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STUDENTS' PERCEPTION OF USING PAPERPAL AI AS AN AUTOMATED WRITING EVALUATION (AWE) TOOL ON WRITING GRAMMATICAL FEEDBACK

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Abstract

This study aims to explore university students' perceptions of using Paperpal AI as an Automated Writing Evaluation (AWE) tool in providing grammatical feedback during the academic writing process. Grounded in the Technology Acceptance Model and Self-Regulated Learning Theory, this research addresses the gap in understanding how students critically engage with AI-driven feedback in English as a Foreign Language (EFL) contexts. A qualitative case study design was employed, involving 30 EFL university students majoring in English Education who had prior experience using Paperpal AI. Data were gathered through questionnaires and in-depth interviews. Questionnaire responses were analyzed descriptively using percentage analysis, while interview data were examined through Thematic Content Analysis (TCA). Findings revealed that students perceived Paperpal AI as beneficial for improving grammatical accuracy, sentence clarity, and editing efficiency. They appreciated the tool's user-friendly interface and real-time feedback, particularly for grammar and transitions. However, concerns were raised regarding the general nature of suggestions, occasional contextual inaccuracy, and limited support for creativity. These insights suggest that while Paperpal AI enhances surface-level writing skills, it should be complemented with human feedback and critical reflection to support deeper writing development in academic settings.

Keywords: *Academic Writing, Automated Writing Evaluation, Grammatical Feedback, Paperpal AI, Student Experience*

INTRODUCTION

Academic writing is a fundamental skill for university students, particularly in English as a Foreign Language (EFL) settings. However, many students struggle with structuring ideas, maintaining coherence, and using appropriate vocabulary, which affects the clarity of their

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writing (Marzuki et al., 2023; Miranty & Widiati, 2021). These persistent difficulties highlight the importance of supportive tools and scaffolding strategies that can assist students throughout the writing process—particularly in achieving grammatical accuracy and sentence-level clarity.

In response to these challenges, the integration of Artificial Intelligence (AI) in academic writing has introduced automated tools that support students through real-time feedback and correction. Leveraging Natural Language Processing (NLP) and machine learning algorithms, AI-powered tools detect errors and provide revision suggestions that reduce dependence on traditional instructor feedback (Fitria, 2024; Wang, 2015). A prominent application of such technology is Automated Writing Evaluation (AWE), which has become increasingly popular for improving grammatical correctness and structural quality in student writing. Tools such as Grammarly, ProWritingAid, Wordtune, and Criterion® have been widely adopted in educational settings for their ability to assist with sentence-level revision (Aljuaid, 2024; Ariyanto et al., 2021; Dodigovic & Tovmasyan, 2021).

Students' interaction with Paperpal AI as an automated writing feedback tool can be understood through several theoretical lenses. From a sociocultural perspective, Vygotsky (1978) Zone of Proximal Development (ZPD) conceptualizes learning as a scaffolded process, where external support enables students to perform tasks beyond their current competence. In this context, Paperpal AI functions as a digital scaffold—providing real-time grammar feedback that students can internalize to improve their independent writing ability. However, consistent with ZPD principles, over-reliance on such scaffolding should be avoided to ensure learners develop autonomy over time. This perspective is strengthened by the Self-Regulated Learning (SRL) theory Zimmerman (2002), which emphasizes learners' ability to plan, monitor, and evaluate their own progress. Paperpal AI encourages this autonomy by allowing students to revise iteratively based on feedback, but critical reflection remains essential to prevent passive acceptance of automated suggestions. From a technological standpoint, the Technology Acceptance Model (TAM) proposed by Davis (1989) suggests that users' willingness to adopt new tools depends on perceived usefulness and ease of use. If students find Paperpal AI accessible and effective in correcting grammatical errors, they are more likely to integrate it into their writing practices—especially in EFL contexts where traditional instructor feedback may be limited or delayed.

