



Grammarly As a Digital Learning Tool: Supporting Self-Directed Learning in Academic Writing at Universitas Muhammadiyah Kalimantan Timur

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Abstract

Academic writing is a fundamental skill in higher education, especially for students learning English as a Foreign Language (EFL), who often face challenges in organizing ideas and applying accurate grammar. The integration of artificial intelligence (AI) tools like Grammarly has opened new opportunities for students to improve writing performance independently. This study investigates students' perceptions of Grammarly and examines its role in supporting Self-Directed Learning (SDL), which includes self-management, motivation, and self-monitoring. Employing a quantitative descriptive method, data were collected through a structured questionnaire involving 50 second-semester students enrolled in the Academic Writing course at Universitas Muhammadiyah Kalimantan Timur. The results revealed high average scores in both Grammarly usage (need and practicality) and all three dimensions of SDL. Furthermore, a strong positive correlation ($r = 0.869$, $p < 0.000$) was found between Grammarly use and SDL levels. This indicates that students who positively perceive Grammarly are more likely to develop SDL behaviors in academic writing. The study concludes that Grammarly serves not only as a technical writing aid but also as a reflective tool that supports learner autonomy. The originality of this research lies in its focus on linking Grammarly use with SDL in the specific context of Indonesian EFL students an area that remains underexplored in previous studies. This provides valuable insights into how digital writing tools can foster independent learning in academic contexts.

Keywords: Academic writing; Digital learning tools; EFL learners; Grammarly; Self-directed learning

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1. Introduction

Writing is a crucial academic skill that allows students to articulate their ideas, structure their arguments, and communicate knowledge effectively. This skill is particularly important in higher education, where both students and academics depend on it. As noted by (Aljoza & Almustafa, n.d.) one of the primary challenges in honing academic writing skills especially for those learning English as a Foreign Language (EFL) is the ability to produce texts that are well-organized, grammatically sound, and coherent. As noted by Khalifa & Albadawy (2024),



academic writing is a key element of scholarly work, characterized by a structured presentation of ideas, evidence-based arguments, and logical reasoning. However, it often presents challenges, such as managing intricate ideas and ensuring clarity in communication.

In self-paced learning environments, where students study independently without continuous oversight, many encounter challenges in organizing their ideas, using correct grammar, and ensuring coherence in their academic writing (Al-Adwan et al., 2022). Consequently, these students often seek alternative methods to enhance their writing skills. Recent technological advancements have facilitated the integration of AI-based tools into education, offering valuable support to help improve writing abilities (Wayne Holmes et al., 2023). Alhazmi & Muftah (2025) found that over 75% of college students who utilized these AI writing aids reported a boost in their writing confidence, largely thanks to the immediate feedback provided by these tools.

AI-powered tools such as Grammarly offer instant feedback on grammar, sentence structure, and vocabulary, enabling students to revise and enhance their writing more effectively. Additionally, Grammarly suggests ways to paraphrase and improve clarity, making it an excellent fit for a self-directed learning approach (Fahmi & Cahyono, 2021). Dînceş & Saygi (2024) indicates that students who utilized Grammarly saw an average improvement of 20% in their writing performance compared to those who did not use the AI tool.

In addition to grammar and organization, academic writing poses broader challenges that are often underestimated. EFL students frequently struggle with constructing logical arguments, maintaining coherence across paragraphs, and demonstrating critical thinking skills in their writing (Q. Wang & George E. Newell, 2025). According to (M. Wang, 2025), even postgraduate students show limited ability in applying academic writing conventions effectively, which hampers their participation in international academic discourse (Nhi & Phuong, 2025). These challenges underscore the need to address not just surface-level issues like grammar, but also the deeper cognitive and rhetorical dimensions of writing.



Furthermore, while Grammarly is a widely used AI writing assistant, it is not the only digital tool available to support EFL learners. Other platforms such as QuillBot, ChatGPT, and Hemingway Editor also offer grammar checking, style suggestions, and readability analysis. Each of these tools has its strengths and limitations. For example, QuillBot offers more detailed feedback on style and structure, while Grammarly is more accessible and user-friendly. Failing to acknowledge this broader digital landscape may limit the scope of the study and lead to an overestimation of Grammarly's role as the sole writing solution (Xu & Jumaat, 2024; Tseng & Lin, 2024; Hongxia, 2025).

Moreover, it is important to consider the potential drawbacks of Grammarly. While it provides real-time corrective feedback, some researchers caution that such tools may foster overreliance and reduce students' engagement with the revision process at a deeper level. (Nhi & Phuong, 2025) found that students appreciate Grammarly's speed, but also report that it often lacks the nuanced, in-depth feedback that peer review or instructor feedback can provide. This may result in an emphasis on surface-level corrections (e.g., grammar and word choice), rather than encouraging students to improve their ability to self-edit and revise for content and coherence. Thus, evaluating students' perceptions of Grammarly should also account for its potential to both aid and limit the development of essential writing competencies (Calma et al., 2022; Qub'a et al., 2024).

