

A Bleeding Edge or a Cutting Edge? A Systematic Review of ChatGPT and English as a Second and/or Foreign Language Learners' Writing Abilities

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Abstract

This systematic review, adhering to PRISMA guidelines (Page et al., 2021), examines the educational implications of ChatGPT, an AI language model by OpenAI, on the writing abilities of English as a Second and/or Foreign Language (ESL/EFL) learners. Relying on data from academic databases like Scopus and Web of Science, the review integrates both statistical techniques and qualitative content analysis to assess the model's multi-faceted impact. While ChatGPT offers benefits such as rapid grammar checking and word suggestions, empirical evidence suggests it may discourage the development of critical skills, such as reasoning and structure, that are crucial for academic writing. The paper delves into ChatGPT's role in potentially diminishing capacities for organization, cohesion, and grammar, thereby presenting a complex picture of its impact on ESL/EFL writing. Additionally, the review emphasizes the need for a balanced approach that includes initial writing, draft improvement, and editing. The review concludes by advocating for future research that explores adaptive curricular and alternative pedagogical strategies, such as peer review, teacher-student conferences, and scaffolding, that can foster independent writing skills among ESL/EFL learners. This work thus serves as a comprehensive guide for educators, teachers and policymakers to understand the nuanced impacts of ChatGPT and adjust educational practices accordingly.

Keywords: ChatGPT, EFL/ESL, Writing Skills, Teaching Strategies, AI Pedagogy



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Introduction

ChatGPT, developed by OpenAI in November 2022, has revolutionized natural language processing with its ability to emulate human writing across various formats by adapting its tone, lexical selection, and syntactic structure to a predetermined genre or format. The original GPT's ability to mimic human writing was groundbreaking. Though initially launched as a conversational chatbot, it is being utilized for various purposes, especially to produce an immeasurable amount of text that can mimic human writing to a vast degree in all formats, from formal to casual. It can also adjust word lengths, formats, and vocabulary while ensuring accuracy, based on the data it was fed with, with minimal user help and guidance (West, 2023). On the other hand, ChatGPT provides valuable support for writing activities, offering suggestions for word choice and grammar and providing quick answers to factual questions. However, they require double-checking to ensure accuracy. All these attracted the attention of learners, educators, teachers and researchers.

Nevertheless, there are many concerns about the potential impact on the development of writing skills using ChatGPT, especially for ESL/EFL learners. For example, a concern raised that ESLEFL learners need practice in generating original ideas, organizing thoughts, maintaining cohesion, using proper grammar, and developing critical thinking skills. Another concern is the overreliance on ChatGPT for quick and effortless text generation, which could impede the development of these skills, claiming that it lacks personalization and cognitive processing, essential for effective language learning.

Moreover, plagiarism is an additional concern for teachers who argue that ChatGPT has also fooled multiple plagiarism checkers. Concerns about students cheating or utilizing ChatGPT to complete their work have risen to a strong degree, as have worries about students no longer investing time and energy in their writing skills (Roose, 2023). One of the main concerns is the fact that the students can open ChatGPT and type in a few keywords to have a long article ready in seconds that may have taken days, which provokes a concern about the future of students' writing abilities, attention span, vocabulary, ability to organize their thoughts, and cohesion in their own creative and original ways.

Rationale and Objective

The rationale for making this review systematic instead of a simple literature review is not only to highlight the rapid research updates on ChatGPT and its impact on writing skills per day but to pinpoint the upcoming research on ChatGPT and guide teachers on the possibilities to facilitate learners' writing. The researcher is initiating this review of the current literature on evaluating students' language skills through writing-based tasks and the rise of ChatGPT. The researcher also sought to understand how the regular usage of ChatGPT may affect the learners' writing skills, thereby impacting their language skills, including vocabulary, grammar, and punctuation. Hence, insights from this research could guide the design of curricula that capitalize ChatGPT's strengths in language learning acquisition and the importance of pedagogical decisions responsive to the impacts of ChatGPT on student learning. The review also helps inform policy and practice, advocating for using ChatGPT in educational settings to optimize students' learning outcomes.