In addition to providing technical corrections, automated writing tools like Paperpal AI play an important role in guiding students through the revision stage of the writing process (Flower & Hayes, 1981). By offering real-time feedback on grammar, clarity, and sentence structure, the tool helps students refine their drafts in ways that promote coherence and fluency. The immediate and contextual suggestions provided by the system resemble the support typically offered by expert instructors, allowing students to learn from modeled feedback while working independently (Collins et al., 2018). Furthermore, the ability of such tools to highlight connections between ideas and improve sentence flow contributes to the overall unity and readability of academic texts (Halliday & Hasan, 2014). These features position Paperpal AI not only as a corrective mechanism but also as a digital mentor that

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facilitates deeper engagement with language use and promotes more structured and autonomous writing habits.

A number of empirical studies support the practical and theoretical relevance of these frameworks. For example, Bensalem et al (2024) found that students frequently used AI tools like Grammarly, QuillBot, and Paperpal AI for convenience and accuracy, though concerns remained regarding loss of critical engagement. Al-Zahrani (2024) similarly reported that while AI tools enhanced performance and creativity, they risked diminishing original thought. Hye-Kyung & Han (2021) revealed that Korean EFL learners appreciated tools like Grammarly for grammar and vocabulary correction, but still preferred combining AI support with teacher feedback for deeper revision.

Other tools have also been evaluated, Ariyanto et al (2021) found Pro Writing Aid effective for grammar and mechanics but cautioned against students' dependence on automated correction. Fitria (2024) noted that while Wordtune supported clarity and style, students needed to critically evaluate its suggestions. Setiawan & Alkhowarizmi (2025) emphasized that Grammarly, QuillBot, and Ginger Software helped detect surface-level errors and improved motivation, but required careful use to avoid hampering critical thinking and independent development.

In line with these findings, Paperpal AI has emerged as a distinctive AWE platform. Developed by Cactus Communications and launched in 2020, it offers real-time grammar correction, language enhancement, academic phrase suggestions, and structural analysis. Its integration with Microsoft Word makes it accessible during the drafting and revision process (Kaleci & Türel, 2024; Khalifa & Albadawy, 2024). According to Quratulain et al (2025), non-native English speakers found Paperpal AI useful in improving sentence clarity and grammar, although Chen & Cui (2022) noted that tools like these require human interpretation to ensure contextually appropriate revisions. Usher (2025) argued that while AI- generated feedback may be more detailed than human feedback, it still lacks nuance and precision. Krajka & Olszak (2024) further warned that although Paperpal AI improves technical writing, it may miss higher-level academic tone and complexity.

Despite the growing popularity of AWE tools, scholars have voiced concerns about their limitations. Over-reliance on AI feedback may hinder the development of higher-order writing skills, such as critical thinking and creativity (Fitria, 2023). While tools like Grammarly and Criterion® are effective at improving grammar and fluency, they often fail to foster deep learning and independence (Dewi, 2022; Miranty & Widiati, 2021; Tanjung & Dewi, 2024). These insights point to the need for balanced use, where AI suggestions are critically evaluated and supplemented by human input.

Although previous research has examined the effectiveness of AWE tools in general, limited attention has been given to students' perceptions of a specific tool like Paperpal AI—particularly in terms of its grammatical feedback features. This lack of focused research is significant, especially in EFL settings where students may rely on tools like Paperpal but remain unaware of how it shapes their writing process and autonomy.

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This study aims to explore EFL university students' perceptions of Paperpal AI as a grammatical feedback tool within academic writing. By investigating how students interpret and engage with the feedback provided by Paperpal AI, the study contributes to a deeper understanding of how AI-driven tools affect student learning, revision strategies, and writing development. The findings are expected to inform educators, curriculum developers, and AI tool designers on best practices for integrating automated feedback while promoting independent and reflective writing skills.

METHOD

This study employed a qualitative case study approach to explore how university students perceive the use of Paperpal AI, particularly in relation to its function as a grammatical feedback tool in academic writing. A case study was selected as it is effective in investigating individual experiences in real-world educational contexts (Hyett et al., 2014). The approach allowed for a focused examination of learner engagement with Paperpal AI as a language support technology.

Participants consisted of 30 university students enrolled in the English Education program who had prior experience using Paperpal AI for academic writing tasks. They were selected through purposive sampling to ensure relevance and depth of insight. Selection criteria required participants to have used Paperpal AI at least three times, specifically for academic assignments, regardless of semester level. This ensured that participants had sufficient exposure to the tool and could meaningfully reflect on its strengths and limitations in providing grammar-related feedback.

