CHATGPT-BASED REFLECTIVE FEEDBACK TO IMPROVE EFL GRADUATE STUDENTS' ACADEMIC WRITING FOR PUBLICATION

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Article Info	Abstract
	This case study explores the impact of ChatGPT-based reflective feedback on fostering academic writing among graduate students in English as a Foreign Language (EFL) programs, particularly in the context of writing for publication. Twenty graduate students participated in this study, which employed pre- and post-writing assessments, reflective journals, surveys, and interviews to examine improvements in writing performance and learner perceptions. The findings reveal substantial progress in grammar, vocabulary, coherence, and clarity after the integration of ChatGPT feedback, while gains in argumentation and critical analysis were more limited. Students reported that ChatGPT's immediate and detailed feedback fostered self-awareness, confidence, and motivation, contributing to greater learner autonomy in the writing process. However, some participants faced difficulties in interpreting AI-generated suggestions, especially for higher-order writing skills required in scholarly writing. These results suggest that ChatGPT-based feedback effectively supports surface- and structure-level revisions but remains less effective in developing advanced academic reasoning. The study highlights the potential of AI-driven tools as valuable complements to human instruction, emphasizing the importance of hybrid feedback models that combine AI and expert guidance. Future research is recommended to examine longitudinal effects, adaptive AI systems, and instructional strategies that train students to critically interpret and apply AI feedback. Overall, the study provides pedagogical insights into the integration of AI-assisted reflective feedback for fostering autonomy and improving academic writing quality in EFL postgraduate contexts.

INTRODUCTION

In the ever-evolving landscape of education, the integration of artificial intelligence (AI) into pedagogical practices has sparked both enthusiasm and skepticism. Among the myriad AI applications, ChatGPT, an advanced language model developed by OpenAI, has gained significant attention for its potential to enhance academic writing, particularly in English as a Foreign Language (EFL) contexts (Chukwuere, 2024). As universities worldwide increasingly emphasize the importance of academic writing for publication, especially in English, the demand for innovative tools to support students in mastering these skills has grown substantially. What sets this study apart is its focus on the reflective use of ChatGPT as more than a corrective tool, positioning it instead as a partner in metacognitive engagement, where students are encouraged to think critically about feedback, assess their own writing, and revise progressively. This innovative application goes beyond grammar correction, exploring how ChatGPT can mediate a reflective dialogue between writer and text. However, while traditional methods of writing instruction remain dominant, AI-powered tools like

ChatGPT offer unique opportunities to revolutionize how feedback is provided, potentially transforming the process of writing for publication. Recent studies highlight the growing role of AI in education, with AI tools like ChatGPT being identified as an effective agent for personalized learning (Van Der Vorst & Jelicic, 2019).

Academic writing, particularly in the field of EFL, is not only a crucial skill for students aiming to succeed in their studies but also an essential component of their academic identity. Writing for publication in English is often seen as a challenging endeavor, particularly for non-native speakers. Research by Hyland (2016) and Swales & Feak (1996) highlights that effective academic writing involves mastering a range of skills, including grammatical accuracy, coherence, argumentation, and the ability to follow disciplinary conventions. Given that these skills are complex and multifaceted, providing meaningful and timely feedback is a cornerstone of writing development. Traditionally, this feedback has been delivered by instructors; however, with the rise of AI, there is a growing interest in whether tools like ChatGPT can supplement or even replace traditional feedback mechanisms to improve writing outcomes. Research on AI applications in education (Alharbi, 2023) (Reinders & Wattana, 2012) suggests that AI can provide an efficient and scalable way to support language learners' writing development, particularly in areas such as vocabulary enhancement and grammar correction.

