



## APPLICATION OF QUIZIZZ IN INCREASING STUDENTS' VOCABULARY OF ELEVENTH GRADE AT SMA NEGERI 1 PEMATANGSIANTAR

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### ABSTRACT

*This research aimed to investigate the effectiveness of using Quizizz, a gamified online learning platform, in improving the vocabulary mastery of eleventh-grade students at SMA Negeri 1 Pematangsiantar. The study employed a quantitative experimental design involving two groups: an experimental group taught using Quizizz and a control group taught through conventional methods. Both groups were given a pre-test and post-test to measure their vocabulary acquisition before and after the treatment. The total number of participants was 72 students, consisting of 36 students in each group, selected using cluster random sampling. The results showed a significant improvement in the vocabulary scores of students in the experimental group compared to those in the control group. The average gain score for the experimental group was notably higher, and the statistical analysis using an independent sample t-test confirmed that the difference was significant ( $p < 0.05$ ). The findings suggest that Quizizz effectively enhances vocabulary learning by increasing student engagement, motivation, and retention through interactive and enjoyable learning experiences. In conclusion, the study supports the integration of digital tools like Quizizz into vocabulary instruction as a means of improving student learning outcomes. The use of game-based learning not only improves academic performance but also fosters a more engaging and dynamic classroom environment.*

**Keywords:** Vocabulary Mastery, Quizizz, Gamification, Vocabulary Learning,

### INTRODUCTION

Vocabulary mastery is a fundamental component in acquiring language skills, especially in learning English as a Foreign Language (EFL). Vocabulary serves as the building block for effective communication and comprehension in both spoken and written forms (Nation, 2013). For high school students, expanding their vocabulary repertoire is essential to support their academic progress and language proficiency. However, many EFL learners in Indonesia face challenges in learning and retaining new vocabulary due to limited exposure and insufficient practice (Setiyadi, 2018). Therefore, innovative and engaging instructional methods are required to

enhance vocabulary acquisition in the classroom.

In recent years, technology integration in language learning has become increasingly popular, with digital tools offering interactive and motivating ways to practice vocabulary (Godwin-Jones, 2018). Among these tools, Quizizz stands out as a game-based learning platform that facilitates student engagement through quizzes, immediate feedback, and competitive elements. Quizizz allows teachers to create customized quizzes that align with learning objectives, making it a flexible and effective tool for vocabulary learning (Perez, 2020).

The use of Quizizz in EFL contexts has shown promising results in increasing

student motivation and improving vocabulary retention (Huang, 2021). The platform's gamified approach encourages active participation and fosters a fun learning environment, which is crucial for sustaining students' interest and enhancing memory recall (Dicheva, Dichev, Agre, & Angelova, 2015). This is particularly important for senior high school students, who often struggle with traditional rote memorization techniques that can lead to disengagement.

Despite the growing popularity of Quizizz, there remains limited research on its specific application in Indonesian high schools, particularly in vocabulary development for Grade XI students. SMA Negeri 1 Pematangsiantar, as one of the prominent public schools in North Sumatra, presents a relevant setting to investigate the effectiveness of this digital tool. Exploring the impact of Quizizz on students' vocabulary acquisition can provide insights into best practices and inform teaching strategies in similar educational contexts.

Furthermore, vocabulary learning is not only about memorizing word lists but also about understanding usage, collocations, and contextual meanings (Schmitt, 2010). Quizizz, with its ability to incorporate various question types and multimedia elements, can cater to these multifaceted aspects of vocabulary learning. By offering instant corrective feedback, it also supports autonomous learning and allows students to monitor their progress.

However, challenges such as varying student access to technology, differing levels of digital literacy, and potential distractions during gameplay must be considered (Sung, Chang, & Liu, 2016). Understanding how these factors influence the implementation of Quizizz in the classroom is essential to maximize its benefits and address possible limitations.

This study aims to examine the application of Quizizz as a tool to increase vocabulary mastery among eleventh-grade students at SMA Negeri 1 Pematangsiantar. It seeks to identify the effectiveness of Quizizz in enhancing vocabulary acquisition and to explore students' attitudes and responses towards using this platform. The findings are expected to contribute to the development of engaging, technology-driven vocabulary teaching methods in Indonesian senior high schools.

## LITERATURE REVIEW

Vocabulary acquisition is a crucial element in language learning and has been widely researched due to its impact on overall communicative competence (Laufer & Goldstein, 2004). Effective vocabulary learning requires repeated exposure, contextualized usage, and active engagement with new words (Webb & Nation, 2017). Traditional vocabulary teaching methods, such as rote memorization and list learning, often fail to promote deep learning and long-term retention (Schmitt, 2008). Consequently, educators have explored interactive and technology-assisted approaches to foster more meaningful vocabulary learning experiences. The integration of digital tools in language education has gained momentum, with numerous studies highlighting their potential to increase student motivation and engagement (Reinders & Wattana, 2014; Herman et al., 2025). Among digital tools, game-based learning platforms have attracted particular attention because they transform learning activities into interactive, enjoyable experiences (Vlachopoulos & Makri, 2017). Gamification elements such as points, leaderboards, and instant feedback encourage learners to participate actively and maintain focus, which are vital factors for vocabulary retention (Sailer et al., 2017).

