

Implementing the Quizizz Application in Improving Students' Grammar Skills

Asmaul Husna Wali¹, Meristika Moatia²

^{1,2}STKIP Muhammadiyah Aceh Barat Daya, Aceh, Indonesia

husnawaly47@gmail.com¹

meristka.munanda@gmail.com²

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Abstract

This study, conducted at SMA Negeri 9 Aceh Barat Daya with 60 students, investigated the effectiveness of Quizizz, a digital gamification tool, in improving students' grammar skills. Employing a quasi-experimental design, the research involved two groups: an experimental group using Quizizz and a control group taught through conventional methods, each consisting of 30 students. Both pre-tests and post-tests were administered, and the data were analyzed using the Shapiro-Wilk test, Levene's test, and a paired-samples t-test. The normality and homogeneity tests confirmed that the data met the assumptions for parametric analysis. The paired-samples t-test revealed a greater increase in scores for the experimental group (9.83) compared to the control group (5.20), indicating a significant improvement in grammar mastery for both groups, with the experimental group outperforming the control group. The use of Quizizz offered several benefits, including increased student engagement, immediate feedback, and an interactive, competitive learning environment, all of which contributed to enhanced motivation and a deeper understanding of grammar concepts. Therefore, these results confirm that Quizizz can be an effective and engaging alternative to conventional grammar instruction, improving both learning outcomes and student enthusiasm.

Keywords : *Language learning; Quizizz; Grammar*

INTRODUCTION

One of the most important languages to learn and master is the English language. As the primary language in most countries, English is the language of global communication. As Metcalfe and Astle (2023) emphasize, English has become the dominant language in international communication. Considering the importance of English, it has become a compulsory subject in Indonesia's curriculum, taught as a foreign language in schools. The Ministry of Education and Culture mandates English as a compulsory subject from elementary to senior high school. The foundation of this policy lies in Law No. 20/2003 on the National Education System, and it is further supported by the Merdeka Curriculum introduced in 2021. The primary goal of teaching English in the curriculum is to enhance the quality of education and prepare students to communicate effectively in the English language.

Grammar is one of the primary components of the English language. It is the set of rules that explains how words are used together correctly in speaking and writing (Fitrawati & Safitri, 2021). Grammar is essential for students to master because it builds the foundation for constructing correct sentences. When students lack good grammar skills, expressing their ideas clearly can become challenging. By mastering grammar, students can speak and write more accurately and confidently by the rules of the language.

Grammar is an essential component of mastering English skills, yet it remains a challenge for many students (Metcalf & Astle, 2023). While grammar helps students form correct sentences and convey their ideas clearly, learning grammar rules is often perceived as complex and confusing. Many students struggle to fully understand grammar. A pre-observation conducted on April 26, 2025, at SMA Negeri 9 Aceh Barat Daya revealed that grammar remains a significant challenge for students. Although they had learned basic grammar rules, students still frequently made mistakes in both speaking and writing English. During lessons, several students appeared hesitant when constructing sentences orally, often pausing to think about the correct tense or sentence structure. In written tasks, common errors included incorrect subject-verb agreement, misuse of tenses, and omission of auxiliary verbs. The teacher also noted that while some students could recall grammar rules when prompted, they found it challenging to apply them spontaneously in real communication. These findings indicate that, despite classroom instruction, students still require additional practice and sufficient support to fully master grammar.

Based on the data, gamification has emerged as a transformative solution in education, including the implementation of Quizizz. A quiz is a short assessment or test designed to measure a person's knowledge, understanding, or progress in a particular subject or topic (Brown & Abeywickrama, 2019). Quizizz is widely used in educational settings to assess students' learning and help teachers identify areas that require improvement. It is an online learning platform that makes grammar practice more engaging and interactive. Quizizz enables teachers to create and deliver interactive quizzes in real-time or as homework assignments, incorporating gamification elements such as points, leaderboards, and timers to enhance student engagement and motivation (Zhao & Watterston, 2021). Through Quizizz, students can answer grammar questions in a game-like format, which helps sustain their motivation and participation in learning activities.

A study by Wulandari and Yuliani (2020) found that using Quizizz in grammar lessons increased student engagement and helped them understand grammar rules better through immediate feedback and repetition. Similarly, research by Anjarwati (2021) demonstrated that students who practised grammar through Quizizz performed better on grammar tests than those who used traditional methods, as the platform made learning more interactive and enjoyable. In addition, Yuliana and Putri (2021) reported that Quizizz helped students reduce grammar errors in writing tasks by providing continuous practice in a fun and competitive environment.