ChatGPT has demonstrated remarkable success in various applications, from customer service to content generation, thanks to its ability to process natural language and generate contextually relevant responses. In the context of writing instruction, ChatGPT can provide instant, personalized feedback that is accessible at any time, a feature especially beneficial in the EFL classroom, where students often struggle with language-related issues and writing mechanics (Zhu Yutong et al., 2024). AI tools like ChatGPT enable more flexible learning environments where students can interact with their writing autonomously, without waiting for delayed instructor feedback (Wang, 2025) (Wang & Xie, 2023). Recent work by Liu & Zhang (2024) and Nair et al. (2024) indicates that when used reflectively, AI tools can foster higher-order thinking, prompting learners to make conscious, theory-informed writing choices, thus deepen their engagement with academic conventions. However, while some studies have explored the effectiveness of AI tools in language learning (Harunasari, 2023; Yusrini et al., 2025; Setiawan & Luthfiyani, 2023; Li & Li, 2023; and Zen Munawar et al., 2023), there remains a gap in the literature regarding the specific application of ChatGPT-based feedback to academic writing for publication in an EFL context. As such, this research seeks to explore the potential of ChatGPT in enhancing the writing skills of graduate students in EFL programs and its role in supporting students' academic writing for publication.

The potential advantages of ChatGPT-based feedback are manifold. First, AI tools can provide immediate feedback, allowing students to engage with their writing continuously rather than waiting for feedback from instructors, which may take days or even weeks (Baker, 2022). This immediacy can foster a more interactive learning experience, allowing students to apply the feedback in real-time and refine their drafts progressively. Second, AI feedback can be tailored to individual students, addressing specific areas of weakness such as grammar, vocabulary, or sentence structure. Such tailored learning can help bridge the gap between students' diverse proficiency levels, enabling them to progress at their own pace. Recent studies (Zhu Yutong et al., 2024; and Wu, 2024) show that AI's adaptability to individual learners is crucial for personalized language learning, particularly in contexts where feedback needs to be fine-tuned for students' different writing abilities.

Despite these advantages, integrating AI into writing instruction is not without challenges. The interpretation and application of AI feedback remain a concern, particularly for students who may lack the metacognitive skills to analyze and act on suggestions made by the AI (Hardinansyah & Hamidah, 2024; and Kim & Kim, 2023). Moreover, AI tools like

ChatGPT primarily focus on surface-level aspects of writing, such as grammar and syntax, which means that they may not be as effective in addressing higher-order writing skills, such as argumentation, critical analysis, and the overall structure of academic papers (Chen, 2024). Comparative studies, such as El Ebyary and Windeatt (2010), have shown that traditional teacher feedback is more effective in guiding rhetorical development, while AI-based tools excel in micro-level corrections. Similarly, Ranalli (2021) found that automated writing evaluation (AWE) systems often lack the pedagogical nuance that human feedback provides. Recent work by Li, Link, and Hegelheimer (2023) in system highlights that blended feedback, combining AI-generated suggestions with instructor scaffolding, produces significantly better outcomes in EFL academic writing than either model alone. Additionally, students' perceptions of AI feedback may vary, with some students viewing it as a valuable resource and others perceiving it as a detached, impersonal alternative to traditional teacher feedback (Zhang, 2024; and Hwang, 2025). As AI continues to gain significance in educational settings, research is needed to explore students' engagement with AI-generated feedback and its potential impact on their writing development (Reinders & Wattana, 2012).

This study aimed to investigate the effectiveness of ChatGPT-based reflective feedback in improving the academic writing skills of graduate students in EFL programs. While prior studies have explored general AI feedback (e.g., Wang & Xie, 2023; Yoon & Kim, 2022), few have specifically examined its use in fostering learner autonomy and reflection, components increasingly emphasized in second language writing pedagogy (Hyland & Hyland, 2019). This study addressed that gap by positioning ChatGPT as a tool not only for correction but also for reflective engagement in revision. Specifically, this research focused on the impact of ChatGPT feedback on students' writing quality, learner autonomy, and perceptions of AI-based feedback. The research addressed the following questions:

1. How does ChatGPT-based reflective feedback impact the quality of academic writing among graduate students in EFL programs?
2. To what extent does ChatGPT-based feedback promote learner autonomy in the writing process for publication?
3. What are students' perceptions of ChatGPT-based feedback in enhancing their academic writing skills, and how do they engage with the feedback?

In addressing these questions, this study contributes to the growing body of research on the role of AI in language education and writing instruction. The findings highlight ChatGPT's potential as a practical tool for enhancing academic writing, particularly for publication in EFL contexts. By emphasizing ChatGPT's role in fostering reflective writing and metacognitive engagement, this study advances the discourse on AI as both a writing assistant and a cognitive scaffold in academic development. The research also offers pedagogical insights on integrating AI feedback into writing instruction while balancing it with traditional feedback to optimize learning outcomes.