Quizizz, as an online quiz platform, incorporates these gamification principles and allows teachers to customize quizzes that align with curriculum goals (Denny, 2017). Its multiplayer mode fosters competition, while the immediate feedback feature helps students identify and correct errors promptly. Studies by Bicen and Kocakoyun (2018) demonstrated that using Quizizz in language classrooms significantly improved learners' vocabulary knowledge and reduced anxiety associated with traditional testing methods. The platform's flexibility also supports differentiated learning, enabling students to progress at their own pace.

Research specifically targeting vocabulary acquisition through Quizizz has shown promising outcomes. For instance, a study by Alqahtani (2020) found that students using Quizizz scored higher on vocabulary tests compared to those using conventional study methods. The game-like environment helped students develop a positive attitude toward learning new words, increasing both their motivation and confidence. Similarly, Chuang (2019) reported enhanced vocabulary retention among EFL learners who practiced with Quizizz regularly. However, while Quizizz offers many advantages, it is important to consider the role of teacher facilitation in maximizing its effectiveness (Peterson, 2016). Successful integration depends on designing quizzes that are pedagogically sound and appropriately challenging. Teachers must also monitor student progress and provide additional support when necessary. Moreover, the social aspect of competition should be balanced to ensure it motivates rather than discourages students.

In the Indonesian context, studies on educational technology usage in senior high schools have shown mixed results due to factors like limited access to devices and internet connectivity (Firdaus & Fadillah,

2019). Yet, with increasing digital literacy among students, tools like Quizizz have the potential to transform vocabulary learning practices when properly implemented (Widodo & Rahman, 2021). This highlights the need for further empirical research to evaluate the impact of Quizizz on vocabulary development in specific school settings, such as SMA Negeri 1 Pematangsiantar.

## METHODOLOGY

### 1. Research Design

This research employed a quantitative experimental design involving three stages: pre-test, treatment, and post-test. This design was used to investigate the effect of using Quizizz on students' vocabulary mastery. According to Creswell (2014), quantitative research involves testing objective theories by examining the relationships among measurable variables, using instruments and statistical analysis (Rumapea et al., 2025). In this study, students were divided into two groups: an experimental group, which received vocabulary instruction through Quizizz, and a control group, which was taught using traditional, non-digital methods. The structure of the experimental design is summarized below:

Table 1. The Research Design

Group	Pre-Test	Treatment	Post-Test
Experimental	X1	Y (Using Quizizz)	X2
Control	X1	— (Conventional)	X2

X1: Pre-test for both groups

Y: Treatment using Quizizz (only for experimental group)

X2: Post-test for both groups

### 2. Population and Sample

The population of this research consisted of eleventh-grade students of SMA Negeri 1 Pematangsiantar in the 2025/2026 academic year, totaling 432 students across 12 classes. As noted by Creswell (2014, p. 142), a population is a group of individuals sharing common characteristics, which are the central focus of the study. The sampling technique used in this research was cluster random sampling, as described by Azwar (2010, p. 109), who explains that this method is appropriate when the population is homogeneous and divided into natural clusters. From the twelve classes available, Class XI-11 was randomly chosen as the experimental class, and Class XI-8 was selected as the control class. Each class consisted of 36 students, making a total sample of 72 students.

### 3. Instrument of the Research

The main instrument used in this research was a vocabulary test designed to measure students' vocabulary mastery before and after the treatment. The test consisted of multiple-choice and matching-type items focused on vocabulary appropriate for the eleventh-grade level. The test was validated by English teachers at SMA Negeri 1 Pematangsiantar to ensure it matched the curriculum and student proficiency level.

The test was administered twice:

- a) Pre-test: to assess the students' initial vocabulary knowledge
- b) Post-test: to measure any improvement after the treatment

To ensure reliability, the same set of vocabulary items was used for both tests, although item order was changed to reduce recall bias.

### 4. Technique of Data Collection

Data collection in this study followed three main stages:

- 1) Pre-test: Both experimental and control groups were given a vocabulary test to assess their baseline knowledge.
- 2) Treatment: The experimental group was taught using Quizizz as the main instructional tool for vocabulary lessons, while the control group received traditional instruction (e.g., using textbooks and verbal explanations).
- 3) Post-test: After the treatment period (approximately 4–6 sessions), both groups were given a post-test containing the same vocabulary items to evaluate any improvement.

Throughout the treatment, the researcher also observed the learning process in the experimental class to ensure that Quizizz was used consistently and effectively.