One advantage of implementing Quizizz in teaching grammar, as shown in previous studies, is that it increases student engagement and motivation through interactive and game-based learning, making grammar practice more enjoyable and effective (Wulandari & Yuliani, 2020; Anjarwati, 2021). Quizizz is not only a valuable tool for enhancing grammar skills but also an effective platform for fostering independent learning habits. Students

receive immediate feedback, which helps them quickly identify and correct their mistakes, leading to better understanding and retention of grammar rules. By allowing students to review material at their own pace and in an engaging manner, it supports both classroom learning and self-study. Furthermore, its competitive features, when used appropriately, can encourage healthy competition that motivates students to achieve better results. However, one disadvantage is that Quizizz requires stable internet access and digital devices, which can be a challenge in schools with limited technological infrastructure (Yuliana & Putri, 2021). Additionally, some students focus more on the game aspect than on the learning content itself, which can reduce the depth of their understanding if not properly guided by the teacher.

Previous studies by Wulandari & Yuliani (2020) and Anjarwati (2021) indicated that Quizizz can enhance student motivation, engagement, and enjoyment in learning grammar. However, these studies primarily relied on qualitative insights, providing limited empirical evidence of measurable improvements in grammar skills compared to conventional teaching methods. This study addresses this gap by examining the effectiveness of Quizizz in improving students' grammar performance under controlled experimental conditions. The research problem of this study is: Does the implementation of the Quizizz application significantly affect students' grammar skills compared to conventional teaching methods? In line with this, the analysis aims to determine whether the use of Quizizz produces a statistically significant improvement in students' grammar mastery. Should the results reveal a significant difference between the experimental and control groups, it would lend support to the hypothesis that Quizizz serves as an effective tool for enhancing grammar skills. The hypotheses are stated as follows:

Null Hypothesis (H_0): There is no significant difference in students' grammar skills between those taught using the Quizizz application and those taught using conventional methods.

Alternative Hypothesis (H_a): There is a significant difference in students' grammar skills between those taught using the Quizizz application and those taught using conventional methods.

METHOD

Participants / subject / population and sample

The participants in this study were 60 students from SMA Negeri 9 Aceh Barat Daya in the 2023/2024 academic year. Two classes were selected as the sample using a purposive sampling technique. Class IX A, consisting of 30 students, was assigned as the experimental group and received grammar instruction using Quizizz. Class IX B, comprising 30 students, served as the control group and was taught using conventional methods, including lectures, written exercises, and textbook-based activities. The sample size follows the recommendation of Sugiyono (2017), who states that a group size of 25–30 participants is adequate for ensuring the validity and reliability of statistical analysis in quasi-experimental research.

Data Collection

The study was conducted across five instructional sessions. In the first session, both the experimental and control groups completed a pretest to assess their initial mastery of

the Simple Present tense. The test instrument, adapted from Selly Kalima (2023), was carefully modified to ensure alignment with the curriculum and the specific learning context. The pretest consisted of 25 multiple-choice items, designed to assess students' grammar knowledge accurately. The second through fourth sessions were devoted to treatment implementation, employing identical learning materials but differentiated by instructional method. The experimental group received instruction through the Quizizz application, while the control group engaged in conventional teaching methods. In the fifth session, a posttest was administered to both groups to measure improvements in grammar proficiency. The posttest, similarly consisting of 25 multiple-choice items adapted from Selly Kalima (2023), enabled a rigorous comparison of learning outcomes between the two instructional approaches.

Data Analysis

The collected data were analyzed using IBM SPSS Statistics version 30. The Shapiro-Wilk test was applied to assess the normality of the data distribution, as it is recommended for small to medium sample sizes. Levene's test was performed to check the homogeneity of variances between groups, ensuring that parametric test assumptions were met. To determine the differences within each group before and after the intervention, a paired sample t-test was conducted. These statistical procedures enabled valid comparisons between the experimental and control groups, as well as an assessment of the effectiveness of Quizizz-based instruction in improving grammar skills.

FINDINGS

1. Normality Test

The normality test was conducted to determine whether the data in both research groups were normally distributed. This assessment employed both the Shapiro-Wilk tests using IBM SPSS Statistics version 30. Since each group consisted of 30 participants, the Shapiro-Wilk test was prioritized, as it is considered more reliable for small to medium-sized samples (Pallant, 2020; Ghazali, 2018). Normality was determined based on a significance threshold of 0.05; if the p-value exceeded this level, the data were deemed normally distributed and thus suitable for further parametric tests, such as t-tests.

Table 1. Results of Normality Test

Group	Test Type	Statistic	df	p
Control	Pre-test	.952	30	.186
	Post-test	.980	30	.816
Experiment	Pre-test	.979	30	.811
	Post-test	.980	30	.833
Significance	Pre-test	.950	30	.165
	Post-test	.946	30	.129

Based on Table 1, all Shapiro-Wilk significance values are greater than 0.05, indicating that the pretest and posttest data for both the control and experimental groups are normally distributed. Consequently, the assumptions required for parametric testing

have been fulfilled. The normal distribution of data ensures that the subsequent statistical analysis can be interpreted with greater accuracy and reliability.