This study is timely given the increasing reliance on digital tools in education and the growing interest in AI applications across sectors. Its findings are relevant for instructors, curriculum designers, and policymakers seeking to harness AI to support writing instruction, especially in non-native English-speaking contexts. Furthermore, the study contributes to broader discussions on the ethical and practical implications of AI in education, particularly concerning its role in facilitating or hindering students' learning and development (Wishart, 2024; Sekewael, 2024; and Thanh & Tran, 2025).

RESEARCH METHOD

This study employed a mixed-methods approach to examine the effectiveness of ChatGPT-based reflective feedback on academic writing for publication among EFL graduate students. By combining quantitative and qualitative techniques, this design provided a

comprehensive view of its impact on students' writing quality, learner autonomy, and perceptions. This section outlines the research design, participants, data collection, and data analysis procedures.

Research Design

This study adopted a case study design focusing on a cohort of EFL graduate students to explore the impact of ChatGPT-based feedback on academic writing. Writing improvements were measured through pre- and post-tests, while reflective journals, surveys, and interviews offered qualitative insights into students' engagement and perceptions. The research lasted 12 weeks, with data collected at three stages: baseline, post-feedback, and final reflections.

Research Participant

The participants in this study were 20 graduate students who enrolled in an EFL program (Batch 3 and Batch 4) at a private university in Surabaya, Indonesia. These students were selected through purposive sampling, as they were required to publish an academic paper as their final project. This selection ensured that all participants had similar educational backgrounds and academic writing experiences. The inclusion criteria required that participants be enrolled in a course that involved writing for publication and that they possessed a basic understanding of academic writing in English. The participants were assigned to receive feedback on their writing assignments using ChatGPT. Prior to the start of the study, they were briefed on how to engage with ChatGPT's feedback and the expectations of the research. All 20 participants were EFL graduate students with moderate to high digital literacy. Only five students (25%) had prior experience using AI tools like ChatGPT, mostly for non-academic purposes. This limited exposure suggested that most students relied on instructional guidance to engage effectively with the tool.

Data Collection Methods

Pre- and Post-Writing Tests

Students completed pre- and post-writing tests to assess the impact of ChatGPT-based feedback on academic writing. The pre-test involved a timed assignment related to their field, evaluated for grammar, coherence, vocabulary, and argumentation using a standardized rubric (e.g., Hyland, 2016; and Swales & Feak, 1996). After receiving feedback, students revised their texts for the post-test, which was assessed with the same rubric to enable direct comparison of improvements.

Reflective Journals

Throughout the study, students kept bi-weekly reflective journals to record their engagement with ChatGPT, perceived improvements, challenges, and usefulness of the feedback. Reflective journaling is well-established in educational research (e.g., Deneen, 2021). and was guided by principles of metacognitive writing and learner autonomy (Zimmerman, 2002; Wenden, 1991), as well as prior studies employing reflective writing in EFL contexts (Deng & Yuen, 2012). Prompts were designed to elicit cognitive, emotional, and strategic responses. Data were analyzed thematically following Braun and Clarke's (2006) six-step process with inter-coder reliability ensured through independent coding and discussion.

Surveys and Interviews

At the end of the intervention, a survey and semi-structured interviews were conducted to capture perceptions of ChatGPT-based feedback. The survey included Likert-scale items on usefulness, clarity, timeliness, accuracy, and its influence on autonomy and motivation (e.g. Reinders & Wattana, 2012). Follow-up interviews with five students

provided deeper insights into how they interpreted and applied the feedback. All interviews were transcribed and analyzed for recurring themes.

Data Analysis

Quantitative analysis was conducted on data from the pre- and post-writing tests which were analyzed using statistical methods to determine if there were significant improvements in students' writing quality. Specifically, paired sample t-tests were used to compare the scores of the pre- and post-writing tests, measuring improvements across key writing components: grammar, coherence, vocabulary, and argumentation. This approach allowed for a direct evaluation of the overall effect of ChatGPT-based feedback on students' academic writing. The writing assessment was based on a standardized rubric adapted from Hyland (2016) and Swales & Feak (1996). The analysis revealed statistically significant improvements in most areas, with large effect sizes observed particularly in coherence and flow, topic sentence use, and clarity. Moderate gains were found in grammar and vocabulary, while argumentation and critical analysis showed smaller yet meaningful improvements. To provide a more nuanced understanding, effect sizes ranged from 0.47 to 1.82, and 95% confidence intervals supported the reliability of these improvements. These results indicate that ChatGPT-based reflective feedback had a substantial impact on students' overall writing quality.

