

The Effectiveness of QuillBot in Enhancing English Writing Skills

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ABSTRACT

This study aims to evaluate the effectiveness of QuillBot, an AI-based writing tool, in enhancing the English writing skills of EFL students at Universitas Muhammadiyah Mataram. Using a pretest-posttest design with a quantitative approach, the research involved a sample of 15 students who received training in utilizing QuillBot for academic writing tasks. Students' writing performance was assessed before and after a four-week intervention. The results demonstrated a significant improvement, with the average score increasing from 56.73 in the pretest to 75.67 in the posttest. These findings suggest that QuillBot effectively improves writing quality, particularly in grammar, vocabulary, and cohesion. However, the study did not compare QuillBot with other AI tools, nor did it explore its broader impact on motivation or critical thinking. Future research is recommended to conduct comparative studies and to investigate the long-term implications of AI integration in language learning.

Keywords: *QuillBot, English Writing skill, Language Learning technology, Writing improvement, EFL Learners***Article History:**

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INTRODUCTION

The ability to write in English is essential in both academic and professional contexts (Ilham, 2024; Ilham et al., 2025). In the academic field, these skills are required to compose scholarly works, while in the professional world, effective writing supports formal communication and the drafting of important documents (Ilham, 2023). However, English language learners face challenges such as difficulties organizing ideas, using proper grammar and vocabulary, and adjusting to the context of the audience. Other barriers include the lack of constructive feedback and supporting resources. Effective learning strategies and technological support are needed to overcome these obstacles to improve writing quality and competence (Ilham et al., 2020; Ilham, 2022).

English as a foreign language (EFL) learners, however often face challenges in developing their writing skills (Wahyuni, 2024). Difficulties in organizing ideas, using appropriate grammar and vocabulary, and adjusting to the context and style of writing are the main obstacles. In addition, limited exposure to authentic English, lack of constructive feedback, and limited supporting resources exacerbate these problems. These factors often negatively affect the quality and confidence of learners' writing (Ilham et al., 2020; Ilham, 2022).

The development of artificial intelligence (AI)-based technologies in education offers innovative solutions to address these challenges. AI in education provides adaptive and personalized learning experiences, allowing learners to get instant feedback and access learning materials that suit their individual needs (Sulaiman et al., 2024). In the context of language teaching, especially writing skills, AI technology opens up new opportunities by providing continuous support that is not limited by time and space (Nirwani & Priyanto, 2024).

In the realm of writing skills, various AI-based applications have been developed to help learners improve the quality of their writing (Fitria, 2022). Apps such as Grammarly and QuillBot, for example, offer grammar correction, vocabulary enrichment, and sentence

reordering services to improve the clarity and accuracy of writing (Nurmayanti & Suryadi, 2023). The support provided by these tools not only speeds up the revision process but also increases learners' linguistic awareness of good English structure and style (Tamilselvi et al., 2023).

QuillBot stands out among these AI-based tools for its excellent features such as multiple paraphrasing modes, real-time grammar correction, and vocabulary enrichment with synonym suggestions and alternative phrases (Mohammad et al., 2024). These features support the development of more sophisticated writing skills and help learners avoid plagiarism (Park et al., 2024) (Akmal & Fadhli, 2024). However, overuse of QuillBot has the potential to hinder the development of critical thinking and creativity in writing, so a balanced integration with traditional learning methods is needed (Yoandita & Yenni, 2024).

Some studies show that the use of QuillBot contributes positively to the improvement of EFL students' writing skills. Studies by Thohir et al. (2024) revealed a significant improvement in academic writing performance after the use of QuillBot, characterized by an increase in posttest scores. In addition to speeding up the writing process, QuillBot also helped expand students' vocabulary and improved understanding of academic writing conventions (Baron et al., 2023). However, some studies have also noted that over-reliance on this tool can reduce students' critical engagement in the writing process (Kurniati & Fithriani, 2022).

