Proceedings of ICEIPI 2025 Symposium: Reimagining Society: AI's Role in Cultural Transformation and Learning Environments
DOI: 10.54254/2753-7048/2025.BO23872

Review of the Studies on the Impact of AI Tools on EFL Students' Writing

Yi Zhou

School of Foreign Languages and Cultures, Nanjing Normal University, Nanjing, China
zoe20031119@gmail.com

Abstract: This review explores how Artificial Intelligence (AI) tools influence students' writing performance in learning English as a Foreign Language (EFL). Specifically, it focuses on three major categories of AI-based tools that support EFL learners in developing their writing competencies: automated writing evaluation (AWE) systems, automated corrective feedback (AWCF) tools, and generative AI writing tools. The applications of these AI tools have changed how students engage with writing tasks and positively impacted their writing performance. However, AI tools still have limitations and present challenges, including potential over-dependence, weakening of core writing skills, and ethical concerns like plagiarism. In addition to examining the impacts, this paper investigates the perceptions of both EFL students and educators toward using AI writing tools. This paper provides a balanced approach where EFL educators can collaborate with AI tools and boost students' writing performance. Research continuously shows that when these AI tools are used in conjunction with human instruction rather than in place of it, student outcomes increase the most.

Keywords: Artificial Intelligence Tools, Writing Performance, English as a Foreign Language, Automated Writing Evaluation, Automated Writing Corrective Feedback

1. Introduction

Given the rapid progress in the field of artificial intelligence, especially in areas such as natural language processing (NLP) and machine learning, AI-driven tools have increasingly been adopted and incorporated into educational environments. As a crucial part of EFL students' second language acquisition, writing is a major concern for many students. In this context, AI tools have the potential to alleviate the cognitive load of writing and support skill development across varying proficiency levels [1]. The study by Gayed et al. demonstrated that English as a Foreign Language (EFL) students increasingly rely on diverse AI-based writing technologies throughout their writing process [2]. Siti Zulfa et al. found that students use 15 technology tools to produce higher-quality academic writing [3]. As AI tools become more widely utilized in language learning, growing attention has been paid to their potential to transform writing instruction. Therefore, it becomes essential to understand their impact on EFL students' writing. Existing review papers tend to focus on general language speakers, leaving a gap in the literature regarding EFL-specific contexts and recent research.

This review paper examines recent research on the advantages and disadvantages of AI technologies for EFL students' writing ability. These impacts are analyzed according to three main categories of AI writing tools: automatic writing evaluation (AWE) tools, automatic writing

© 2026 The Authors. This is an open access article distributed under the terms of the Creative Commons Attribution License 4.0 (https://creativecommons.org/licenses/by/4.0/).

DOI: 10.54254/2753-7048/2025.BO23872

corrective feedback (AWCF) tools, and generative AI tools. At the same time, this paper investigates the perceptions of both students and educators regarding the effect of AI tools in the context of EFL writing. While EFL students and educators typically hold favorable views of AI writing tools, some express apprehensions around excessive correction, erroneous feedback, and ineffective applications of these tools. Based on these perceptions, educators can better evaluate the strengths and weaknesses of AI-powered tools in authentic teaching contexts, offer theoretical foundations for instructional practices, optimize the integration of teaching resources, and strengthen the efficient utilization of AI tools in classroom settings.

This review thoroughly explores recent studies on the use of AI tools in the context of EFL writing, offering educators in the field of EFL writing instruction balanced perspectives and practical recommendations. Educators can collaborate with AI tools, accomplish their work more efficiently, and find a better approach to enhance students' writing performance.

2. Positive impacts of AI tools on EFL students' writing

2.1. Automated Writing Evaluation (AWE) and Automatic Writing Corrective Feedback (AWCF)

Integrating AI-powered writing tools with AWE and AWCF capabilities (e.g., Grammarly, ProWritingAid) has demonstrated significant potential in improving EFL students' writing performance [4]. Empirical studies indicated that these technologies effectively enhance multiple dimensions of writing quality, such as writing accuracy, writing proficiency, and overall writing competence [5].