To assess students' perceptions of ChatGPT-based feedback, a 15-item Likert-scale survey was administered at the end of the study. The items were adapted from previous validated instruments on AI in language learning and learner autonomy (e.g., Reinders & Wattana, 2012), (Benson, 2006); Deci & Ryan, 2000); Little, 2016); and Nicol & Macfarlane-Dick, 2006). Students rated their agreement on a 5-point Likert scale (1 = Strongly Disagree, 5 = Strongly Agree). A pilot test of the survey was conducted with five graduate students outside the participant group to ensure clarity and consistency. Based on feedback, several items were revised for better alignment with the study context. Internal consistency was confirmed through Cronbach's alpha ($\alpha = 0.87$), indicating high reliability of the instrument.

Qualitative analysis was conducted using data from reflective journals, surveys, and interviews which were analyzed thematically following Braun & Clarke (2024) and Konstantinos (2024). This approach enabled the identification of recurring themes and patterns related to students' experiences with ChatGPT feedback (Qaissi, 2024). The analysis followed several key steps. First, all reflective journal entries were transcribed and repeatedly read to ensure deep familiarization with the data. During this process, significant statements and phrases related to students' engagement, challenges, and perceptions were identified and highlighted. These initial codes were then clustered into broader themes that captured recurring patterns associated with writing improvement, learner autonomy, and students' perceptions of ChatGPT-based feedback. Finally, the themes were refined and organized into a coherent narrative that directly addressed the research questions and captured the essence of the participants' reflective experiences.

RESEARCH FINDINGS AND DISCUSSION
Research Findings
Impact of ChatGPT-Based Reflective Feedback on Graduate EFL Students' Academic Writing

The question of how ChatGPT-based reflective feedback impacts the quality of academic writing among graduate students in EFL programs is compellingly addressed through a comparative analysis of pre- and post-intervention data. The results indicate a clear and statistically significant enhancement in various aspects of writing, underscoring the effectiveness of this innovative feedback mechanism. There are 8 aspects of paper writing skills for publication that are deeply researched for improvement with the feedback

mechanism with the use of ChatGPT-based feedback. These aspects include: grammar, vocabulary, use of topic sentence, transition, clarity and conciseness, coherence and flow, argumentation, and critical analysis. The results of writing samples from the students are presented in Table 1 below.

Table 1.
Student's Average Scores in Pre-Intervention and Post-Intervention Stages

Aspects in Writing	Pre-Intervention	Post-Intervention
Grammar	78	88
Vocabulary	79	86
Use of Topic Sentence	72	90
Coherence and Flow	66	87
Clarity and Conciseness	60	80
Transition Effectiveness	62	84
Argumentation	65	69
Critical Analysis	67	70

The results indicate notable improvements in several aspects of academic writing. Students showed substantial progress in grammar, vocabulary, organization (topic sentences), coherence, clarity, and use of transitions, with average score increases ranging from 8 to 21 points. These enhancements suggest that the intervention effectively helped students produce more accurate, fluent, and cohesive writing. However, gains in higher-order skills such as argumentation and critical analysis were more modest, with only slight increases in scores. This indicates that while students became more competent in surface- and mid-level writing features, they continue to face challenges in developing and supporting complex ideas critically.

The figure and the table below illustrate the positive impact of ChatGPT-based reflective feedback on various aspects of academic writing quality among graduate students in EFL programs. The significant improvements across multiple dimensions highlight the effectiveness of using AI tools in fostering writing skills.