Research Questions

This research addresses the following questions:

- How does the utilization of ChatGPT impact the writing proficiency of ESL/EFL learners?
- What are the potential benefits and challenges associated with integrating ChatGPT into writing activities for ESL/EFL learners?
- What are the English language teachers' perceptions towards approving or banning ChatGPT in classrooms?
- What are the English language teachers' suggested ways to overcome the damaging effect of ChatGPT on ESL/EFL learners' writing skills?

Method

Eligibility Criteria and Search Strategy

Given the niche nature of this topic and to reduce publication bias in the final sample of total papers, the researcher searched for not only journal articles but also books, book chapters, dissertations, and, most importantly, newspaper articles to gain an insider perspective on mainstream opinions about ChatGPT. The researcher excluded reading, speaking, and listening research, focusing only on ESL and EFL writing-related research. The exclusion criteria for studies relating to ChatGPT were based on the research's connection to developing students' writing skills (Figure 1). The search was conducted from February to June 2023. Though the main search was through Google Scholar, the researcher also searched through databases such as WorldCat, ResearchGate, Web of Science, Jstor, SCOPUS, SpringerLink, and ProQuest under ERIC. The researcher included studies that met the following criteria: Articles discussing ChatGPT or GPT-3 and articles with ChatGPT or GPT-3. Each of the final thirty relevant articles found had written the term "ChatGPT" with no spacing. Ultimately, "ChatGPT" was the final selected term. Each database search was conducted similarly.

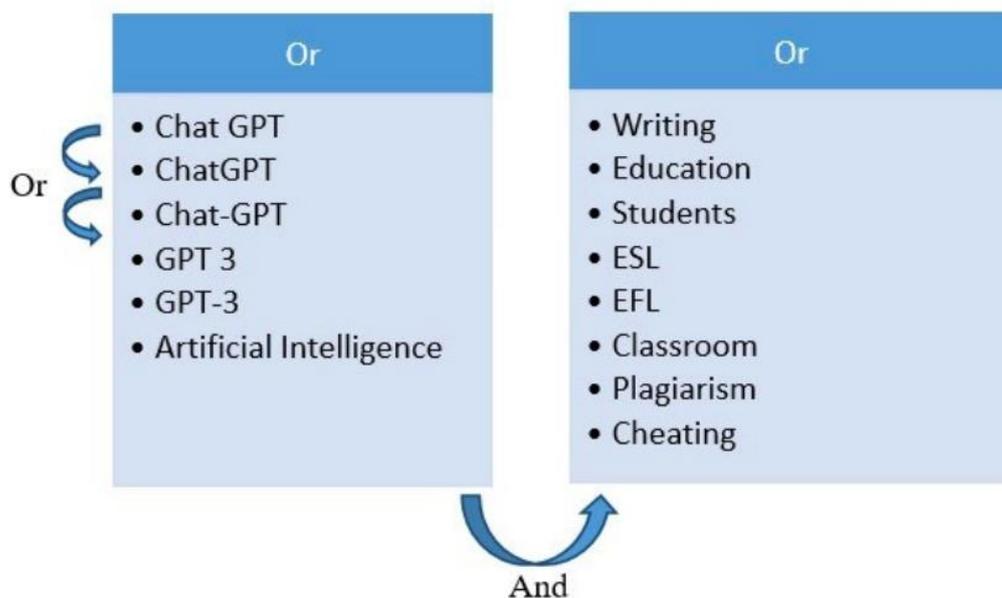


Figure 1: Composition of the search query with Boolean operators "And" and "Or" to indicate the systematic search

Research Design of Literature

The systematic review's research design adheres to the PRISMA criteria and checklist (Page et al., 2021), which are updated guidelines for reporting systematic reviews (PRISMA 2020 statement) that promote transparency and rigor in the review process. A comprehensive search of reputable databases is conducted to find peer-reviewed scholarly journals that focus on using ChatGPT to promote English writing skills for ESL/EFL learners. The inclusion and exclusion criteria are carefully established to select studies that address the research question, and the quality of the included studies is assessed using appropriate tools. Following a predefined protocol, data extraction is performed, and the findings from the selected studies are synthesized and analyzed to provide a comprehensive understanding of the effectiveness of using ChatGPT as a tool for enhancing the writing abilities of ESL/EFL learners.