Data collection involved two stages: a questionnaire and in-depth interviews. The questionnaire included 10 closed-ended items designed using a 5-point Likert scale (1–5): Strongly Agree (SA), Agree (A), Neutral (N), Disagree (D), and Strongly Disagree (SD). These items measured student perceptions across four major constructs, namely:

1) usefulness in improving writing quality,
2) clarity and accuracy of feedback,
3) efficiency and ease of use, and
4) perceived limitations.

The questionnaire was distributed via Google Forms, and responses were analyzed using percentage-based descriptive analysis to identify general perception trends. Based on the questionnaire outcomes, five students representing varied levels of satisfaction and experience were selected for semi-structured interviews, using purposive sampling to ensure diversity in viewpoints. The interviews focused on both advantages and drawbacks of using Paperpal AI and were constructed to expand upon the initial survey responses. All interviews were conducted with participants' consent, recorded, and transcribed for analysis.

Interview data were analyzed using Thematic Analysis following the structured steps by Braun & Clarke (2006):

1) Familiarization and initial coding – identifying meaningful segments from transcripts,

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2) Theme development – grouping codes into broader patterns,
3) Theme refinement and validation – reviewing, merging, or redefining themes until saturation.

To enhance the trustworthiness of findings, methodological triangulation was employed by integrating data from both questionnaires and interviews. This combined approach allowed for a more comprehensive and balanced understanding of students' perceptions of Paperpal AI in the context of EFL academic writing.

RESULTS AND DISCUSSION

This study aimed to explore students' perceptions of using Paperpal AI in providing grammatical feedback during the academic writing process. The data were collected from 30 students through a Likert-scale questionnaire and analyzed using percentage-based descriptive analysis and thematic content analysis. Thematic categories were derived from interview transcripts through a bottom-up coding process. After data familiarization and line-by-line coding, recurring patterns were grouped into eight major themes: grammar refinement, feedback clarity, writing coherence, editing efficiency, suggestion accuracy, generalization in feedback, idea development, and creativity constraints.

Correcting Grammar and Refining Language Precision

The most frequently reported benefit of Paperpal AI was its contribution to grammatical refinement and sentence-level accuracy. Powered by natural language processing, the tool detects grammatical errors, punctuation issues, and structural problems, allowing students to produce more polished and technically accurate academic texts. As shown in Figure 1, 50% of respondents agreed and 43% strongly agreed that Paperpal was effective in identifying grammar mistakes.

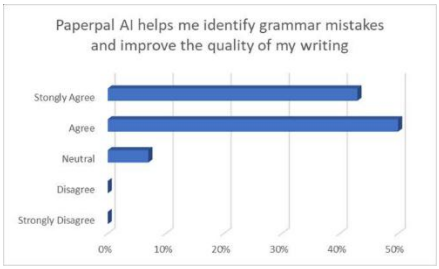

Figure 1. Questionnaire 4 Responses

This perception was reflected in students' comments:

> *"I feel more confident, not because the content of my writing is better, but because the grammar is more error-free." (P1)*

> *"I think Paperpal AI is very efficient for checking grammar and technical mistakes. But when it comes to developing ideas, I find it lacking, since the feedback focuses more on technical aspects rather than content." (P2)*

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"My grammar is usually full of errors, but after using Paperpal, I feel more confident because the writing is tidier and more formal." (P5)

These responses illustrate how students benefited from Paperpal's ability to deliver surface-level correction, especially for grammar and sentence clarity. While P1 and P5 emphasized improved fluency and syntactic precision, P2 added a critical reflection, noting the tool's limited support in developing content or ideas. This supports Burstein et al (2004), who described AWE systems as effective in detecting surface-level errors. Fitria (2024) similarly noted that Paperpal enhances mechanical accuracy in EFL academic writing, while Al-Zahrani (2024) emphasized student appreciation of AI tools for improving grammar and vocabulary, even if their effect on content depth remains limited.

Revising Academic Writing through Clear and Accessible Feedback

Beyond grammatical correction, students also valued Paperpal AI's clarity of feedback and its role in supporting structured revision. One of its standout features is a user-friendly interface that highlights errors with concise explanations, making it easier to apply changes quickly. As seen in Figure 2, 63% of respondents agreed and 27% strongly agreed that Paperpal AI's feedback was easy to understand and apply.

