



## The Influence of Grammarly on University Students' Writing Skills and Writing Confidence

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### Abstract

In academic writing, technology plays an essential component in the writing process and may be integrated into it, as demonstrated by the development of various writing tools, including Automated Writing Evaluation (AWE). This study aimed to find out the influence of using Grammarly as an AWE tool on university students' self-confidence and writing skills. At the undergraduate university level, students' writing abilities are particularly important in supporting various tasks, such as completing coursework, conducting research, and preparing final assignments as requirements for achieving a bachelor's degree. This pre-experimental research was conducted on 12 second semester students from the English Education Study Program at Universitas Muhammadiyah Palembang. The data were collected through a quantitative approach (pre-test and post-test) by using questionnaires and writing tests. The results were analyzed using SPSS by giving paired sample t-test and linear regression. The findings revealed significant improvements in both self-confidence and writing proficiency after the treatment, supported by paired-sample t-tests. Linear regression analysis showed a moderate positive correlation, with self-confidence accounting for 47.4% of the variance in writing performance. Despite the positive outcomes, limitations included a short study duration, limited access to laptops, and internet issues. The results suggest that Grammarly is effective in enhancing students' writing and confidence, encouraging students and lecturers to integrate AWE tools into learning while addressing technological and linguistic challenges. Future research should explore the long-term effects and broader applications of such tools.

**Keywords:** *Grammarly; Self-Confidence; Writing Skill*

### Introduction

Writing is a crucial ability in both academic and professional settings. At the undergraduate university level, students' writing abilities are particularly important in supporting various tasks, such as completing coursework, conducting research, and preparing final assignments as requirements for achieving a bachelor's degree. According to Saville-Troike (2012), students participating in academic writing courses need to utilize their linguistic competence, including phonology, morphology, discourse structures, syntax, and vocabulary to combine the words into phrases, clauses, or sentences through

writing practices. Furthermore, Fadda (2012) argued that EFL students frequently struggle with writing, especially academic writing, due to the gap between writing in the native language and writing in English.

In managing students' challenges with writing in the 21st century, the use of technology in learning is a potential solution. According to Kalyuga & Liu (2015), implementing technology in the process of learning can provide opportunities that would not be possible in the conventional learning method. In academic writing, technology plays an essential component in the writing process and may be integrated into it, as demonstrated by the development of various writing tools, including Automated Writing Evaluation (AWE). AWE is increasingly acknowledged as an effective tool in Computer Aided Language Learning (CALL) since it may enhance the students' drafting and rewriting processes of writing (Chen & Cheng, 2008; Cotos, 2014).

Multiple research studies discovered that Grammarly is easy to use and beneficial for writing essays (Hakiki, 2021; Ismawati & Muhsin, 2021; Agustin & Wulandari, 2022). Another research found out that Grammarly gives a huge impact on the students' writing quality, enhancing the students' writing correctness, attitude toward Computer Assisted Language Learning (CALL), and English writing learning process (Fadilah, 2018; M. Ghufro, 2019). Some studies further indicate that Grammarly may stimulate students to practice writing, promote students to be self-directed learners, and make them ready to improve their work by reducing errors in punctuation, grammar, sentence structure, spelling, vocabulary, and style (Yulianti, 2018; Ghufro & Rosyida, 2018). Furthermore, the research found that Grammarly aided and increased students' comprehension of grammatical norms as well as their writing confidence (Ventayen & Orlanda-Ventayen, 2018).

Therefore, the urgency of this study stems from the relevance of writing skills for academic success and professional development, as these skills enable students to effectively convey ideas, analyze information, and engage in scientific activities. For undergraduate students, mastering writing abilities is essential for completing assignments, theses, and research projects. However, relying entirely on conventional methods or teacher feedback is insufficient; technological advances in the digital era, such as nowadays, have to be utilized to help develop these skills.