Automated writing evaluation (AWE) systems employ advanced natural language processing (NLP) methods to deliver instant feedback on different components of writing, including style, grammar, spelling, and syntax [5]. Recent studies show that AWE tools have a measurable improvement in EFL students' writing proficiency. They can assist students in enhancing their EFL writing's precision, fluidity, content, and structural quality [6]. In addition, with the help of the immediate and diagnostic feedback of AWE tools, students can promptly understand the strengths and weaknesses of their writing. In addition to increasing the effectiveness of the revision process, students can enhance their work independently of their teachers' criticism.

AWCF tools specifically focus on providing detailed feedback on language errors. Quantitative and qualitative feedback on EFL writing is provided, bringing more chances for revision and editing [7]. Through AWCF tools, students can detect and rectify mistakes in areas such as grammar, spelling, punctuation, and other writing conventions. Barrot stated that AWCF, particularly through tools like Grammarly, can improve L2 learners' writing accuracy by fostering noticing, metalinguistic awareness, and self-directed learning [8]. Tools like Criterion also explain corrections, which promote students' self-learning. Furthermore, by using AWCF tools, EFL students can enhance the organization and fluidity of their written work. Therefore, AWCF tools have the potential to enhance learners' vocabulary range and improve their grammatical competence, particularly in terms of sentence variety and accuracy.

In summary, AWE and AWCF tools significantly benefit EFL writing by offering instant, personalized feedback. This feedback encourages students to actively participate while writing, allowing them to explore different writing approaches without the fear of severe criticism. The grammatical, syntactic, and lexical errors are detected effectively, which helps students improve their writing accuracy. Repeated exposure to corrections also reinforces their proper language use, resulting in higher writing proficiency.

DOI: 10.54254/2753-7048/2025.BO23872

2.2. Generative writing assistance

ChatGPT, developed by OpenAI, is a sophisticated AI language model that produces contextually appropriate and coherent text responding to given prompts. As a generative tool, it supports EFL students throughout different stages of the writing process, offering creative ideas, suggesting vocabulary and grammar improvements, and enhancing the overall coherence of their work. Unlike static AWE and AWCF tools, ChatGPT allows interactive dialogues and can provide context-aware suggestions instead of generic corrections. In recent years, many studies have examined ChatGPT's impact on EFL students' writing performance. These influences are reflected in different perspectives and stages of students' writing. Alsaedi discovered that ChatGPT can improve writing proficiency, increase writing efficiency and originality, and customize learning experiences [9]. Tsai, Lin, and Brown reported marked improvements in all four areas of writing quality, with vocabulary showing the most substantial gains, followed by grammar, organization, and content [10]. Xiao pointed out ChatGPT's potential as an effective AI tool to enhance EFL learners' writing proficiency regarding content, structure, and language use [11].

A key feature that differentiates ChatGPT from other AI writing tools is its text generation capability. It can generate various writing genres, including essays, emails, reports, stories, and even dialogues. Fluent English is generated, helping students develop their natural phrasing skills. The text generation function is especially helpful when considering the preparatory stage for EFL writing. ChatGPT can provide prompts or outline ideas if a student is unsure about the writing direction or topic. If a student is struggling to come up with creative ideas or beautiful sentences, ChatGPT can assist them in brainstorming and offer them possible versions of sentences. Moreover, ChatGPT can expand a topic and provide additional supporting points for students. Through the assistance of ChatGPT, students are encouraged to think more deeply and comprehensively about their writing. Woo, Guo, and Susanto examined students' use of generative AI tools in the context of short story writing as part of their academic work. They reported that such tools facilitated idea generation and narrative development by helping students overcome writer's block [12]. With the assistance of ChatGPT, students can write more confidently and creatively, overcome slow writing processes, and accelerate their language acquisition.

3. Negative effects of AI tools on EFL students' writing

AI tools provide notable benefits for students in terms of EFL writing, such as providing instant corrective feedback and generating texts. However, certain limitations have also been identified. Students need to use AWE or AWCF tools critically, for the potential of limited or even wrong feedback about grammar errors and text structure. According to Guo, Feng, and Hua, students who use AWCF tools such as Grammarly to help with academic writing received inappropriate feedback due to research writing's discipline-specific character [13]. The potential inaccuracies in the feedback shouldn't be overlooked. When using Grammarly, teachers also found that it neglected sentence structure errors and focused more on basic errors, such as spelling mistakes and grammatical errors [14].