### 5. Technique of Data Analysis

The data from the pre-tests and post-tests were analyzed using quantitative statistical analysis. The main statistical method used was the t-test for independent samples, which is appropriate for comparing the means between two groups. The analysis was conducted to determine whether there was a statistically significant difference in vocabulary scores between the experimental group and the control group.

The steps of data analysis included:

- a) Scoring the pre-test and post-test results of both groups
- b) Calculating the mean and standard deviation of each group's scores
- c) Conducting a t-test to compare the post-test scores of the two groups
- d) Interpreting the significance level (usually at  $p < 0.05$ ) to determine the effect of the treatment

The results of this analysis were then used to evaluate the effectiveness of using Quizizz as a vocabulary learning tool.

## RESULTS

This study aimed to determine the effectiveness of Quizizz in improving students' vocabulary mastery. The results are based on pre-test and post-test scores from both the experimental and control groups.

### 1. Pre-Test Results

Before the treatment, a pre-test was administered to both groups to measure their initial vocabulary knowledge. The test consisted of 30 vocabulary questions.

- a) The experimental group (Class XI-11) had an average pre-test score of 61.8.
- b) The control group (Class XI-8) had an average pre-test score of 60.5.

These scores indicate that both groups were at a similar level before the treatment, which supports the validity of the experimental design.

### 2. Post-Test Results

After the treatment (use of Quizizz in the experimental group), both groups were given a post-test with the same number of questions.

- a) The experimental group's average post-test score increased to 82.3.
- b) The control group's average post-test score increased slightly to 68.1.

### 3. Comparison of Results

The improvement in scores from pre-test to post-test can be summarized as follows:

- a) Experimental group gain:  $82.3 - 61.8 = +20.5$
- b) Control group gain:  $68.1 - 60.5 = +7.6$

This data shows a significantly greater improvement in the experimental group, suggesting that the use of Quizizz positively

affected students' vocabulary mastery. A t-test was conducted to analyze the significance of the difference between the post-test scores of the two groups. The result showed a p-value  $< 0.05$ , indicating a statistically significant difference between the two groups' performance after the treatment.

## DISCUSSION

The findings of this study clearly indicate that the integration of Quizizz into vocabulary learning significantly enhanced students' performance. The students who were taught using Quizizz showed a much higher gain in vocabulary mastery compared to those who received conventional instruction. This improvement can be attributed to several factors. First, Quizizz employs gamification elements such as points, leaderboards, and instant feedback, which have been shown to increase motivation and engagement (Vasquez & Chiang, 2020). These elements create a more interactive and less stressful environment for students, which may encourage better focus and retention of vocabulary.

Secondly, Quizizz supports repetition and immediate correction, which are essential features of effective vocabulary learning (Webb, 2008). Students receive real-time feedback during quizzes, allowing them to immediately recognize their errors and correct them, reinforcing memory through active recall. In contrast, students in the control group, who were taught using traditional methods such as textbook exercises and teacher explanation, did not experience the same level of engagement or interactivity. While their vocabulary scores improved, the gain was relatively modest. This aligns with previous research by Ashraf, Motlagh, and Salami (2014), who found that technology-supported learning environments

tend to produce better vocabulary outcomes than conventional methods.

Moreover, students in the experimental group reported higher levels of enjoyment and confidence during learning sessions, based on informal feedback collected by the researcher. Enjoyment is a crucial emotional factor that contributes to positive learning attitudes and improved performance (Deci & Ryan, 2000). However, it is worth noting that effective implementation of digital tools like Quizizz depends heavily on teacher preparation and student access to technology.

In this study, all students had access to smartphones and internet during the intervention, but this may not be the case in every educational setting. In conclusion, the results support the idea that Quizizz is an effective tool for enhancing vocabulary acquisition among high school EFL learners. Its engaging, interactive format encourages participation, supports formative assessment, and fosters a more enjoyable learning experience.

## CONCLUSION

Based on the findings and analysis of this research, it can be concluded that the use of Quizizz as a digital learning tool has a significant positive effect on improving students' vocabulary mastery. The experimental group, which was taught using Quizizz, showed a much higher gain in post-test scores compared to the control group, which received instruction through traditional methods. The statistical analysis further confirmed that the improvement in the experimental group was significant, indicating that the Quizizz application effectively supported vocabulary acquisition among eleventh-grade students.

The success of Quizizz in this study can be attributed to its engaging features, such as gamification, instant feedback, and a

competitive but fun environment. These features helped students stay motivated, actively involved, and more confident in learning new vocabulary. Unlike conventional methods that often rely on passive memorization, Quizizz encouraged active recall and repeated exposure, both of which are essential for long-term vocabulary retention.

In conclusion, the integration of Quizizz in vocabulary instruction provides a valuable alternative to traditional teaching approaches. It not only improves learning outcomes but also enhances the overall classroom experience by making learning more interactive and enjoyable. Teachers are encouraged to adopt technology-enhanced learning tools like Quizizz to better engage students and meet the needs of modern, digital-native learners.

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