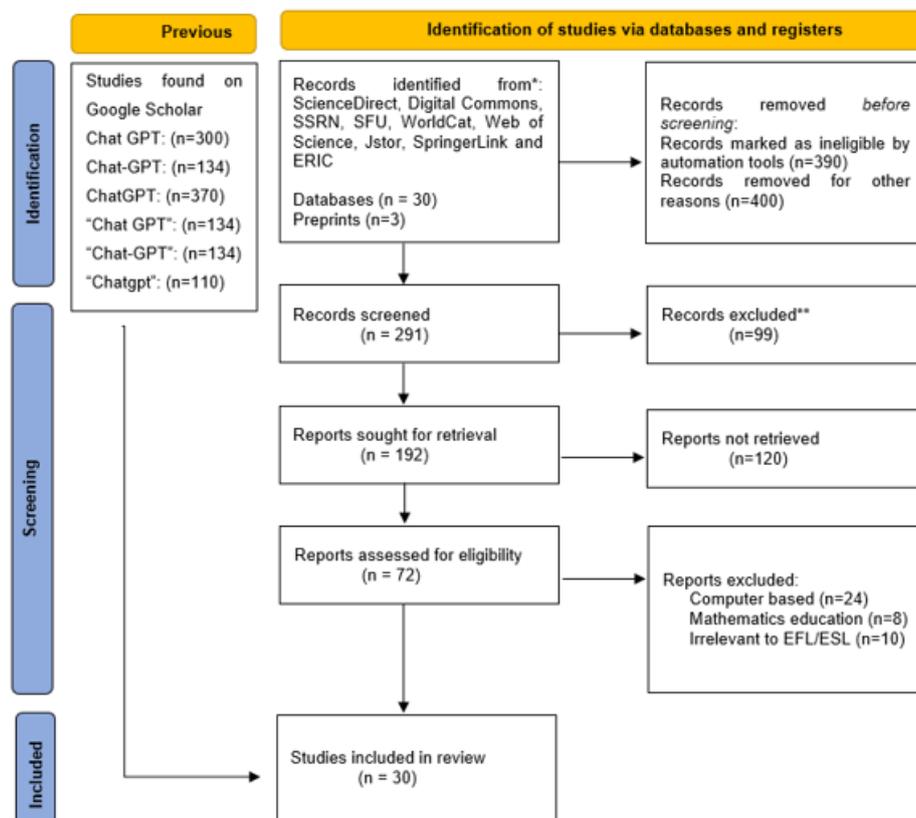


Figure 2: Research Design of Literature

Research on ChatGPT and ESL/EFL Writing

Writing is a crucial tool for cognitive processes, organizing thoughts, empathizing, and communicating effectively. Writing is a recursive process with hierarchical thinking processes that require self-composition (Flower & Hayes, 1981). Beyer (1988) differentiates thinking from thinking skills, suggesting that thinking is a process in which a learner manipulates sensory input. Conversely, thinking skills are described as operations that an individual utilizes to steer mental processes, as demonstrated in activities like writing. Most importantly, writing includes a conscious and concerted effort on the part of learners to encourage personal self-development. In ESL/EFL, English writing tasks-based teaching can help nurture organizing skills, outlining, and note-taking ability with feedback by teachers to

improve their drafts (Shabitha & Makela, 2023). Unfortunately, each of these factors is bypassed through the usage of ChatGPT, which reduces motivation to invest learners' time and energy into writing (Hang, 2023).