Students have also expressed concerns about the over-reliance on ChatGPT [14]. They may stop thinking critically and generating their own ideas, relying on the suggestions offered by AI tools. This will result in weaker extended writing skills and poorer academic writing. To prevent such issues, it could be advantageous to impose restrictions on the use of AI tools. For example, students might be encouraged to utilize AI writing tools to brainstorm ideas and conduct final revisions, rather than relying on them throughout the drafting process. At the same time, students should be capable of quickly reflecting on the different types of feedback offered by AI writing tools.

DOI: 10.54254/2753-7048/2025.BO23872

Additionally, the excessive dependence on AI tools during the process of EFL writing can raise ethical concerns, such as plagiarism. It is important to maintain academic integrity instead of relying heavily on AI tools in the writing process. AI generative tools paraphrase the text from existing content without offering the source. This will lead to reduced originality and ethical dilemmas. Applying feedback from AI tools is beneficial for EFL students as it helps them revise their writing and generate ideas. Still, it is essential for them to maintain the integrity and authenticity of their work [15]. Otherwise, raising concerns about privacy, authenticity, and academic integrity is possible while using ChatGPT [16]. Students can utilize AI writing tools to generate outlines or keywords, which can be used to help with organizing their sentences and expressing their ideas. Furthermore, students should consider using AI tools to refine their writing after completing their drafts rather than relying on them to generate the entire essay.

4. Perceptions of EFL students and teachers on the impact of AI writing tools

In general, EFL students preferred utilizing AI tools for writing [17]. Students now favor the individualized feedback and assistance that AI tools offer. With the help of AI tools such as ChatGPT, students can obtain immediate feedback on their writing, enabling them to make prompt revisions. Cuiping Song and Yanping Song highlighted that incorporating ChatGPT into students' writing practices could lead to more efficient and effective learning results [18]. Integrating AI tools in writing instruction significantly enhanced students' confidence and self-efficacy, pushing them to exert greater effort to improve their writing skills. In addition, the effectiveness of the feedback provided by these AI tools plays a vital role in EFL writing. It helps writers structure their ideas effectively and align them with specific learning goals [5]. Miranty and Widiati reported that students considered immediate and comprehensive feedback from AI tools like Grammarly essential for effective writing development [19]. Students were motivated by the immediate and targeted feedback, and their writing motivation was enhanced. Students may be stressed and anxious while waiting days for teachers' advice on their writing, and are likely to be discouraged over time. The real-time correction of AI writing tools allows them to detect their errors immediately. It is of great help to improve students' writing in time and build their confidence. Moreover, the feedback of AI writing tools is more private and objective, and is not affected by human factors. This makes some students feel more comfortable accepting the suggestions without fear of embarrassment.

As for EFL teachers, the impact of these AI tools is generally perceived positively. Assessing each student's writing and offering tailored advice and guidance is a demanding and time-intensive process. However, with the help of AI tools like ChatGPT, the workload of EFL teachers is greatly reduced [20]. Another study showed that teachers sought help from Grammarly before giving their students personal feedback [14]. Students can make repetitive spelling errors or grammar errors, which are quite time-consuming for teachers to correct by themselves. When AI tools handle surface-level revisions, such as vocabulary and grammatical corrections, teachers can focus more on providing higher-order feedback. Teachers, for instance, may assess the argumentative rigor of student claims by analyzing the evidence provided, the logical consistency, and the theoretical basis behind them. By offloading the mechanical aspects of writing to AI tools, teachers can engage more deeply with the cognitive and intellectual aspects of the writing process. This balance between mechanical correction and intellectual engagement in pedagogy marks a substantial enhancement of educational resources.