Despite QuillBot's great potential in supporting the learning of English writing, there is still a lack of large-scale empirical studies that examine its overall effectiveness. Most of the previous studies, such as the one conducted by McGinley et al. (2021), are still qualitative in nature with a limited number of samples, so the results cannot be widely generalized (Putra, 2023). Therefore, this study aims to evaluate the effectiveness of QuillBot through a quantitative approach based on empirical data, with a focus on improving grammar comprehension, vocabulary enrichment, overall writing quality, as well as its influence on student motivation and engagement in the writing process.

METHOD

This study aims to evaluate the effectiveness of using QuillBot in improving English writing skills. The main focus of this study was to identify significant changes in participants' writing ability after using QuillBot as a tool. This study used a pre-experimental design with a one-group pretest-posttest approach. This approach was chosen because the research participants were not randomly selected but were drawn from an existing group, such as a particular class or learning community. The respondents in this study were students of English study program at Universitas Muhammadiyah Mataram. The respondents were grouped into one group of 15 students. This group was given training on the use of QuillBot to improve their English writing skills.

The instrument used in this study was a writing test designed to measure respondents' writing ability before and after treatment. The participants' writing performance was assessed using an assessment rubric that included aspects of grammar, vocabulary, cohesion, coherence, and idea development. This research was conducted through several stages using one class as the research subject. The first stage was preparation, which included the preparation of research instruments as well as testing the validity and reliability of the instruments. The next stage was implementation, where all respondents took a pretest to measure their initial writing ability. After that, they were treated by using QuillBot in various writing tasks over a four-week period. After the treatment period ended, all respondents took the posttest to measure the change in writing ability. The final stage was the collection of pretest and posttest data for analysis. The data obtained were analyzed using descriptive and inferential statistics. Descriptive statistics were used to calculate mean scores and data distribution. For inferential analysis, paired-sample t-test was used to measure the difference between pretest and posttest scores.

FINDINGS AND DISCUSSION

The results of this study show that the use of QuillBot has a significant effect in improving English writing skills in EFL learners. The first stage of this study was the pretest

stage which was conducted on 15 students of Universitas Muhammadiyah Mataram. The students were asked to write a paragraph with the theme “The Importance of Learning English in Today's Globalized World” within 60 minutes. This pretest aims to measure students' writing ability before being given the treatment in the form of an effective writing learning strategy with the help of QuillBot. After the implementation of the treatment, the next stage was the implementation of the posttest. At this stage, students were asked to write a paragraph with a theme similar to the pretest to avoid bias or subjectivity in the answers, with the same time allocation, namely 60 minutes. The results of the pretest and posttest were then analyzed using paired-sample t-test to measure the significant difference between the two scores. The significance level used in this analysis was $p < 0.05$ to determine whether the improvement was statistically significant.

Table 1. Descriptives

Descriptives				
Result	Class		Statistic	Std. Error
pretest	Mean	Mean	56.73	2.203
		95% Confidence Interval for Mean	Lower Bound	52.01
			Upper Bound	61.46
		5% Trimmed Mean	56.98	
		Median	56.00	
		Variance	72.781	
		Std. Deviation	8.531	
		Minimum	39	
		Maximum	70	
		Range	31	
		Interquartile Range	12	
		Skewness	-.379	.580
		Kurtosis	-.173	1.121
posttest	Mean	Mean	75.67	1.793
		95% Confidence Interval for Mean	Lower Bound	71.82
			Upper Bound	79.51
		5% Trimmed Mean	75.63	
		Median	75.00	
		Variance	48.238	
		Std. Deviation	6.945	
		Minimum	65	
		Maximum	87	
		Range	22	
		Interquartile Range	9	
		Skewness	.149	.580
		Kurtosis	-.720	1.121

Descriptive test results showed that the mean score increased from 56.73 at the pretest to 75.67 at the posttest, with 95% confidence intervals of 52.01-61.46 and 71.82-79.51, respectively. The standard deviation also decreased from 8.531 at the pretest to 6.945 at the posttest, indicating a minor variation in values after the intervention. The median pretest score was 56, while the posttest increased to 75, with the range of scores decreasing from 31 to 22. The scores in both groups tended to be symmetrical, with a skewness of -0.379 for the pretest and 0.149 for the posttest.