Despite advances in information and communication technology, students at Universitas Muhammadiyah Palembang still rely on conventional writing methods, such as composing on paper, and have not fully utilized digital tools to support their learning process. This preference is related to their lack of confidence in writing, highlighting the need for tools that evaluate not only grammar but also mechanical correctness and stylistic elements. Such tools are essential for self-assessment and skill improvement, a challenge that the author, an alumnus of the institution, also faced during his undergraduate studies. The failure to incorporate digital tools such as Grammarly, prevents students from identifying and addressing their writing weaknesses and building confidence in academic writing. This study focuses on examining Grammarly's potential to improve students' confidence and competence in writing, exploring its effectiveness in addressing these challenges.

Research highlights the benefits of AWEs in improving writing skills, reducing teacher workload, and fostering student autonomy (Woodworth & Barkaoui, 2020; Wilson & Woscoe, 2020). Grammarly, a widely studied AWE tool, supports students by providing fast feedback, saving time, and enabling self-directed learning. The free version includes basic grammar checking, while the premium version includes advanced features such as tone adjustment and plagiarism detection. Studies, such as those conducted by Nova (2018) and Cavaleri & Dianati (2016), emphasize Grammarly's role in boosting student confidence, improving writing accuracy, and focusing on language fidelity for EFL learners.

Academic writing is an essential skill for students, serving as a means to generate, disseminate, and evaluate knowledge while developing critical thinking and discipline-specific skills. In Indonesia, academic writing instruction begins in the first semester of undergraduate studies, progressing from paragraph writing to essay writing and culminating in thesis writing, which combines research

methodology and scientific conventions. Despite its structured approach, EFL students' English writing is challenging due to limited opportunities for practice, linguistic difficulties, anxiety, and external pressures such as deadlines and teaching methods. Writing is a complex cognitive process influenced by self-confidence, motivation, and external support (Olasina, 2019; Listyani, 2020). Among the various forms of academic writing, essays are particularly important for developing critical thinking, as they encourage students to analyze, synthesize, and convey information effectively (Ishchenko & Chernysh, 2022). Essays require a clear organization with an introduction, body, and conclusion, allowing students to express unique perspectives and improve their writing skills. However, the demanding nature of writing highlights the need for consistent practice, effective teaching strategies, and tools to address students' challenges and improve their confidence and skills.

Self-confidence is the belief in one's ability to complete tasks and achieve goals, which includes emotions, thoughts, and resilience to constructive criticism (Markway et al., 2018). Self-confidence plays a significant role in academic performance, fostering positive attitudes, independence, and effective functioning (Ahmad, 2021; Corthorne & Wakelin, 2022). Confident individuals maintain an optimistic yet realistic perspective, trusting their abilities while accepting limitations (Tripathy & Srivastava, 2012). Research shows a strong relationship between self-confidence and academic achievement, as confident students tend to perform better academically (Aryana, 2010; Arshad et al., 2015). Additionally, verbal persuasion and social skills can enhance self-confidence and cognitive abilities, which in turn enhance performance (Alias & Hafir, 2009; Ratnasari & Andriansyah, 2014).

Several studies have explored the role of technology and psychological factors in improving writing skills and self-confidence among EFL students. Setyani et al. (2023) examined the use of Grammarly in enhancing thesis writing confidence among Indonesian students, highlighting its positive impact when used with premium accounts for advanced learners. Similarly, Asih (2022) investigated the correlation between Automated Writing Evaluation (AWE) tools and writing anxiety, concluding no significant relationship but emphasizing the need to focus on self-confidence instead. Ariyanto et al. (2021) explored perceptions of ProWritingAid (PWA), finding that it bolstered students' self-confidence by providing feedback, although some students engaged with the tool superficially. These studies underline the varying roles of AWE tools in supporting students' writing development across different contexts and levels.

In contrast, Sabarun et al. (2024) focused on the use of graphic organizers to boost self-confidence and writing accuracy in constructing argumentative essays. Their findings revealed significant improvements in writing performance linked to self-confidence and the type of intervention used, whether digital or paper-based. This aligns with the current study's focus on the relationship between self-confidence and writing skills but differs in methodology by employing the AWE tool Grammarly to aid first-year students transitioning to academic writing. Together, these studies emphasize the importance of fostering self-confidence through targeted interventions and technological tools to enhance students' writing abilities and overall academic performance.