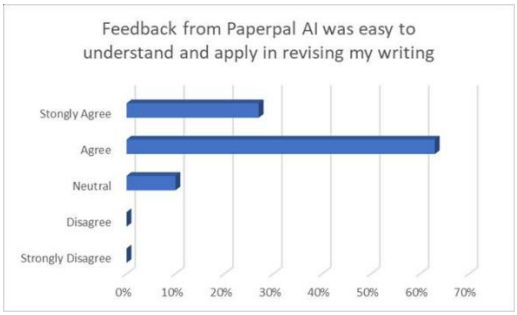

Figure 2. Questionnaire 3 Responses

Interview responses confirmed this pattern:

"For me, Paperpal AI is more like a proofreading assistant. It's very helpful when facing deadlines because it can quickly correct errors, but for content or ideas, I still need to consult with friends or lecturers." (P3)

"The suggestions from Paperpal are easy to understand, so revising becomes faster, especially for grammar and long sentences." (P1)

"In my opinion, the feedback is clear, but we still need to be careful not to follow everything blindly." (P4)

The responses from P3, P1, and P4 indicate that feedback clarity contributes significantly to revision efficiency. While students appreciated the tool's simplicity and speed, they also recognized the need to engage in critical evaluation rather than accept all suggestions passively. This reflects Davis (1989) Technology Acceptance Model, which identifies perceived usefulness and ease of use as central to technology adoption. Bensalem et al (2024) similarly

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found that EFL students were drawn to AI tools that offered immediate, understandable feedback. Al-Zahrani (2024) noted that the ability to revise efficiently was a major factor in students' continued use of AI tools in academic writing.

Although most participants praised the simplicity of Paperpal's suggestions, others voiced concern over the risk of mechanical revision habits. One student expressed, "The feedback is clear, but I try not to follow it blindly," suggesting that even straightforward feedback should be filtered through student agency and critical thinking. This tension between convenience and critical engagement was a recurring undercurrent throughout the interviews.

Enhancing Readability and Coherence in Academic Writing.

Another recurring theme was Paperpal AI's impact on textual flow, particularly in improving readability and coherence. The tool's real-time feedback on phrasing, sentence structure, and paragraph transitions helped students detect awkward constructions and maintain logical progression. According to Figure 3, 57% of students agreed and 30% strongly agreed that Paperpal improved the clarity and coherence of their texts. Additionally, Figure 4 shows that 53% agreed and 27% strongly agreed that it assisted with paragraph transitions.

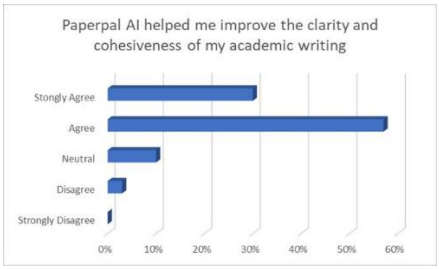

Figure 3. Questionnaire 1 Responses

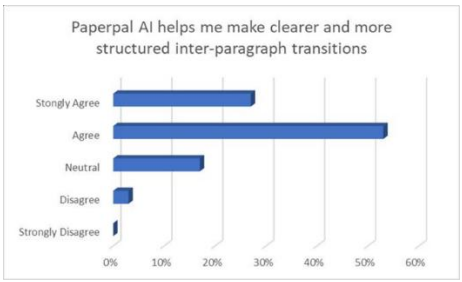

Figure 4. Questionnaire 6 Responses

Interview excerpts support this perception:

> *"In my opinion, the main benefit of Paperpal AI is its ability to provide quick feedback on grammar and structure. I feel more confident after using Paperpal, because before submitting my writing, I can ensure that the grammar is correct." (P1)*

> *"The most noticeable benefit is that Paperpal AI helps me improve coherence between paragraphs. For example, when writing the research findings section, Paperpal suggested how to clarify the connection between the data and the linking sentence." (P5)*

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"Sometimes I get confused connecting paragraphs, but Paperpal helps make the transitions clearer." (P3)

These reflections suggest that Paperpal AI facilitates structural coherence and helps students build more unified texts. P5's comment, for example, highlights how the tool supported both grammatical correctness and idea linking, indicating a multi-functionality that spans across themes. These findings are consistent with Halliday & Hasan (2014) theory of cohesion and coherence, which emphasizes logical connectedness in academic writing. Kaleci & Türel (2024) similarly reported that AI tools help EFL learners navigate challenges in maintaining paragraph unity and flow. However, Usher (2025) cautioned that while AI-generated feedback may appear comprehensive, it sometimes lacks contextual nuance—thus requiring human judgment for final revisions.