Figure 2.
Student's Scores by Aspects of Writing Quality in Pre-Intervention and Post Intervention
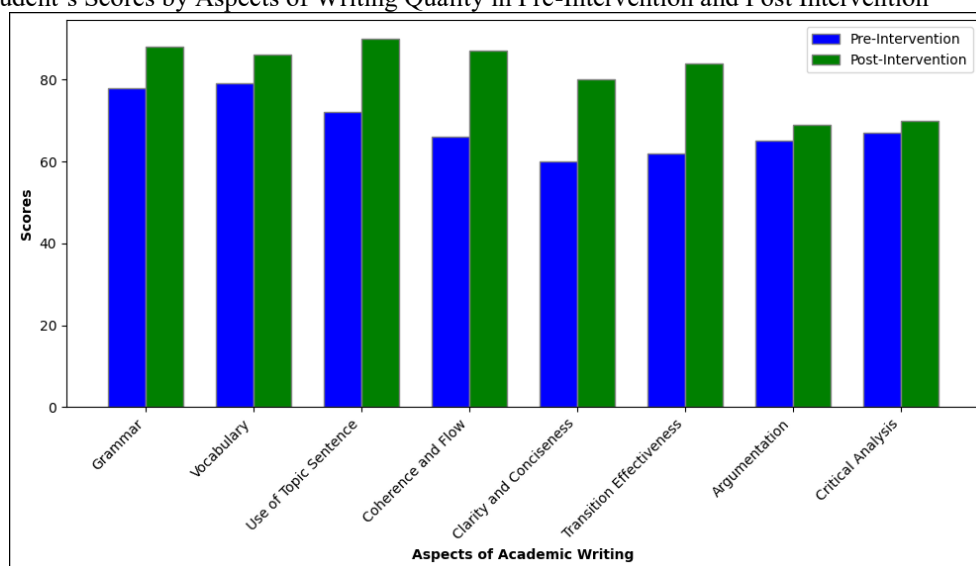
The survey and writing sample analysis indicate that ChatGPT-based reflective feedback had a significant impact on students' academic writing quality. Substantial improvements were observed in essay structure, grammar, vocabulary, coherence, and overall organization, showing that the tool effectively supported surface-level and structural

revisions. These gains demonstrate how AI feedback can foster more polished and cohesive writing outcomes. By contrast, progress in argumentation and critical analysis was relatively modest. This can be attributed to the complexity of higher-order skills, which require deeper reasoning, evaluation of evidence, and engagement with counterarguments. Students' reflective journals revealed limited prior training in these areas, and ChatGPT's feedback on reasoning often remained too general to address such challenges. As a result, while students became more competent in formal and organizational aspects, their analytical skills will likely require longer-term development and more explicit instruction. Overall, the findings highlight not only the effectiveness of ChatGPT in enhancing essential writing skills but also its potential to foster greater self-awareness and autonomy among learners. With continued practice and guided integration, such AI tools can play a valuable role in supporting sustainable improvements in EFL students' academic writing.

Promoting Learner Autonomy through ChatGPT Feedback in Publication Writing

To assess the impact of ChatGPT-based feedback on learner autonomy, a survey was conducted among the 20 graduate students who participated in the study. The survey included several statements to measure the degree of learner autonomy in publication-oriented writing. The statements covered aspects such as self-awareness, targeted strategy, resourcefulness, and encouragement, confidence, and motivation in the writing process.

Table 2.
Student's Key Statements in Learner Autonomy

Statements	Mean Score	Standard Deviation
1. I feel more aware of my writing strengths and weaknesses after using ChatGPT feedback.	4.3	0.5
2. I have developed targeted revision strategies based on the feedback I received.	4.1	0.6
3. I actively seek additional resources to improve my writing skills.	4.2	0.4
4. ChatGPT feedback encourages me to take ownership of my writing process.	4.5	0.3
5. I feel more confident in my ability to revise my work independently.	4.4	0.5
6. I am more motivated to engage in the writing process after receiving feedback.	4.6	0.4

The survey results provide valuable insights into the extent to which ChatGPT-based feedback promotes learner autonomy among graduate students in EFL programs. Overall, the data revealed consistently positive responses across key dimensions, with average scores ranging from 4.1 to 4.6. High ratings for motivation (M = 4.6) and encouragement of the writing process (M = 4.5) suggest that the feedback not only improved students' technical writing but also boosted their confidence and ownership of the learning process. Similarly, strong perceptions of self-awareness (M = 4.3) and resourcefulness (M = 4.2) indicate that students felt better able to identify their strengths and weaknesses, seek additional resources, and apply strategies for revision effectively.