Building on these insights, the present study extends the discussion by examining how Grammarly as an automated writing evaluation tool, impact students' writing skills and self-confidence. Specifically, this study targeted first-year students in the English Language Education study program at Muhammadiyah University of Palembang in the 2023/2024 academic year. Based on the research background discussed previously, the following research questions can be formulated:

What are the differences in students' writing skill and self-confidence before and after using Grammarly?

How does students' self-confidence relate to their writing skill after using Grammarly?

## ***Method***

This quantitative study employed a pre-experimental design with a single-group pre-test and post-test approach, focusing on second-semester English education students at Universitas Muhammadiyah Palembang. For four weeks, participants used the Grammarly to improve their writing skills. Data collection involved comparing pre-test and post-test results to measure changes in students' writing abilities and self-confidence. Additionally, a questionnaire and writing test gathered students' opinions on the tool's effectiveness. The research was conducted in June 2024, with six meetings consisting of a pre-test, four treatments, and a post-test.

The study involved 12 second-semester English education students, as they were in the early stages of their academic journey, where strong writing skills are critical for future success. The independent variable was the use of the AWE tool, which represented the intervention applied during the study. The dependent variables included students' self-confidence and their writing proficiency, which were expected to improve using the Grammarly.

Data were collected through a writing test and a questionnaire. In the writing test, students composed essays before and after the intervention, with pre-test essays serving as a baseline and post-test essays reflecting any improvements. Essays were assessed based on content, organization, grammar, vocabulary, and mechanics. The questionnaire, based on Agnihotri's Self-Confidence Inventory (ASCI), evaluated students' perceptions of the Grammarly and their self-confidence in writing. Pre-test and post-test surveys included 20 items, while the post-test added six exploratory questions.

Quantitative analysis was conducted using SPSS. The paired sample t-test compared pre-test and post-test scores to determine the intervention's effect on writing skills and self-confidence. Writing test scores were averaged from two independent raters using a standardized rubric. Additionally, linear regression was employed to explore the relationship between students' self-confidence and their writing skills, using post-test scores to assess the impact of Grammarly on both variables.

## ***Finding***

### **The Result of Questionnaire Response**

The pre-test showed varying self-confidence levels, with two students (S2 and S5) scoring high, six students (S1, S3, S4, S7, S8, and S11) scoring average, and four students (S6, S9, S10, and S12) scoring low. After receiving the treatment, the post-test revealed overall improvement in most students, with some showing significant gains, such as S7, who increased from 55 to 90, and S12, who improved from 30 to 80. However, some students like S4 and S5 showed no improvement or a slight decline in their self-confidence levels. In the post-test, one student (S7) scored very high, five students scored high, three scored average, and three scored low, reflecting the positive impact of the treatment on most students' self-confidence.

### **The Result of Writing Test**

The pre-test, which assessed students' writing through short essays, revealed varying levels of proficiency, with two students (S5 and S8) scoring in the Good category, seven students (S1, S2, S3, S6, S10, S11, and S12) in the Average category, and three students (S4, S7, and S9) in the Needs Work category. After receiving the treatment, the post-test results showed significant improvement, with most students achieving scores in the Good category (S1, S2, S3, S5, S7, S8, S10, S11, and S12), demonstrating strong writing proficiency. Students in the Average category, such as S4 and S6, showed satisfactory progress, while only one student (S9) remained in the Needs Work category, indicating the

need for further improvement. The overall data reveals a positive impact of the treatment, with most students moving to higher writing skill categories.

### The Difference Between Students' Self-Confidence Before and After Using Grammarly

A normality test was performed, with the Kolmogorov-Smirnov and Shapiro-Wilk tests showing that both the pre-test and post-test data were normally distributed ( $p > 0.05$ ), allowing for the use of parametric analysis. The paired sample t-test results revealed a significant improvement in students' self-confidence, with a mean difference of -14.167 between the pre-test (47.92) and post-test (62.08) scores ( $p = 0.021$ ). The correlation between the pre-test and post-test scores was moderate ( $r = 0.493$ ,  $p = 0.103$ ), but not statistically significant. Therefore, the null hypothesis is rejected, and the alternative hypothesis is accepted, indicating a significant difference in self-confidence levels before and after using Grammarly.