Despite the advantages reported, several limitations of Paperpal AI emerged from the data. Students noted that the tool's suggestions, while useful for grammar and structure, often lacked contextual sensitivity and failed to address deeper issues such as argument logic and content relevance. Some participants also reported that Paperpal occasionally misinterpreted complex sentence structures or recommended changes that altered their intended meaning. These concerns highlight the risk of over-relying on AI-generated feedback without engaging in critical reflection. As one participant noted, "we still need to be careful not to follow everything blindly," reinforcing the idea that AI support should be balanced with human judgment and academic mentorship.

While the study did not explicitly compare participants based on semester or academic standing, interview responses suggest that students with more writing experience tended to evaluate Paperpal's feedback more critically. For instance, senior students were more aware of contextual nuances and the limitations of AI in supporting idea development, whereas newer users were more focused on grammar correction and time-saving features.

Improving Time Efficiency in the Editing Process

In addition to supporting clarity and cohesion, Paperpal AI was also perceived to save students' time during grammar revision. Students frequently reported that Paperpal AI improved their time management during the editing process. Its real-time correction feature allowed students to revise more efficiently and reduce the number of revision cycles. As shown in Figure 5, 60% of students agreed and 27% strongly agreed that Paperpal helped them save time in editing.

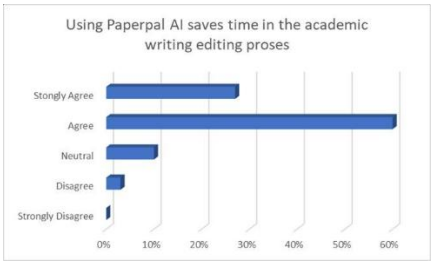

Figure 5. Questionnaire 5 Responses

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In line with this,

> *"I save more time during editing; usually I revise my writing three times, but with Paperpal, two times is enough before consulting my lecturer." (P2)*
>
> *"Paperpal's grammar and structure correction accelerated the revision process, particularly when deadlines were tight." (P3)*
>
> *"Before using Paperpal, I often revised my writing over and over. Now, it saves time because it immediately shows which parts are incorrect." (P1)*

These responses reflect how students perceived Paperpal as an effective tool for increasing productivity. This aligns with the Technology Acceptance Model (TAM) (Davis, 1989), in which perceived usefulness encourages consistent tool adoption. Students trusted the software to reduce mechanical workload and increase efficiency. From a Cognitive Apprenticeship lens (Collins et al., 2018), Paperpal AI acts as a digital mentor, modeling expert-like corrections and enabling independent application.

Evaluating the Accuracy of Suggestions

Beyond time-saving benefits, students also reflected on the quality of the suggestions. While many appreciated the accuracy of Paperpal's corrections, others emphasized the importance of interpretation. As seen in Figure 6, 57% agreed and 30% strongly agreed that the tool gave accurate suggestions.

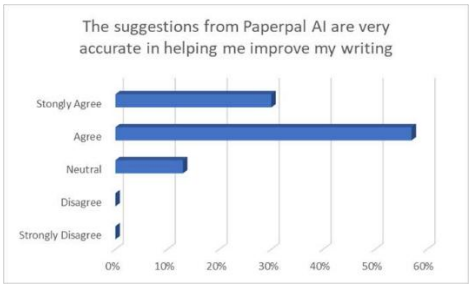

Figure 6. Questionnaire 9 Responses

Interviewees also reflected this.