These findings demonstrate that ChatGPT-based feedback was particularly effective in fostering surface- and process-level autonomy, empowering students to make more targeted revisions and engage more actively in their writing. However, while confidence and motivation were consistently high, variability was observed in students' ability to implement advanced revision strategies, reflecting the greater challenge of developing higher-order skills such as argumentation and critical analysis.

Students' Perceptions of ChatGPT Feedback on Writing Skills and Engagement

The study explored students' experiences with ChatGPT-based feedback in their academic writing development. Through interviews, five major themes emerged: (a) the

usefulness of ChatGPT feedback, (b) confusion about interpreting feedback, (c) ease of applying feedback, (d) improved writing confidence, and (e) suggestions for improvement.

The Usefulness of ChatGPT Feedback
Several students highlighted that ChatGPT provided structured and detailed feedback, which helped them identify weaknesses and improve their academic writing. They appreciated the specificity of the suggestions and the instant nature of the feedback.

(Student 3)	*"ChatGPT gave me clear explanations of grammar and structure issues, something I often struggled with before. Unlike peer feedback, which sometimes lacks depth, ChatGPT pointed out specific errors and offered alternatives."*
(Student 7)	*"It was particularly helpful in improving coherence. I could see how small changes in sentence structure or transition words made my ideas flow better."*
(Student 12)	*"The ability to receive feedback immediately after writing was a huge advantage. It helped me refine my work in real time rather than waiting for a review session."*

Confusion About Interpreting Feedback
While many students found ChatGPT feedback beneficial, some struggled to understand or interpret certain aspects, particularly when suggestions were too broad or lacked explanations.

(Student 5)	*"Sometimes, the feedback was too general. For example, it suggested making my argument stronger, but I wasn't sure how to do that exactly."*
(Student 9)	*"I noticed that ChatGPT sometimes flagged sentences as unclear even though they made sense to me. I had to cross-check with other sources to understand what was wrong."*
(Student 16)	*"There were moments when ChatGPT gave conflicting feedback, suggesting one thing in one part and contradicting it in another. It made me a bit confused about which advice to follow."*

Ease of Applying Feedback
Despite some confusion, many students found the feedback easy to implement, particularly when it provided direct examples or reworded suggestions.

(Student 1)	*"I liked how ChatGPT sometimes restructured my sentences instead of just saying they were unclear. This made it much easier to apply the feedback."*
(Student 6)	*"When the feedback was specific—like suggesting a better transition phrase or improving cohesion—it was very easy to apply. I used those strategies in my later drafts as well."*
(Student 14)	*"The step-by-step nature of the feedback made it manageable. Instead of overwhelming me with too many changes at once, I could tackle one issue at a time."*

Improved Writing Confidence
Many students reported feeling more confident in their writing after engaging with ChatGPT-based feedback. They found that the process encouraged self-correction and independence in the revision process.

(Student 4)	*"Before using ChatGPT, I lacked confidence in structuring my arguments. Now, I feel much more capable of refining my ideas and supporting them effectively."*
(Student 8)	*"It made me realize that I don't always need a human reviewer for basic revisions. I now feel confident making initial edits myself before seeking additional feedback."*
(Student 18)	*"The feedback reinforced my strengths while pointing out weaknesses. Instead of feeling discouraged, I felt empowered to improve my writing."*

Suggestions for Improvement
While students appreciated the benefits of ChatGPT-based feedback, they also suggested areas for enhancement, including more personalized feedback, interactive explanations, and better integration with academic writing guidelines.

(Student 2)   *"It would be great if ChatGPT could ask me questions about my writing goals before giving feedback, so the suggestions are more tailored to my needs."*

(Student 10)   *"If it could provide more explanations or reasoning behind its suggestions, like why a certain phrase is unclear, it would be even more helpful."*

(Student 19)   *"I wish ChatGPT could align its feedback more closely with academic writing standards, especially for journal publication. Sometimes, it's too generic."*

Overall, students perceived ChatGPT-based feedback as a valuable tool for enhancing their academic writing. While most found it helpful in improving clarity, coherence, and argumentation, some faced challenges in understanding and applying the feedback effectively. However, with refinements such as more personalized suggestions and clearer explanations, ChatGPT could further support learner autonomy and writing development in EFL contexts.