Table 2. Test of Normality

Tests of Normality	
Kolmogorov-Smirnov ^a	Shapiro-Wilk

		Statistic	df	Sig.	Statistic	df	Sig.
RESULT	PRETES	.136	15	.200*	.967	15	.806
	POSTS	.110	15	.200*	.958	15	.649

a. Lilliefors Significance Correction

Based on table 2. The results of the normality test using Kolmogorov-Smirnov and Shapiro-Wilk show that the pretest and posttest data have a significance value greater than 0.05, both for the pretest (Kolmogorov-Smirnov: Sig. = 0.200; Shapiro-Wilk: Sig. = 0.806) and posttest (Kolmogorov-Smirnov: Sig. = 0.200; Shapiro-Wilk: Sig. = 0.649). These values indicate that the pretest and posttest data are normally distributed, as there is no statistical evidence to reject the null hypothesis (H0) stating that the data are normally distributed.

Table 3. Test of Homogeneity of Variance

Test of Homogeneity of Variance					
RESULT		Levene Statistic	df1	df2	Sig.
	Based on Mean	.577	1	28	.454
	Based on Median	.444	1	28	.511
	Based on the Median and with adjusted df	.444	1	26.590	.511
	Based on trimmed Mean	.636	1	28	.432

Based on table 3. The homogeneity test results using Levene's Test show that the variance between the pretest and posttest data groups is homogeneous. This is indicated by the significance values in the three testing methods: based on the Mean of 0.454, based on the Median of 0.511, and based on the Trimmed Mean of 0.432, all of which are greater than 0.05 ($p > 0.05$). These values indicate no significant difference in variance between the pretest and posttest data, so the assumption of homogeneity is met.

Table 4. Paired Samples Test

Paired Differences				95% Confidence Interval of the Difference		t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error	Lower	Upper			
Pair 1 PRETES - POSTES	-18.933	7.076	1.827	-22.852	-15.015	-10.363	14	.000

Based on table 4. Paired Sample t-test showed a significant difference between the pretest and posttest scores with $p = 0.000$ ($p < 0.05$). The mean score difference between the pretest and posttest was -18.933 with a 95% confidence interval (-22.852 to -15.015), which confirmed that the study participants experienced a significant improvement in writing ability after using QuillBot.

The results of this study support the claim that QuillBot is efficacious in improving English writing skills, particularly in the context of EFL learners. The findings align with previous studies that show the potential of AI-based tools in supporting language learning, although those studies used more qualitative approaches or involved smaller samples (McGinley et al., 2021). This study makes a new contribution with a quantitative approach based on empirical data, which shows the significant effectiveness of QuillBot in improving students' writing quality.

However, the findings also highlight some important aspects. Despite the significant improvement in writing ability, this study has not compared QuillBot with other AI-based tools. Thus, QuillBot's unique contribution in this context still requires further exploration (Putra, 2023). In addition, aspects of motivation, grammar comprehension, and vocabulary development have not been measured in depth, so additional research is needed to explore QuillBot's influence on these dimensions.

These results suggest that QuillBot can be a highly effective tool for improving writing skills in the context of EFL learners, especially in an environment that increasingly utilizes AI-

based technologies. This research closes a gap in the literature by providing strong quantitative evidence but also opens up opportunities for further studies on the long-term effects and potential optimization of using QuillBot in English language learning.

CONCLUSIONS

This study showed that the use of QuillBot significantly improved EFL students' writing skills, with the average score increasing from 56.73 in the pretest to 75.67 in the posttest. This result confirms the effectiveness of QuillBot in improving aspects of grammar, vocabulary, and coherence in English writing. This finding provides a practical contribution, suggesting that QuillBot can be integrated as a learning tool to improve students' writing skills in a technology-based learning environment. However, this study has limitations, including the absence of comparison with other artificial intelligence-based tools, as well as the unexplored effects of using QuillBot on learning motivation, grammar understanding, and the development of critical thinking skills and creativity. Therefore, further research is recommended to compare the effectiveness of QuillBot with other applications, such as Grammarly, examine the long-term impact on broader dimensions of learning, and develop artificial intelligence technology-based learning models.

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