> *"The most significant change after using Paperpal is that I understand better the importance of the flow between sentences. I used to ignore that." (P5)*
>
> *"Although the suggestions were helpful, I still needed to ensure that the meaning did not change from my original intention." (P3)*
>
> *"Some of Paperpal's suggestions are really accurate, but I still have to re-read them to make sure the meaning doesn't change from what I originally intended." (P2)*

These reflections demonstrate that while the tool provides syntactic accuracy, it occasionally overlooks semantic context. This supports Self-Regulated Learning Theory Zimmerman (2002), where students must evaluate feedback critically. Chen & Cui (2022) also noted that although AWE tools improve fluency, human interpretation is crucial to preserve

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intended meaning. The learners here position themselves as editors, not passive recipients—indicating a healthy balance between reliance and autonomy.

Generalizing Recommendations in Writing Evaluation

In contrast to the high ratings of accuracy, some students expressed concerns regarding the general nature of certain suggestions. Another emerging theme concerned the perceived overgeneralization of feedback. As shown in Figure 7, 27% agreed and 10% strongly agreed that the suggestions were too broad, while others provided examples of vague or irrelevant prompts.

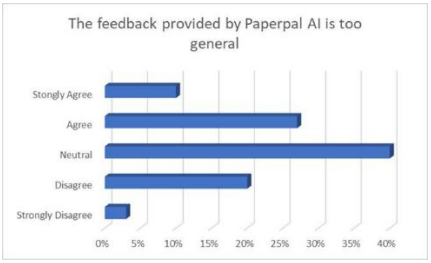

Figure 7. Questionnaire 10 Responses

Similarly, the students comment that,

> *"Paperpal AI helps in breaking down overly long sentences, but sometimes the suggestions change the intended meaning." (P4)*
>
> *"I think the feature that needs improvement is the ability to analyze the logic of arguments, not just grammar and transitions." (P5)*
>
> *"I sometimes feel the suggestions from Paperpal are too general. For example, it just tells me to replace a word, even though the sentence context is quite specific." (P1)*

These student voices underscore a key limitation: the AI's inability to capture discipline-specific nuance. This aligns with Cohesion and Coherence Theory (Halliday & Hasan, 2014), which stresses the importance of logical and contextual relationships. Tools like Paperpal, while effective in structure, may fall short in semantic precision. Krajka & Olszak (2024) emphasized the same issue—feedback without depth risks superficial editing and overlooks deeper argumentative development.

Organizing Ideas and Developing Content

Shifting from sentence-level issues to higher-order concerns, several respondents highlighted Paperpal's role in organizing content and ideas. Beyond grammar, a few students shared that Paperpal AI supported them in structuring content and developing arguments more clearly. Paperpal AI also supports idea development by analyzing the logical flow and structure of sentences within paragraphs. It suggests transitions and content reordering to help students build a more coherent and persuasive argument, especially in sections such as background, literature review, or discussion. As indicated in Figure 8 and Figure 9, 60% and 57% of

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respondents respectively agreed that the tool assisted in idea development and improving structural clarity.

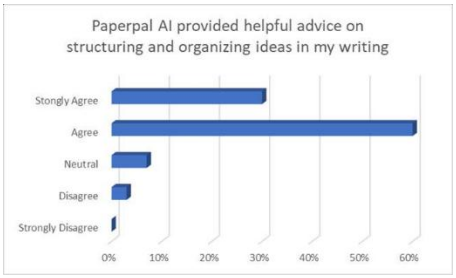

Figure 8. Questionnaire 2 Responses

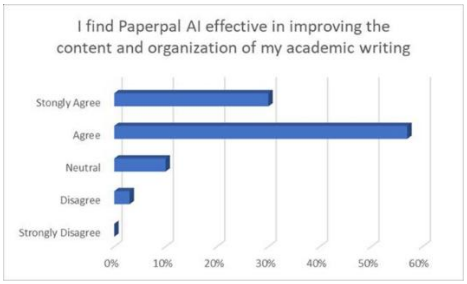

Figure 9. Questionnaire 7 Responses

This was confirmed by the interview findings,

> *"When organizing ideas, Paperpal AI usually suggests smoother transitions between sentences. For example, when I was writing the background of my thesis, there was a sentence with a broken logic flow — Paperpal suggested a more suitable transition." (P1)*
>
> *"When it comes to structure, Paperpal helps in arranging sentences, especially in argumentative paragraphs. But sometimes the suggestions are too general and not always specific to my topic." (P2)*
>
> *"I find it easier to organize the framework of ideas after receiving suggestions from Paperpal, although I still need to adjust them to suit my topic." (P4)*