Discussions

The results of this study demonstrate that ChatGPT-based reflective feedback has a measurable impact on several aspects of academic writing and learner autonomy. These outcomes corroborate previous research on AI-assisted writing tools (Fan & Tan, 2024; Polakova & Ivenz, 2024; and Özdere, 2025), which emphasize the pivotal role of AI-driven feedback in advancing EFL students' writing development. Nonetheless, persistent challenges remain regarding argumentation, critical analysis, and the clarity of feedback.

The pre- and post-intervention scores (Table 1) clearly show substantial improvement in grammar (from 78 to 88), vocabulary (from 79 to 86), coherence and flow (from 66 to 87), and clarity and conciseness (from 60 to 80). These findings are in line with previous research on automated writing evaluation (AWE) tools, which highlight their effectiveness in enhancing linguistic accuracy and structural organization (Ferris, 2010; Ranalli, 2021). However, the relatively smaller gains in argumentation (65 to 69) and critical analysis (67 to 70) indicate that while ChatGPT is effective in supporting micro-level writing development, it is less successful in fostering higher-order cognitive and rhetorical skills. This limitation resonates with the work by Pieper et al. (2021) and Sabry et al., (2024), who found that AI-generated feedback often lacks deep analytical critique and focuses more on linguistic correctness than rhetorical sophistication. Further comparison with Luo and Hyland (2019) reveals that human feedback tends to emphasize rhetorical strategies, while AI feedback is primarily form-focused (Bouzar et al., 2025; and Profile, 2025). This raises concerns about the pedagogical implications of relying solely on AI feedback, as critical writing skills, such as developing original arguments and engaging in scholarly discourse, require more context-sensitive, human-mediated feedback (Hansen & Prilop, 2024).

The study also demonstrates the role of ChatGPT-based feedback in promoting learner autonomy. As shown in Table 2, students reported a heightened awareness of their writing strengths and weaknesses (Mean = 4.3, SD = 0.5) and expressed greater ownership over their revision process (Mean = 4.5, SD = 0.3). These results align with the framework of autonomous learning, which emphasizes the importance of self-directed revision and the use of self-regulated learning strategies. Students also showed increased confidence in independent revision (Mean = 4.4, SD = 0.5) and greater motivation to engage in the writing process (Mean = 4.6, SD = 0.4), echoing findings by Lee et al. (2022), who found that AI-assisted feedback reduces writing anxiety and fosters a growth mindset in students. Moreover, (Zhang, 2024) argues that AI feedback can serve as a bridge to independent learning, providing students with immediate support while gradually reducing reliance on external feedback.

However, over-reliance on AI feedback could present risks. Previous researches (Review & Integrated, 2025; Chen, 2024; and Ompoc & No, 2024) warn that students may prioritize AI suggestions over deep critical engagement with their work. If students accept AI-

generated revisions without questioning their validity, they may fail to develop the necessary critical reflection skills required for academic writing (Thanh & Tran, 2025; and Xu et al., 2024). This suggests that AI feedback should be complemented with human guidance, such as peer discussions and instructor-led reflective exercises, to ensure that students develop both autonomy and critical thinking skills (Khan, 2024).

Students' perceptions further illuminate both the strengths and weaknesses of ChatGPT-based feedback. The qualitative data suggest that students valued the immediacy, clarity, and structured guidance offered by the system, which enabled iterative revisions and more efficient engagement with the writing process. This observation is consistent with Banihashem et al., (2024), who reported that students appreciate the instant accessibility of AI feedback. At the same time, participants in this study voiced concerns about feedback that was at times contradictory or too general, an issue previously observed by Stevenson & Phakiti (2019). Challenges in supporting argumentation and critical analysis were also raised, reflecting the broader critique that AI feedback tends to remain at the surface level, emphasizing linguistic features rather than conceptual or rhetorical development (Hyland & Hyland, 2019). Students also suggested that AI systems should offer more personalized guidance, interactive explanations, and closer alignment with academic writing standards, recommendations that mirror the findings Shi et al. (2025) and Tian & Zhou (2023), who found that adaptive AI feedback, tailored to individual learning needs, leads to higher engagement and more meaningful writing improvements.