Rudolph (2023) argues that ChatGPT has been explored as a potential aid for ESL/EFL learners in improving and personalizing their writing skills; however, concerns about accuracy and ethical issues have been raised (Sebastian, 2023). Nevertheless, Yeadon et al. (2023) highlight that teachers' resistance to adapting to the technological changes in assessing student progress may hinder the potential aid ChatGPT offers. Moreover, Kasneci et al. (2023) suggest that ChatGPT can aid young children in developing writing skills through prompts and summarizing content, empowering learners with disabilities, and assisting in report writing. It also aids ESL students in summarizing, vocabulary explanations, and grammar.

Key Findings

The key findings revealed that ChatGPT, an AI-powered tool, has emerged as an effective solution for personalizing writing and self-assessment of written texts if used properly (Rudolph, 2023), facilitating grading and student engagement (Nguyen, 2023). Furthermore, ChatGPT aids in developing and organizing grammar and vocabulary and proves efficient in generating essay drafts (Lin, 2020), which leads to improved student engagement in the writing process (Zhao, 2023). Lin et al. (2023) emphasize the benefits of ChatGPT in teaching writing skills but caution about ethical boundaries and copyright issues. Kasneci et al. (2023) highlight the potential of ChatGPT in assisting young learners by providing prompts and summarizing content.

However, the implementation of ChatGPT in ESL/EFL education is not without challenges. Algaraady and Mahyoob (2023) found out that although ChatGPT is useful for finding superficial faults, it cannot substitute human teachers' knowledge and nuanced comprehension in recognizing problems pertaining to the more intricate areas of writing. Accuracy and resistance to technology in assessment remain concerns (Rudolph, 2023). While ChatGPT is beneficial for grammar and vocabulary, Lin (2023) highlights concerns about the accuracy of content, particularly in aiding conceptual planning and suggests utilizing ChatGPT for asynchronous communication and grading, but precautions should be taken to address issues like plagiarism and unfair advantages. Xiao (2023) notes that while ChatGPT aids in organizing essays, it may reduce learners' critical thinking and autonomous editing skills, underscoring the necessity for instructor guidelines. Ethical considerations also arise, particularly in distinguishing between AI-assisted writing and original student work. This raises potential issues of plagiarism and fairness among learners. Atlas (2023) provides a guide for learners to navigate ChatGPT, emphasizing the need to understand the software's capacities and ethical considerations. However, concerns remain about cheating, undermining writing skills, and inaccuracies generated by AI.

Teachers had varied reactions, from outright expulsions to incorporating the technology in their classes (Lin, 2023; Nguyen, 2023), especially the varied perspectives of English language teachers regarding the use of ChatGPT in classrooms highlight the importance of responsible and strategic application of this technology. The majority expressed that integrating ChatGPT into educational settings offers challenges. Teachers pinpointed the need to find a balance in integrating ChatGPT in learning writing, ensuring that it enhances learning outcomes without compromising creativity or academic integrity (Uzun, 2023).

Teachers agreed that academic integrity is challenging to maintain when learners find more accessible avenues to progress without their teachers being alerted to these issues. Hence, teachers can implement a combination of honor codes, a regulatory framework, discussions about ethics, and the use of AI detection tools to uphold academic integrity.

Discussion

ChatGPT has demonstrated its efficacy as a beneficial tool for improving the writing abilities of ESL or EFL learners. ChatGPT can easily inspire students with access to information and creative ideas and facilitate teaching writing. Its role in the initial drafting and idea generation stages can foster writing development, albeit with the necessary human input for refinement and critical thinking. This leads to the point that ChatGPT ultimately cannot replace the human element of writing, and the value of reflective, intentional writing to promote critical thinking skills is essential.

Nevertheless, the transformation of pedagogical methodologies in writing has numerous benefits. Still, the concern that humanity's capacity to think of creative ideas is unfounded. It also has significant drawbacks for younger generations who have not yet developed their own writing styles. In addition, there is a possible decrease in the capacity of students to produce their own writing concepts in a well-organized fashion, which is a matter of worry among younger learners.