Assessing the distribution of the data is important in experimental research to ensure that the results accurately reflect the actual conditions. With normality confirmed, the data are statistically appropriate for further analysis using parametric methods such as the homogeneity test and paired samples t-test. Thus, the reliability of the findings is well supported by the underlying assumptions being met.

2. Homogeneity Test

The homogeneity of variance test is a fundamental procedure used to ensure that the assumption of equal variances between groups is met before conducting further parametric analyses. In this study, Levene's test was applied to compare the variance in grammar test scores between the control and experimental groups. Levene's test is commonly used in educational and behavioural research because it is robust against violations of normality, making it suitable for real-world data (Ghasemi & Zahediasl, 2012). The decision rule states that if the significance value (Sig.) is greater than 0.05, the data are considered to have equal variance, indicating that both groups are statistically comparable in terms of score dispersion (Pallant, 2020).

Table 2. Results of Homogeneity Test

Group	Levene Statistic	df ₁	df ₂	Sig.	
Control	Based on the Mean	0.240	1	58	.626
	Based on Median	0.254	1	58	.616
	Based on Median (adjusted df)	0.254	1	57.999	.616
	Based on Trimmed Mean	0.232	1	58	.632
Experiment	Based on Mean	0.015	1	58	.903
	Based on Median	0.029	1	58	.866
	Based on Median (adjusted df)	0.029	1	57.605	.866
	Based on Trimmed Mean	0.016	1	58	.900

As presented in Table 2, both the control and experimental groups produced significant (Sig.) values well above the 0.05 threshold. This indicates that the variances in student scores between the two instructional methods are statistically homogeneous.

Homogeneity of variance is essential in experimental research, as it helps ensure that any observed differences in outcomes are more likely due to the treatment itself rather than uncontrolled variability in the data.

This finding further supports the fairness and comparability of the two groups at the beginning of the study. Since both groups started with a similar level of variability in their grammar performance, any differences in posttest results can reasonably be attributed to the instructional method applied, Quizizz or conventional teaching. The presence of homogeneity also enhances the credibility of the statistical analysis by confirming that the assumptions underlying the independent sample t-test and paired sample t-test have been appropriately met. Therefore, the homogeneity test not only supports the methodological soundness of the research design but also strengthens confidence in the validity of the study's findings and conclusions.

3. Paired Samples Test (Expanded Explanation)

The paired samples t-test is a statistical method used to compare two sets of related scores, typically pretest and posttest data from the same group of participants, to determine whether a statistically significant change has occurred following a treatment or intervention. In this study, the test was administered to both the control and experimental groups to evaluate changes in grammar achievement following the application of different teaching methods. As noted by Pallant (2020), the paired samples t-test is commonly used in within-subjects designs to assess changes over time in the same participants, making it particularly suitable for pretest and posttest comparisons in educational settings. Furthermore, the significance value (Sig. 2-tailed) of less than 0.05 indicates a statistically significant difference in the mean scores before and after the treatment, thereby confirming that the intervention had a measurable impact on students' learning outcomes.

Table 3. Results of Paired Samples Test (Expanded Explanation)

		Paired Differences					t	Df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Pretest Control - Posttest Control	-5.20000	1.64841	.30096	-5.81552	-4.58448	-17.278	29	.000
Pair 2	Pretest Eksperiment - Posttest Eksperiment	-9.83333	1.83985	.33591	-10.52035	-9.14632	-29.274	29	.000
Pair 3	Significance Control - Significance Experiment	-4.63333	2.49805	.45608	-5.56612	-3.70055	-10.159	29	.000

The paired samples t-test was conducted to compare students' grammar scores before and after the intervention in both the control and experimental groups, with a significance level of 0.05. For the control group, the results showed a mean difference of -

5.20 between pretest and posttest scores, $t(29) = -17.278$, $p < .001$, Cohen's $d = 3.15$. This indicates a statistically significant improvement in grammar scores, which may be attributed to conventional classroom instruction and natural learning progress over time, even without the gamified intervention.

In the experimental group, the mean difference between pretest and posttest scores was -9.83 , $t(29) = -29.274$, $p < .001$, Cohen's $d = 5.35$. This demonstrates a highly significant improvement in students' grammar mastery after receiving instruction through the Quizizz application, suggesting that the gamified learning environment had a strong positive effect on students' engagement and understanding.

Furthermore, the comparison of the magnitude of improvement between the two groups revealed a mean difference of -4.63 , $t(29) = -10.159$, $p < .001$, Cohen's $d = 1.85$. This finding confirms that the improvement experienced by the experimental group was significantly greater than that of the control group, providing clear evidence that Quizizz, as an instructional tool, was more effective than traditional methods in enhancing students' grammar skills. This outcome supports the alternative hypothesis (H_a) and rejects the null hypothesis (H_0), indicating that the use of Quizizz produced a significant effect on students' grammar achievement.