While there are numerous benefits to using AI tools like Grammarly, some studies have highlighted potential concerns about students becoming overly reliant on these resources. It's possible that some students depend entirely on Grammarly's suggestions, without fully grasping or critically engaging with the corrections it offers. This leads to several important questions: How frequently do college students use Grammarly in their academic writing?, What are the students' perceptions of using Grammarly in academic writing?, What self-directed learning (SDL) aspects are perceived to support through the use of Grammarly in academic writing?, This study aims to explore how Grammarly contributes to promoting self-directed



learning (SDL) and enhancing academic writing skills among students at Muhammadiyah University of East Kalimantan

2. Method

2.1 Research Design and Approach

This study apply a quantitative approach aiming to describe students' perceptions regarding the use of Grammarly and how this tool supports aspects of self-directed learning (SDL) in the context of academic writing. The study focuses on collecting and analyzing quantitative data to obtain a general overview of student perception patterns and tendencies regarding the use of Grammarly in the writing learning process.

2.1.1 Research Location

The research was conducted at Universitas Muhammadiyah Kalimantan Timur, specifically within the English Education Study Program, during the even semester of the 2024/2025 academic year. This setting was selected for its relevance to digital writing tools in language education and the accessibility of qualified participants.

2.1.2 Population and Sampling

The population consisted of second-semester students enrolled in the Academic Writing course. Purposive sampling was employed to select students who have used it infrequently used Grammarly. A total of 50 students met the criteria and voluntarily participated in the study.

2.1.3 Research Instrument and Procedure

The research instrument in this study was adapted from the questionnaire developed by (Wardatin et al., 2022), which investigated Grammarly users' perceptions in relation to self-directed learning. This study employed a descriptive quantitative approach, using a structured questionnaire based solely on a 4-point Likert scale. The Likert scale consisted of four response options: (1) Strongly Disagree, (2) Disagree, (3) Agree, and (4) Strongly Agree. The even-numbered scale was deliberately chosen to eliminate neutral responses and to encourage respondents to express a clear stance on each statement.



The questionnaire consisted of two main sections. The first section collected demographic information such as gender, age, current academic semester, and experience in using Grammarly, including the version used and the duration of usage. The second section focused on closed-ended items designed to measure five key categories: (1) the perceived need for Grammarly, (2) the practicality of its use, and three core dimensions of self-directed learning based on (D. R. Garrison, 1997) model—namely, self-management, motivation, and self-monitoring. Each category was represented by a series of statements. For instance, the self-management dimension measured the learners' ability to manage their writing tasks and understand feedback independently. The motivation dimension assessed whether Grammarly increased the learners' enthusiasm and confidence in academic writing. The self-monitoring dimension evaluated how Grammarly encouraged students to reflect and correct their writing more consciously.

This instrument was designed to explore the perceptions of students at Universitas Muhammadiyah Kalimantan Timur regarding Grammarly as a digital learning tool that supports self-directed learning in academic writing. Through this structured questionnaire, the study aims to provide a comprehensive understanding of Grammarly's role in facilitating autonomous learning practices in the context of academic writing. While Pearson correlation analysis was applied to measure the relationship between Grammarly usage and SDL indicators.

2.1.4 Data Collection Techniques

Before distributing the questionnaires, the researchers conduct socialization to the target respondents, namely 2nd-semester students of the English Education Study Program at Muhammadiyah University of East Kalimantan who are taking Academic Writing courses and have experience using Grammarly. Socialization is conducted orally by providing instructions for filling out the questionnaire, explaining the purpose of the research, and estimating the time required to complete it (approximately 5–10 minutes). The link to the questionnaire is then distributed through communication media such as



class WhatsApp groups, online learning platforms, or email. Participation is voluntary, and no pressure is exerted on the respondents.

The questionnaire completion process is given a deadline of 1 weeks. During this period, the researchers carry out regular monitoring and reminders to ensure that the target number of respondents (30–40 individuals) is achieved. The data collected automatically through Google Form is then checked for completeness, ensuring that there are no duplicate or blank entries. After the initial validation, the data is downloaded in .xlsx or .csv format and then analyzed using SPSS software. Descriptive statistics such as frequency, percentage, mean, and standard deviation are used to interpret the respondents' perceptual tendencies and levels of self-directed learning.

The ethical aspect of the research is also a major concern during the data collection process. The personal identity of the respondents is kept confidential, and the researchers do not request sensitive information such as names or student identification numbers. The researchers also emphasize that all data obtained is used solely for academic purposes and is not published without prior consent. Thus, the data collection process is conducted systematically, ethically, and accountably to ensure the validity and reliability of the research findings.

2.1.5 Data Analysis

This study employs two main data analysis approaches: descriptive analysis and correlation analysis. The quantitative data from the questionnaire is analyzed using the Statistical Program for Social Science (SPSS) software.

Descriptive analysis aims to depict the characteristics of the data collected. This includes the frequency and percentage of responses for each questionnaire item, enabling the researcher to identify trends clearly. The mean value is calculated to determine the general tendency or dominant response for each indicator, while the standard deviation reveals the variation or spread of responses, reflecting the uniformity or diversity in students' perceptions.



