing, academic integrity, plagiarism, critical thinking, efficiency, data analysis, ethical implications, education integration, judicious use.

**Introduction** Human life is being reshaped in profound ways because of several technological advances, and research writing is no exception. Artificial intelligence (AI) tools like ChatGPT have significantly impacted the way researchers do their research, saving their valuable time. The improved efficiency, enhanced quality, and data analysis they have brought cannot be underestimated. Although they have a great potential to improve research writing, it is essential for teachers and reviewers not to forget about the rising challenges: the loss of academic integrity and plagiarism they have brought up. This article aims to investigate some of the multifaceted impact of AI tools and suggest some recommendations to navigate the fast-evolving new scholastic writing while upholding research ethics practices.

### **Benefits of AI Tools in Research Writing**

The pervasiveness of AI assisted tools offers a multitude of benefits to a researcher, improving efficiency, quality, and data analysis skills. For instance, AI tools like ChatGPT, Grammarly, Capilot by SciSpace, Mybib, and Scribbr aid to automate and streamline different repetitive tasks related to research, economizing researchers' time. Of them, ChatGPT (Chat Generative Pre-Trained Transformer) assists in research writing by helping with research methodology, literature review, statistical analysis, and a structured organization of the paper (Koos & Wachsmann, 2023).

Grammar and spelling mistakes always hinder those whom English is a foreign language from academic achievements in their academic and professional journey. Grammarly is the very great online tool to check grammar and spelling mistakes, enhancing their accuracy of research context (Hadiat, 2022). Grammarly is a powerful software to improve writers' quality, coherence and make their work understandable for a broad range of audiences.

It is not a secret that the most important and tedious part of research writing is literature review. Fortunately, Scispace has made it easy to draw connections between papers and get succinct summaries of them, making literature review process faster (Burns, 2024). Furthermore, SciSpace is also known for its citation, referencing, paraphrasing set features in its browser, but its literature review process makes it unique.

Another helpful AI tool to help with finding relevant papers and create a proper in-text citation, referencing with different styles (e.g., MLA, APA) is MyBib, enhancing credibility and productivity. What makes MyBib superior is that it shows several sources for the input search of key words and informs how much the sources are credible. Moreover, it autocites the sources ensuring accurate citations.

The draft research paper needs to be proofread and edited before submitting to avoid unintentional plagiarism and have error free work. Scribbr is the very AI assisted tool to do these tasks perfectly, ensuring accuracy and integrity. It also helps to detect AI generated ideas to evaluate the work and create proper citations.

### **Threats and Challenges**

AI can assist in different tasks across different industries and domains, including education, particularly in research writing. The increasingly high use of AI by workplaces is driven by its vast potential. While AI tools undoubtedly empower the quality and productivity of research writing, they also pose threats and challenges. These include potential drawbacks such as plagiarism, less critical thinking, and concerns regarding authenticity in writing (Xiao et al., 2022; Cardon et al., 2023).

AI tools have a great impact on research integrity enabling intentional or unintentional plagiarism. Paraphrasing tools and some software tools can easily make plagiarized ideas appear authentic or at least lay within the acceptable range of the similarity level (Aiste Steponenaite & Barakat, 2023). Plagiarism detection systems are vulnerable to detect AI, contributing to a rise in academic cheating (Xiao et al., 2022). Additionally, AI assisted writing may also cause ethical concerns as it uses automated systems to create content without consent or proper attribution. This tendency is leading to a new era of cheating in research writing.

As stated above, AI tools can encourage writers to come up with new ideas and organize them smoothly. However, over reliance on them mitigates scholars' critical thinking with literature review and data analysis. In a consequence this potentially undermines the validity and integrity of research (Hosseini et al., 2023). Moreover, AI inadvertently present biases or some errors in writing as it gives the data or analysis based on the existing data in it (Hosseini et al., 2023). If AI tools are no trained or the input data is flawed, that kind of challenges might appear. Furthermore, AI tools cannot fully replicate human researchers' nuanced understanding and experiential knowledge in medical research, like nursing (Yasin & Areej Al-Hamad, 2023).

### **Recommendations for Researchers**

In today's fast-paced world, refraining from the use of AI is impractical, given its role in aiding researchers to avoid meticulous and burdensome tasks, thereby enhancing productivity. To ensure fair and effective utilization, it is essential to recognize AI tools as aids rather than substitutes for human creativity and judgment. Maintaining this balance is crucial, as AI should be employed judiciously according to the specific goals of each research endeavor.

Most of the students and scholars have a lack of awareness of AI tools to boost writing and its ethical implications, which affects their effectiveness and integrity. Integrating AI into educational curriculum can promote awareness among students and researchers regarding an effective use of technology in academic writing (Koos & Wachsmann, 2023).

Researchers must continuously practice researching and writing skills alongside with the adoption of AI tools to ensure a well-rounded approach for different research tasks. It is crucial to balance the benefits of AI-assisted writing with mindful consideration of the associated challenges to ensure the integrity and quality of scientific work.

### **Conclusion**

It can be concluded that integrating AI tools into research writing offers several benefits like increased productivity, quality, and the ability to analyze the data. However, these advantages also bring some challenges and ethical considerations. The potential plagiarism, less critical thinking and concerns about integrity, authenticity, and validity underscore a cautious approach to AI-empowered writing among researchers. Some biased arguments and limitations of AI tools emphasize the importance of human research and understanding of nuances, encouraging to keep the balance between human and AI tools. To navigate these challenges, researchers are required to prioritize the awareness of AI, ethical implications, and continuous skills development. Researchers can uphold the integrity and authenticity of their work only by embracing AI as a complement to human creativity and critical thinking rather than a complete replacement.

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