

Short Communication**Linguistic Features of AI-Generated Scientific Manuscripts in Medical Fields: Writing Instruction for Biomedical Authors**

Nematullah Shomoossi¹, Fatemeh Baradaran Yazdi², Farzaneh Shomoossi³, Abdurrashid Khazaei Feizabad^{4}*

¹Sabzevar University of Medical Sciences, Sabzevar, Iran

²Department of Education, Sabzevar, Iran

³Imam Khomeini International University, Qazvin, Iran

⁴Zahedan University of Medical Sciences, Zahedan, Iran

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Abstract

The advent of artificial intelligence (AI) has precipitated a paradigm shift in the methodologies employed for drafting scientific manuscripts, particularly within the biomedical field. As an educator and researcher specializing in English as a Foreign Language (EFL) for biomedical authors, we have observed an increasing reliance on AI tools for various stages of manuscript preparation, including drafting, editing, and refinement. This evolution presents both promising opportunities and tough challenges that require careful consideration, especially regarding the distinctive features of AI-generated manuscripts and their implications for EFL authors. The present short communication aims to introduce linguistic features of AI-generated scientific manuscripts in medical fields and offer some implications for biomedical authors.

Keywords: Artificial Intelligence, Biomedical Authors, English as a Foreign Language

* Corresponding Author's E-mail: arkhazaei@yahoo.com

1. Introduction

The advent of artificial intelligence (AI) has precipitated a paradigm shift in the methodologies employed for drafting scientific manuscripts, particularly within the biomedical field. As educators and researchers specializing in English as a Foreign Language (EFL) for biomedical authors, we have observed an increasing reliance on AI tools for various stages of manuscript preparation, including drafting, editing, and refinement (Khaleel et al., 2024). This evolution presents both promising opportunities and tough challenges that require careful consideration, especially regarding the distinctive features of AI-generated manuscripts and their implications for EFL authors.

2. Proliferation of AI Tools in Scientific Writing

Recent advancements in natural language processing (NLP) have led to the development of sophisticated AI applications capable of generating coherent and contextually relevant text (Ramírez, 2024). In the biomedical and healthcare sectors, researchers are increasingly utilizing these tools to streamline the writing process, enhance clarity, and improve the overall quality of their manuscripts (Fornalik et al., 2024). However, it is imperative to acknowledge that while AI can serve as a valuable adjunct in the writing process, it introduces unique linguistic characteristics that may diverge from conventional academic standards.

3. Linguistic Features of AI-Generated Manuscripts

AI-generated scientific manuscripts often exhibit specific linguistic features that may not align with the expectations of scholarly writing (Bahammamet al., 2023). Below, we will list a number of such key characteristics. First of all, AI systems prioritize producing clear and accessible text; however, this focus may inadvertently compromise the depth and nuance essential for articulating complex scientific ideas. EFL authors must remain attentive to ensure that AI-generated content accurately reflects the intricacies of their research.

Secondly, while the precise use of specialized terminology is critical in biomedical writing, AI models may occasionally generate inconsistent or erroneous technical terms. Therefore, non-native authors should meticulously review AI outputs to ensure terminological accuracy and contextual appropriateness. Thirdly, AI-generated texts

frequently adhere to predictable sentence structures, favoring simplicity over complexity, often resulting in a monotonous rhythm that undermines the manuscript's engagement and sophistication. That's why EFL authors are encouraged to incorporate varied syntactical constructions to enhance the academic tone and dynamism of such written outputs.

Fourth, scholarly communication is associated with highly accurate citation practices, while AI tools may produce fictitious or improperly formatted citations (Walters & Wilder, 2023). EFL authors are recommended, therefore, to rigorously verify all suggested references to ensure compliance with the specific guidelines mandated by their target journals. Finally, a uniform writing style can play a paramount role in academic manuscripts; however, AI-generated texts often exhibit stylistic inconsistencies due to the diverse nature of their training data.

Therefore, non-native authors opting to use AI tools should cautiously deal with these discrepancies and undertake humanized revisions to align AI-generated content with their own writing style and disciplinary conventions (Nguyen et al., 2024).

4. Implications for EFL Authors

The integration of AI tools into scientific writing presents unique challenges for EFL authors operating within biomedical disciplines. While these technologies can facilitate certain aspects of the writing process, they necessitate a critical approach to ensure that the final manuscript adheres to the rigorous standards of academic publishing (Carobene et al., 2024). To navigate this evolving landscape effectively, non-native authors may consider the following strategies. First, they should approach AI-generated content with a critical lens, recognizing its limitations and actively engaging in the revision process to enhance clarity and precision. Second, collaboration with language specialists or experienced editors who inadvertently refer to large language models can provide invaluable insights into refining AI-generated manuscripts, ensuring adherence to disciplinary conventions (Ahn, 2024). Third, biomedical authors should prioritize ongoing professional development in scientific writing to better leverage AI tools while maintaining a strong command of language and style.

In conclusion, while AI tools offer significant potential to augment the scientific writing process, authors of biomedical and healthcare journals are expected to navigate the complexities associated with AI-generated texts judiciously before they submit the written

products to scholarly journals. In addition, by fostering a critical understanding of these linguistic characteristics and employing strategic revision practices, authors can enhance the quality and impact of their manuscripts within the biomedical literature. Finally, attending scientific writing workshops should be a priority in this era to raise their consciousness towards differences between AI-generated and human writing.

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