However, negative perceptions are also often linked to the feedback's lack of specificity and helpful writing tips [5]. Fan found that students with a lower English proficiency level had difficulties applying the feedback and revising their writings effectively [21]. Teachers' expertise in providing personalized guidance according to students' learning situations remains indispensable. When it seems difficult for some students to take in the automated feedback of AI tools, it can be easier with

DOI: 10.54254/2753-7048/2025.BO23872

teachers' timely support. Teachers should encourage students to use AI tools that suit them, according to their own experiences with these technologies [22]. Also, students may be discouraged sometimes since AWCF tools catch every little error in their writings and tend to provide negative feedback [14]. Seeing a document covered in corrections can be frustrating for some students. Unlike teachers who provide both corrections and positive feedback for students' work, AI writing tools are designed for error identification and rarely provide motivational support. Furthermore, these tools cannot distinguish between critical errors and trivial inaccuracies. Overcorrection may hinder the development of students' writing motivation.

In fact, EFL learners' attitudes towards the impact of AI tools may be influenced by teachers' attitudes [23]. Educators need to develop a balanced and positive approach while using AI tools. As vital roles in shaping students' perceptions towards AI writing tools, EFL teachers should not simply introduce these technologies as error-checking tools. While acknowledging the abilities of these AI writing tools in providing corrective feedback, the limitations shouldn't be ignored. AI writing tools lack human qualities such as creativity and contextual understanding. It is the responsibility of educators to work in conjunction with AI writing tools, providing personalized and advanced guidance tailored to the needs of each student.

5. Conclusion

Integrating AI writing tools in education has greatly reshaped how students write in the EFL. A range of AI tools supports students by providing automated evaluations of their writing, corrective feedback, and text generation assistance. These different technologies provide immediate feedback, identify writing errors, and generate natural English text. Students' writing skills, accuracy, and other related competencies are enhanced. Moreover, the instant feedback of AI tools enables students to engage in a personalized writing process, greatly boosting their enthusiasm for EFL writing.

Although AI tools offer substantial advantages for EFL writing, their limitations and challenges must also be acknowledged. These AI tools do not always positively impact students' writing. Thus, teachers' guidance and feedback still play a critical role. Studies consistently highlight that student outcomes improve most significantly when these AI tools serve as a complement to human instruction, rather than a replacement. While AI tools handle the routine aspects of writing correction, the teachers must focus on higher-order writing skills and offer personalized guidance for students.

By collaborating with AI tools, teachers can maximize the potential of these technologies. Teachers can leverage AI advancements to make writing instructions more accessible and more effective. Teachers need to balance human guidance and AI-generated assistance, and create an environment where students' writing potential can be brought to the fullest.

References

[1] *W. Marzuki, U. Widiati, D. Rusdin, D. Darwin, and I. Indrawati, "The impact of AI writing tools on the con tent and organization of students' writing: EFL teachers' perspective," Cogent Education, vol. 10, no. 2, 20 23, doi: 10.1080/2331186x.2023.2236469.*

[2] *S. Zulfa, R. S. Dewi, D. N. Hidayat, F. Hamid, and M. Defianty, "The use of AI and technology tools in de veloping students' English academic writing skills," Proceeding International Conference on Education, pp. 47-63, 2023.*

[3] *J. M. Gayed, M. K. J. Carlon, A. M. Oriola, and J. S. Cross, "Exploring an AI-based writing assistant's im pact on English language learners," Computers and Education: Artificial Intelligence, vol. 3, no. 100055, pp. 1-7, 2022, doi: 10.1016/j.caeai.2022.100055.*

[4] *S. Ebadi, M. Gholami, and S. Vakili, "Investigating the effects of using Grammarly in EFL writing: The cas e of articles," Computers in the Schools, vol. 40, pp. 85–105, 2022.*

[5] *T. I. Aldosemani, H. Assalahi, A. Lhothali, and M. Albsisi, "Automated writing evaluation in EFL contexts," International Journal of Computer-Assisted Language Learning and Teaching, vol. 13, no. 1, pp. 1–19, 2023, doi: 10.4018/ijcallt.329962.*