These reflections align with Writing Process Theory Flower & Hayes (1981), where revision is essential to enhance idea development. They also demonstrate how Paperpal functions within the learner's Zone of Proximal Development (ZPD) (Vygotsky, 1978), offering scaffolded transitions and structure that guide but don't fully replace student reasoning. However, critical users like P2 highlight the need for flexibility—students still adjust suggestions to match personal and academic intent. AI-assisted writing tools can facilitate the systematic development of ideas, particularly in structuring literature reviews and organizing research writing — a role that the students recognized in their experience with Paperpal AI. In addition, Giglio & Costa (2023) emphasized that AI-powered tools enhance the clarity and structure of academic writing among non-native English users, supporting students in sequencing their arguments and improving logical flow.

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Experiencing Limited Creativity Support in Academic Writing

Despite its strengths in technical correction, Paperpal AI offers limited support in enhancing creativity. Its suggestions tend to follow formulaic academic structures, which may restrict students' personal writing styles and innovative expressions. Responses on Paperpal AI's role in fostering creativity were mixed. As shown in Figure 10, 10% of students strongly disagreed and 27% disagreed with the statement that Paperpal AI enhanced their creativity, totaling 37% of negative responses. Meanwhile, 23% agreed and 7% strongly agreed, totaling 30% of positive responses.

Since the percentage of students who disagreed (37%) was higher than those who agreed (30%), this finding supports the theme that Paperpal AI has a limited role in fostering creativity. The calculation process clearly shows that more students perceived Paperpal AI as offering limited support for enhancing creative aspects in academic writing.

Additionally, it is important to note that 33% of students selected a neutral response regarding the impact of Paperpal AI on creativity. This relatively high percentage suggests that some students might have had mixed feelings or were uncertain about whether Paperpal AI significantly influenced their creative process. This ambiguity indicates the need for a more nuanced understanding of how automated feedback tools affect higher-order thinking skills in academic writing.

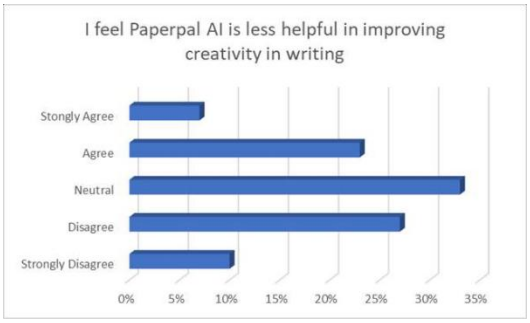

Figure 10. Questionnaire 8 Responses

This was echoed by the interviewees,

> *"I feel that Paperpal AI makes me less free when writing. If I follow the suggestions too often, my writing style becomes stiff and unnatural." (P4)*

> *"I hope that future features offer more contextual suggestions, not just about grammar or transitions, but also about argument structure." (P3)*

> *"Sometimes I feel that following Paperpal's suggestions too much makes my writing sound stiff. So now, I selectively choose which suggestions to apply." (P2)*

These comments reveal tension between standardization and self-expression. While the tool supports mechanical clarity, it may suppress stylistic freedom—a concern also voiced by Hye-Kyung & Han (2021). From the lens of Self-Regulated Learning Theory, students like P4 actively resist total dependence, exercising selective engagement with the tool. This highlights

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a need for balance between automated guidance and human creativity in academic composition. These concerns align with Zimmerman (2002) Self-Regulated Learning Theory, which emphasizes the importance of active and independent learning. Likewise, Al-Zahrani (2024) observed that while AI-based writing tools help improve language accuracy and structure, they may also lead students to depend too much on automated feedback, reducing their opportunities for critical reflection and original expression. Similarly, Hye-Kyung & Han (2021) found that while students benefit from AI tools in terms of grammar correction and idea generation, excessive reliance on such tools may reduce their ability to think critically and express their own voice effectively in writing.