To effectively utilize ChatGPT, teachers should familiarize themselves with the AI by starting training to eliminate their unfamiliarity with using ChatGPT in teaching (Algaraady and Mahyoob, 2023). Moreover, they need to incorporate discussions about AI in coursework and encourage learners to include personal details in their writing and ensure the proper process of writing details. They can also use the scaffolding approach and plagiarism detection tools. On the other hand, educators and policymakers must adapt to technological changes and start developing conceptual regulatory frameworks after having transparent and open discussions with institutional stockholders, faculty and students.

As ChatGPT's design focuses on production, not assistance, teachers need to guide learners into a balanced AI integration with structured guidance (Yan, 2023), especially in writing the right prompts (Kasneci et al., 2023) and for higher-level writing tasks (Gayed et al., 2022). Furthermore, teachers need to uphold academic integrity (Uzun, 2023) and promote originality by teaching proper citation, critical thinking, the ethical use of writing aids, and regular monitoring of the use of plagiarism tools. This indeed comes with teachers ensuring the ethical use of the software (Atlas, 2023).

Several recommendations emerged for learners' progress in learning EFL and ESL writing, one of which is to ensure that teachers are personally involved in learners' progress. This means encouraging learners to write while teachers provide feedback for multiple draft improvements, as these techniques can teach learners the value of editing, organizing, proofing, and improving rather than simply producing. Teachers are recommended to use approaches emphasizing human-led writing activities and critical engagement, ensuring that ChatGPT supports rather than replaces these processes. As such, while recognizing the value of AI tools like ChatGPT, it is crucial to focus on human-led writing activities, especially in the context of ESL/EFL learning environments.

Conclusion

This systematic review seeks to comprehensively review the utilization of ChatGPT in enhancing the English writing proficiency of ESL/EFL learners. The review recognizes ChatGPT capabilities in automated tutoring and generating content. Nevertheless, it acknowledges the possible complications and obstacles when integrating ChatGPT into conventional writing teaching approaches. To optimize the benefits of ChatGPT while minimizing any possible risks, the review proposes implementing a well-balanced approach. It underscores the importance of teachers in conscientiously incorporating ChatGPT into the educational environment. Teachers and educational institutions should develop clear guidelines and criteria for utilizing ChatGPT.

It also proposes the incorporation of ChatGPT into language learning curriculum to augment learners' abilities in an academic setting. Nevertheless, it underscores the importance of ChatGPT as an assistant rather than a substitute for learners' critical thinking skills.

Further investigation is required to fully understand the influence of ChatGPT and to develop efficient approaches for teacher education programs. It is also important to further examine cultural reactions to AI tools and evaluate ChatGPT's effectiveness against other tools.