DOI: 10.54254/2753-7048/2025.BO23872

[6] X. Cheng and L. J. Zhang, "Sustaining university English as a foreign language learners' writing performance through provision of comprehensive written corrective feedback," Sustainability, vol. 13, no. 15, p. 8192, 2021, doi: 10.3390/su13158192.
[7] M. Rahimi, J. Fathi, and D. Zou, "Exploring the impact of automated written corrective feedback on the academic writing skills of EFL learners: An activity theory perspective," Education and Information Technologies, 2024, doi: 10.1007/s10639-024-12896-5.
[8] J. S. Barrot, "Using automated written corrective feedback in the writing classrooms: Effects on L2 writing accuracy," Computer Assisted Language Learning, vol. 36, no. 4, pp. 584–607, 2021, doi: 10.1080/09588221.2021.1936071.
[9] N. Alsaedi, "ChatGPT and EFL/ESL writing: A systematic review of advantages and challenges," English Language Teaching, vol. 17, no. 5, pp. 41-50, 2024.
[10] C. Tsai, Y. Lin, and I. K. Brown, "Impacts of ChatGPT-assisted writing for EFL English majors: Feasibility and challenges," Education and Information Technologies, 2024, doi: 10.1007/s10639-024-12722-y.
[11] Q. Xiao, "ChatGPT as an artificial intelligence (AI) writing assistant for EFL learners: An exploratory study of its effects on English writing proficiency," Proceedings of the 9th International Conference on Information and Education Innovations, pp. 51–56, 2024, doi: 10.1145/3664934.3664946.
[12] D. J. Woo, K. Guo, and H. Susanto, "Exploring EFL students' prompt engineering in human–AI story writing: An activity theory perspective," Interactive Learning Environments, pp. 1–20, 2024, doi: 10.1080/10494820.2024.2361381.
[13] Q. Guo, R. Feng, and Y. Hua, "How effectively can EFL students use automated written corrective feedback (AWCF) in research writing?" Computer Assisted Language Learning, vol. 35, no. 9, pp. 2312–2331, 2021, doi: 10.1080/09588221.2021.1879161.
[14] S. Koltovskaia, "Postsecondary L2 writing teachers' use and perceptions of Grammarly as a complement to their feedback," ReCALL, vol. 35, no. 3, pp. 290–304, 2022, doi: 10.1017/s0958344022000179.
[15] A. Y. Virlan and B. Tomak, "A Q method study on Turkish EFL learners' perspectives on the use of AI tools for writing: Benefits, concerns, and ethics," Language Teaching Research, 2024, doi: 10.1177/13621688241308836.
[16] S. Vaccino-Salvadore, "Exploring the ethical dimensions of using ChatGPT in language learning and beyond," Languages, vol. 8, no. 3, p. 191, 2023, doi: 10.3390/languages8030191.
[17] Y.-J. Lee, R. O. Davis, and S. O. Lee, "University students' perceptions of artificial intelligence-based tools for English writing courses," Online Journal of Communication and Media Technologies, vol. 14, e202412, 2024.
[18] C. Song and Y. Song, "Enhancing academic writing skills and motivation: Assessing the efficacy of ChatGPT in AI-assisted language learning for EFL students," Frontiers in Psychology, vol. 14, 2023.
[19] D. Miranty and U. Widiati, "An automated writing evaluation (AWE) in higher education," Pegem Journal of Education and Instruction, vol. 11, no. 4, 2021, doi: 10.47750/pegegog.11.04.12.
[20] F. R. Baskara, "Integrating ChatGPT into EFL writing instruction: Benefits and challenges," International Journal of Education and Learning, vol. 5, no. 1, pp. 44–55, 2023, doi: 10.31763/ijele.v5i1.858.
[21] N. Fan, "Exploring the effects of automated written corrective feedback on EFL students' writing quality: A mixed-methods study," SAGE Open, vol. 13, no. 2, 2023, doi: 10.1177/21582440231181296.
[22] J. Liang, F. Huang, and T. Teo, "Understanding Chinese university EFL learners' perceptions of AI in English writing," International Journal of Computer-Assisted Language Learning and Teaching, vol. 14, no. 1, pp. 1–16, 2024, doi: 10.4018/ijcallt.358918.
[23] S. Liu and F. Huang, "Examining teachers' influence on MOOCs learners' continuance learning intention: The mediating effects of perceived usefulness and satisfaction," Journal of Pedagogical Research, 2023, doi: 10.33902/jpr.202322513.