Table 1. The Result of Paired Sample Test of Self-Confidence

Paired Samples Test	Mean Difference	Std. Deviation	Std. Error Mean	95% Confidence Interval	t-value	df	Sig. (2-tailed)
PreTest - PostTest	-14.167	18.195	5.252	-25.727 to -2.606	-2.697	11	0.021

### The Difference Between Students' Writing Skill Before and After Using Grammarly

A normality test was conducted with the Kolmogorov-Smirnov test indicating that both the pre-test ( $p = 0.200$ ) and post-test ( $p = 0.200$ ) writing scores were normally distributed, allowing for the use of parametric analysis. The paired sample t-test results revealed a significant improvement in students' writing skills, with a mean difference of -15.583 between the pre-test (60.21) and post-test (75.79) scores ( $p = 0.000$ ). The correlation between the pre-test and post-test scores was moderate ( $r = 0.580$ ,  $p = 0.048$ ), which is statistically significant, suggesting a meaningful relationship. Therefore, the null hypothesis is rejected, and the alternative hypothesis is accepted, confirming a significant improvement in students' writing skills after using Grammarly.

Table 2. The Result of Paired Sample Test of Writing Skill

Paired Samples Test	Mean Difference	Std. Deviation	Std. Error Mean	95% Confidence Interval	t-value	df	Sig. (2-tailed)
PreTest - PostTest	-15.583	10.006	2.889	-21.941 to -9.226	-5.395	11	0.000

### The Relationship Between Students' Self-Confidence and Writing Skill After Using Grammarly

The analysis showed a significant positive relationship, with an R value of 0.688, indicating a moderate correlation between self-confidence and writing skills. The  $R^2$  value of 0.474 suggests that 47.4% of the variation in students' writing scores can be explained by their self-confidence levels, while the remaining 52.6% is influenced by other factors. These results highlight that higher self-confidence levels are associated with improved writing performance. Therefore, the null hypothesis is rejected, and the alternative hypothesis is accepted, confirming a significant relationship between self-confidence and writing skills.

Table 3. Linear Regression Analysis

Model Summary	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	F Change	df 1	df2	Sig. F Change
1	0.688	0.474	0.421	7.023	0.474	9.003		10	0.013

## Discussion

The findings of this study reveal significant improvements in students' self-confidence and writing skills after using the Automated Writing Evaluation (AWE) tool, specifically Grammarly. In the pre-test, students' self-confidence varied, with most falling within the average category. However, post-test results showed a noticeable increase in self-confidence for most students, confirming the positive impact of Grammarly on their confidence levels, as confirmed by the paired-sample t-test. Students reported that the tool helped them understand writing structure, improve vocabulary, and correct mistakes, which boosted their confidence. In contrast to Asih's (2022) study, which found no link between AWE and writing anxiety, this study highlights the effectiveness of Grammarly in increasing self-confidence in essay writing. Similarly, students' writing skills showed significant improvement after using the tool, with 75% achieving the Good category in the post-test. The paired-sample t-test also confirmed this improvement in writing proficiency. The regression analysis further showed a significant relationship between self-confidence and writing skills, indicating that higher self-confidence strongly predicts better writing performance.

## Conclusion

Based on the findings of this study, it can be demonstrated significant improvements in both areas, with paired sample t-test results showing a substantial increase in students' self-confidence and writing skills after using the tool. Linear regression analysis revealed a moderate positive correlation between self-confidence and writing performance, indicating that higher self-confidence was associated with better writing outcomes. Despite limitations such as a short implementation period, lack of access to technology for some students, and internet connectivity challenges, the study suggests that AWE tools like Grammarly play a significant role in enhancing students' writing skills and self-confidence.

The research underscores the importance of fostering students' self-confidence alongside skill development, advocating for the use of such tools in teaching and the need for institutions to address technological barriers to ensure equitable access. Based on the findings, it is recommended that students continue using AWE tools to improve their writing, while lecturers should incorporate these tools into their teaching practices and consider students' technology access challenges. Future research could explore the long-term effects of AWE tools, include a larger and more diverse sample, and investigate the role of technology access in implementing such tools effectively.

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