References

- Algaraady, J., & Mahyoob, M. (2023). ChatGPT's capabilities in spotting and analyzing writing errors experienced by EFL learners. *Arab World English Journal (AWEJ) Special Issue on CALL* (9), 3-17. <https://dx.doi.org/10.24093/awej/call9.1>
- Atlas, S. (2023). Chatbot prompting: A guide for students, educators, and an AI-augmented workforce. Available from https://www.researchgate.net/publication/367464129_Chatbot_Prompting_A_guide_for_students_educators_and_an_AI-augmented_workforce
- Beyer, B. K. (1988). *Developing a thinking skills program*. Boston: Allyn and Bacon.
- Flower, L., and Hayes, J. R. (1981). A cognitive process theory of writing. *College Composition and Communication*, 32(4), 365-387. <https://www.jstor.org/stable/356600>
- Gayed, J., Carlon, M. K., Oriola, A., & Cross, J. (2022). Exploring an AI-based writing assistant's impact on English language learners. *Computers and Education: Artificial Intelligence*, 3. <https://doi.org/10.1016/j.caeai.2022.100055>
- Hang, N. (2023). EFL teachers' perspectives toward the use of ChatGPT in writing classes: A case study at Van Lang University. *International Journal of Language Instruction*, 2(3), <https://doi.org/10.54855/ijli.23231>
- Kasneji, E., Seßler, K., Küchemann, S., Bannert, M., Dementieva, D., Fischer, F., Gasser, U., Groh, G., Günemann, S., & Hüllermeier, E. (2023). ChatGPT for good? On opportunities and challenges of large language models for education. <https://doi.org/10.35542/osf.io/5er8f>
- Lin, L. (2020). Perfectionism and writing performance of Chinese EFL college learners. *English Language Teaching*, 13(8), 35-45. <https://eric.ed.gov/?id=EJ1262332>
- Lin, Z. (2023). Why and how to embrace AI such as ChatGPT in your academic life. *Royal Society Open Science*. <https://doi.org/10.1098/rsos.230658>
- Nguyen, T. T. H. (2023). EFL Teachers' perspectives toward the use of ChatGPT in writing Classes: A case study at Van Lang University. *International Journal of Language Instruction*, 2(3), 1-47. <https://doi.org/10.54855/ijli.23231>
- Page, M. J., McKenzie, J. E., Bossuyt, P. M., Boutron, I., Hoffmann, T. C., Mulrow, C. D., Shamseer, L., Tetzlaff, J. M., & Moher, D. (2021). Updating guidance for reporting systematic reviews: development of the PRISMA 2020 statement. *Journal of Clinical Epidemiology*, 134, 103-112. <https://pubmed.ncbi.nlm.nih.gov/33577987/>
- Roose, K. (2023, January 12). Don't ban ChatGPT in schools. Teach with it. *NY Times*. Retrieved from <https://www.nytimes.com/2023/01/12/technology/chatgpt-schools-teachers.html>

- Rudolph, J., Tan, S., & Tan, S. (2023). ChatGPT: Bullshit spewer or the end of traditional assessments in higher education? *Journal of Applied Learning and Teaching*, 6(1). <https://journals.sfu.ca/jalt/index.php/jalt/article/view/689>
- Sebastian, G. (2023). Exploring ethical implications of ChatGPT and other AI chatbots and regulation of disinformation propagation. <https://www.researchgate.net/publication/371125404>
- Shabitha, M., and Makela, S. (2023). Impact of integrated writing tasks on thinking and writing skills of Indian ESL learners. *JALT*, 6(1). <https://doi.org/10.37074/jalt.2023.6.1.7>
- Uzun, L. (2023). ChatGPT and academic integrity concerns: Detecting Artificial Intelligence generated content. *Language Education & Technology (LET Journal)*, 3(1), 45-5. <https://www.researchgate.net/publication/370299956>
- West, C. (2023). ChatGPT: The future of intelligent conversation: How to use ChatGPT OpenAI to make money, personal assistant, research and daily life. Independently published. https://books.google.com.pk/books?id=_jOmEAAAQBAJ
- Xiao, Y., and Yuying Z. (2023). An exploratory study of EFL learners' use of ChatGPT for language learning tasks: Experience and perceptions. *Languages*, 8, 212. <https://doi.org/10.3390/languages8030212>
- Yan, D. (2023). Impact of ChatGPT on learners in a L2 writing practicum: An exploratory investigation. *Educ Inf Technol*. <https://doi.org/10.1007/s10639-023-11742-4>
- Yeadon, W., Inyang, O.-O., Mizouri, A., Peach, A., & Testrow, C. (2023). The death of the short-form physics essay in the coming AI revolution. *Physics Education*. <https://doi.org/10.1088/1361-6552/acc5cf>
- Zhao, F. (2023). ChatGPT's efficacy in improving Chinese EFL learners' argumentative essay writing. *TESOL Quarterly*, 57(1), 205-210. <https://doi.org/10.1002/tesq.358>

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