Taken together, these results position AI-assisted feedback as both a valuable and limited pedagogical tool. Consistent with Luo & Hyland (2019), this study found that AI feedback significantly improves linguistic accuracy and organization but does not fully address argumentation or critical analysis. This contrasts with peer and instructor feedback, which tends to emphasize higher-order writing skills and disciplinary conventions (Ferris, 2010). In terms of learner autonomy, the findings support Zhang (2023) who highlights the potential of AI to scaffold independent writing development. Hybrid feedback models, where AI is used alongside peer and instructor feedback, may provide the best balance between autonomy and critical engagement (Teng & Reynolds, 2022). Like Godwin-Jones (2021), this study found that students value AI's immediacy but sometimes struggle with unclear or contradictory feedback. Future AI systems should integrate explanatory scaffolding, helping students understand why certain revisions are recommended (Tian & Zhou, 2023).

From a pedagogical standpoint, these findings suggest several important directions. Integrating AI with human-mediated feedback offers a more balanced approach, combining the efficiency of instant AI-generated corrections with the depth of human insight into logic, coherence, and rhetorical structure. Providing students with training on how to interpret and critically apply AI feedback is also essential to prevent passive reliance and to cultivate reflective engagement. Furthermore, advancing AI systems toward greater customization, where learners can adjust the type, depth, and focus of feedback, would allow for more targeted and meaningful support. Importantly, these improvement extend beyond academic coursework to publication readiness. Students who develop critical awareness and self-regulated strategies through ChatGPT-based feedback are more capable of revising their manuscript independently, aligning their writing with scholarly conventions and journals requirements. This suggests that ChatGPT feedback not only strengthens micro-level writing skills but also nurtures competencies essential for producing publishable academic texts in EFL contexts.

Ultimately, while ChatGPT-based reflective feedback holds promise for enhancing academic writing, fostering autonomy, and sustaining student engagement, its limitations in addressing higher-order writing skills underscore the need for hybrid feedback models. Incorporating AI feedback within structured academic writing courses and publication

mentoring programs may thus serve as a pathway for EFL learners to achieve both linguistics competence and publication readiness. Future research should therefore explore the integration of AI-assisted, instructor-led, and peer-mediated feedback to maximize learning outcomes in EFL academic writing.

CONCLUSION

This case study has demonstrated that ChatGPT-based reflective feedback plays a significant role in enhancing the academic writing quality of graduate students in EFL programs, particularly in the context of developing publication readiness. The findings indicate that students experienced notable improvements in grammar, vocabulary, coherence, and clarity, while argumentation and critical analysis showed more limited progress. Additionally, ChatGPT-based feedback fostered learner autonomy, as students reported increased self-awareness, confidence, and motivation throughout the writing process. However, some students faced challenges in interpreting AI-generated feedback, particularly in areas requiring higher-order reasoning and rhetorical sophistication essential for academic publication. These results align with existing research on AI-assisted writing tools, underscoring both the potential and constraints of integrating AI-driven feedback in academic writing development.

However, as a case study, this research has several limitations that should be considered. First, the study involved a relatively small sample size (N = 20), which limits the generalizability of the findings beyond this particular EFL context. Second, the study examined only AI-generated feedback, without direct comparison to human or peer feedback. Future research should therefore explore hybrid feedback models that integrate AI with instructor and peer feedback to assess their combined effects on writing quality and publication readiness. Moreover, longitudinal investigations are needed to determine how sustained engagement with AI-assisted feedback supports continuous writing improvement and eventual publication outcomes.

To further advance this research, future studies should focus on developing more adaptive and personalized AI feedback systems that provide context-sensitive guidance on argumentation, critical thinking, and scholarly writing conventions. It is also important to explore how EFL students utilize AI feedback across different academic genres, such as research articles, theses, and conference papers. Finally, incorporating explicit training on interpreting and critically applying AI feedback can empower students to engage reflectively and avoid over-reliance on automated suggestions. By refining AI-driven feedback mechanisms and embedding them within structured instructional frameworks, educators can better support EFL students in cultivating both linguistic accuracy and higher-order writing competencies required for academic publication.

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