In addition, correlation analysis is used to examine the relationship between the two main variables in the study: the level of Grammarly usage and the degree of students' self-directed learning (SDL). This technique allows the researcher to assess whether a significant relationship exists between these variables, the strength of the relationship, and its direction (positive or negative). The analysis includes the three core aspects of SDL. Through this analysis, the researcher evaluates to what extent the use of technology such as Grammarly contributes to students' development of independent learning behaviors in the context of academic writing.

3. Findings and Discussion

The descriptive analysis showed that students rated Grammarly highly in terms of both need ($M = 14.98$) and practicality ($M = 14.78$). This suggests strong student awareness of Grammarly's usefulness in providing grammar feedback and improving academic writing ease. In terms of SDL, the three dimensions all achieved high average scores: self-management ($M = 14.14$), motivation ($M = 14.49$), and self-monitoring ($M = 14.61$). These results indicate that Student perceptions of Grammarly are overwhelmingly positive, with high ratings for both its necessity and practicality in supporting academic writing. Students recognize Grammarly as a valuable tool for grammar feedback, writing ease, and fostering independent learning behaviors such as self-management, motivation, and self-monitoring. (Fitriana & Nurazni, 2022; Suryanto et al., 2024; Dewi, 2023).

The Pearson correlation test showed a very strong and significant relationship between Grammarly usage and SDL ($r = 0.869$, $p < 0.000$). This aligns with findings by (Robinson & Persky, 2020) and (Zinkevich & Ledeneva, 2021), who suggest that digital writing tools support learner autonomy by enabling students to revise their work independently and reflectively. Research shows a very strong and significant correlation between Grammarly usage and self-directed learning (SDL), supporting the idea that digital writing tools can meaningfully enhance learner autonomy and reflective writing practices (Wardatin et al., 2022; Yilong Su, 2024). While the results show a strong correlation between Grammarly usage



and all dimensions of SDL, it is noteworthy that the highest mean score was observed in self-monitoring ($M = 14.61$), suggesting that Grammarly may be most effective in helping students reflect on and evaluate their writing. However, this relationship could also be influenced by external factors not controlled for in this study, such as students' prior writing experience, language proficiency, or the quality of academic writing instruction they receive.

Grammarly, an AI-powered writing tool, is widely used to support student writing. Research consistently shows that Grammarly improves students' writing performance, fosters self-directed learning, and increases confidence (Abu Guba et al., 2024; Rababah & Talafha, 2024; Xuxa & Palomares, 2025). However, there are concerns about students becoming overly reliant on the tool, potentially limiting deeper learning and critical engagement with language rules.

The lack of subgroup analysis by language proficiency or academic background is a notable limitation in current research on Grammarly's impact. Existing studies primarily show overall improvements in student writing, but there is limited evidence on how these effects differ by skill level (Maulidina & Wibowo, 2022; Magadan & Tulud, 2025). More detailed analysis could help tailor Grammarly's use for diverse learners.

Table 3.1 Descriptive Statistics of Grammarly Usage

Aspect	Mean	Standard Deviation
The need for Grammarly	14.98	2.41
Practicality of use	14.78	2.36



Table 3.2 Descriptive Statistics of Self-Directed Learning (SDL)

Dimensions of SDL	Mean	Standard Deviation
Self-Management	14.14	2.63
Motivation	14.49	2.37
Self-Monitoring	14.61	2.29

4. Conclusion

Based on the results of the data analysis presented in Chapter IV, it can be concluded that the use of Grammarly in the academic writing process is perceived positively by students. They consider Grammarly to be important for providing clear and useful grammar feedback, as well as being easy to use in supporting academic tasks. This is evident from the relatively high average perception scores for the aspects of necessity and practicality of Grammarly.

Additionally, the level of Self-Directed Learning (SDL) among students who use Grammarly also shows positive results. The three dimensions of SDL—self-management, motivation, and self-monitoring received scores indicating that Grammarly encourages students to become more independent, confident, and reflective in the academic writing process. Furthermore, the results of the Pearson correlation test show a very strong and significant relationship between perceptions of Grammarly use and students' Self-Directed Learning levels, with a correlation value of $r = 0.869$ and significance $p < 0.000$. This means that the more positive students' views of Grammarly are, the higher their level of self-directed learning. Thus, Grammarly can be considered an effective digital tool in supporting students' self-directed learning (SDL) in the context of academic writing, both in terms of technical aspects and cognitive and reflective aspects.

However, the use of Grammarly is not without potential challenges. Some students may become overly reliant on automated suggestions without fully understanding the underlying grammar rules. This could reduce deeper cognitive engagement in the writing process. Therefore, educators are encouraged to guide students toward using Grammarly reflectively—



for example, by combining automated feedback with manual revision or facilitating peer discussions about the rationale behind suggested corrections. Future research is recommended to further explore how students' academic backgrounds or language proficiency levels influence their engagement with Grammarly. Qualitative approaches or controlled experiments could examine differences between passive Grammarly use and use that is combined with critical thinking strategies in writing.

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