The results are consistent with theories of technology-enhanced learning that emphasize active participation, immediate feedback, and motivational elements as key factors in effective language acquisition. The competitive and interactive nature of Quizizz likely stimulated students' intrinsic motivation, encouraging more frequent practice and deeper cognitive processing of grammar rules.

Additionally, these findings align with previous research, which shows that gamified learning platforms enhance student engagement and achievement by making learning more enjoyable and interactive. The statistically significant differences suggest that integrating digital gamification tools, such as Quizizz, into the curriculum can be a valuable strategy for overcoming common challenges in mastering grammar, including student boredom and lack of motivation.

DISCUSSION

The results of this study indicated that both conventional and gamified learning approaches improved students' grammar skills. However, the experimental group using Quizizz demonstrated significantly greater improvement. The paired samples t-test revealed a mean difference of -9.83 for the experimental group, compared to -5.20 for the control group, with statistically significant results ($p < 0.001$). These findings confirm that gamified digital platforms can enhance grammar mastery more effectively than traditional instruction, providing empirical evidence that extends beyond previous studies, which primarily focused on qualitative insights.

These outcomes are consistent with prior research by Wulandari & Yuliani (2020) and Anjarwati (2021), who highlighted that Quizizz increases student motivation, engagement, and enjoyment in grammar learning. While earlier studies emphasized student perceptions, the present research strengthens these claims by demonstrating measurable improvements in grammar performance. The competitive and interactive features of Quizizz, including immediate feedback, scoring, and leaderboards, likely stimulated intrinsic motivation and

encouraged deeper cognitive engagement, fostering better comprehension and retention of grammar rules.

Importantly, the findings have clear pedagogical implications for Indonesian EFL classrooms. The study suggests that incorporating gamified learning platforms, such as Quizizz, can significantly enhance students' grammar mastery. By increasing motivation, engagement, and active participation, Quizizz provides immediate feedback and interactive learning experiences that support more effective understanding and retention of grammar rules. Teachers can leverage these gamified features to address common instructional challenges, such as boredom, lack of motivation, and difficulty mastering complex grammatical structures. Furthermore, integrating Quizizz encourages a more student-centered learning environment, fostering collaboration and healthy competition, which can improve not only grammar achievement but also learners' overall confidence and engagement in English.

This research also demonstrates that gamified learning platforms can be systematically integrated into existing curricula without replacing core teaching methods. The experimental group, exposed to Quizizz over multiple sessions, achieved significantly higher gains than the control group, which was taught via conventional instruction. This evidence confirms that gamified tools can supplement and enhance traditional teaching methods while producing measurable improvements in learning outcomes. Consequently, Quizizz and similar platforms offer a practical strategy for teachers aiming to create more effective, interactive, and engaging EFL classrooms in Indonesia.

Additionally, the study highlights broader theoretical implications for technology-enhanced language learning. The significant improvement observed in the experimental group aligns with theories of motivation and engagement, emphasizing the value of immediate feedback, active participation, and gamified elements in supporting cognitive and affective learning outcomes. These findings reinforce the idea that digital gamification is not merely a motivational tool but also an effective pedagogical strategy for improving students' grammar mastery.

In conclusion, this study provides robust evidence that Quizizz significantly improves students' grammar skills compared to conventional methods. Beyond enhancing motivation and engagement, the findings demonstrate practical strategies for implementing gamified learning in Indonesian EFL classrooms. By integrating Quizizz into grammar instruction, teachers can foster a more interactive, student-centered, and impactful learning experience, addressing both cognitive and motivational challenges in language education. These results confirm, extend, and empirically substantiate prior research, offering actionable insights for EFL pedagogy in Indonesia.

CONCLUSION

Based on the results of this study, the implementation of Quizizz significantly improved students' grammar skills. The normality test confirmed that the data were normally distributed, and the homogeneity test verified that the variances between the control and experimental groups were homogeneous. Furthermore, the paired samples t-test revealed a statistically significant improvement in grammar scores for both groups, with the experimental group demonstrating a greater increase (mean gain of 9.833) compared to

the control group (mean gain of 5.200). These findings suggest that Quizizz is more effective than conventional teaching methods in enhancing students' grammar performance.

Considering the benefits provided by this platform, educators are encouraged to incorporate game-based learning applications such as Quizizz into their classroom instruction. The effective integration of technology not only enhances learning outcomes but also fosters a more engaging, enjoyable, and learner-centred environment. This approach is particularly relevant in today's digital era, where student engagement plays a critical role in successful learning, especially in mastering language components such as grammar.

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