Across all themes, students viewed Paperpal AI as a powerful assistant for grammar correction, sentence structuring, and time efficiency. However, recurring concerns emerged about generalized feedback, reduced creative control, and the importance of human judgment. These mixed experiences show that while AWE tools can scaffold writing processes, their limitations must be acknowledged in EFL contexts. The following theoretical frameworks help situate these findings in broader pedagogical perspectives.

The findings of this study align with the Cohesion and Coherence Theory by Halliday & Hasan (2014) particularly in how grammatical accuracy contributes to cohesive and meaningful texts. Students' experiences with Paperpal AI, especially in correcting subject-verb agreement, verb tense, and punctuation, reflect how the tool supports the development of grammatically cohesive writing. This reinforces the theory's emphasis on the role of grammar in achieving textual unity and consistency, particularly among EFL learners who often struggle with sentence-level cohesion.

The results also support the Writing Process Theory proposed by Flower & Hayes (1981) which frames writing as a recursive process involving planning, drafting, and revising. Paperpal AI's real-time feedback facilitates the revision phase by helping students identify and correct grammar mistakes as they refine their drafts. Participants in this study reported that the tool improved their confidence and efficiency when revising, especially in editing grammar for clarity and correctness. These findings suggest that Paperpal AI functions as a revision aid aligned with the cognitive processes described in the theory.

Moreover, the Technology Acceptance Model (TAM) by Davis (1989) provides a useful lens for interpreting the positive perceptions reported by students. TAM emphasizes that users' acceptance of technology is influenced by its perceived usefulness and ease of use. Most participants in this study described Paperpal AI as intuitive and beneficial in improving grammatical accuracy. These perceptions encouraged students to integrate the tool into their writing process, highlighting that its functionality and accessibility contribute to user acceptance—consistent with TAM's core principles.

CONCLUSION

This study explored EFL university students' perceptions of using Paperpal AI as an Automated Writing Evaluation (AWE) tool for grammatical feedback in academic writing. The findings indicated that the majority of students viewed the tool as beneficial for identifying grammatical

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errors, enhancing sentence-level precision, and providing accessible, real-time feedback that streamlined the revision process. For instance, over 85% of participants agreed that Paperpal AI improved their editing efficiency, particularly under tight deadlines. Many students also reported increased confidence in their grammar accuracy after using the tool. Despite these positive impressions, several students raised critical concerns. Some questioned the contextual appropriateness of the feedback and noted that the tool's suggestions were occasionally overly general or formulaic. Others felt that Paperpal's mechanical corrections risked limiting their stylistic freedom and creativity. These insights suggest that while Paperpal AI is effective as a grammar-support tool, it cannot fully replace human judgment or foster higher-order thinking without user reflection and instructor guidance.

These findings reinforce the theoretical underpinnings of this study. The recursive nature of revision emphasized in Writing Process Theory Flower & Hayes (1981), was evident in students' repeated use of the tool to refine drafts. Similarly, the high rate of perceived usefulness and ease of use aligns with the Technology Acceptance Model (Davis, 1989), which explains the tool's integration into students' writing routines. At the same time, the emphasis on critical engagement echoes the principles of Self-Regulated Learning Theory (Zimmerman, 2002), where learners maintain agency over automated suggestions.

This study has certain limitations. The sample consisted of 30 English Education majors from a single university, which may limit the generalizability of the findings. Participants already had prior experience using Paperpal AI, and their relatively advanced academic writing exposure may have shaped their perceptions differently than beginner-level writers or those in non-language majors. Furthermore, this study focused solely on perceived usefulness rather than objective improvements in writing outcomes.

Future research should investigate the measurable impact of AWE tools like Paperpal on students' writing development across disciplines and proficiency levels. Studies could also examine how instructor-led integration of such tools influences students' ability to critically evaluate feedback. In addition, comparative research across fields such as engineering, social sciences, or humanities could provide insight into whether discipline-specific writing conventions affect the perceived accuracy and utility of AI-generated suggestions. Ultimately, this study affirms the valuable role of Paperpal AI in advancing grammatical accuracy, streamlining revision workflows, and boosting learner confidence. At the same time, it underscores the irreplaceable value of human agency, reflective thinking, and pedagogical support in cultivating comprehensive academic writing skills.

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