

## The Effect of Using Quizizz for Vocabulary Mastery of SMKN 1 Pekanbaru Students

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### Abstract

This study explores the effect of using Quizizz on students' vocabulary mastery at SMKN 1 Pekanbaru. A pre-experimental one-group pre-test and post-test design was applied to 37 students of class XI MPLB 3. Students were treated over four sessions using a scientific approach in Merdeka Curriculum, with Quizizz applied as an interactive learning and assessment tool. The vocabulary test focused on five elements from narrative texts: nouns, adjectives, mental verbs, action verbs, and conjunctions. The pre-test mean score was 65.56 (SD = 12.24), which increased to 87.41 (SD = 6.36) in the post-test. A paired sample t-test showed a statistically significant difference ( $t = -14.317$ ,  $p < .001$ ), with a mean gain of 21.84 points. Quizizz's game-based features appeared to boost students' engagement and performance. The instrument's reliability was confirmed by a KR-20 value of 0.91, indicating excellent internal consistency. These results demonstrate that Quizizz significantly improves vocabulary mastery in the context of narrative texts.

**Keywords:** Quizizz, Vocabulary Mastery, Narrative Text



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### INTRODUCTION

English has emerged as a global language, essential for communication across international borders and integral to education, business, science, and technology. Within educational contexts, English plays a crucial role in accessing academic resources, fostering critical thinking, and developing cross-cultural understanding. In Indonesia, English is taught as a foreign language from primary to tertiary levels, with increasing emphasis on communicative competence. One of the foundational components of language proficiency is vocabulary mastery, which enables learners to comprehend texts, express ideas, and engage in meaningful communication. Vocabulary is more than a list of words; it is a system of meaning that connects form and usage. As Burns and Broman (1975) state, vocabulary consists of words that form a shared language for communication. Without sufficient vocabulary, students struggle to read, write, listen, and speak effectively. Zimmerman (1997) emphasizes vocabulary as the most critical component of language learning, as it directly influences learners' ability to comprehend and produce language. Hence, building vocabulary mastery is essential for learners to progress in English.

In senior high schools, particularly vocational institutions like SMKN 1 Pekanbaru, vocabulary plays a significant role in students' ability to comprehend texts such as narratives, which are part of the curriculum. The current Merdeka Curriculum emphasizes independent learning, higher-order thinking skills, and the development of Pancasila student profiles. One of the core competencies in English for eleventh-grade students is the ability to understand narrative texts by identifying their structure and language features, including various word classes such as nouns, verbs, adjectives, and conjunctions. However, based on field observations and informal interviews with three English teachers at SMKN 1 Pekanbaru, many students still experience difficulty mastering vocabulary. These difficulties include low retention, limited understanding of context, and poor application of vocabulary in both written and spoken forms.

Teachers noted that although students show interest during lessons using conventional media like PowerPoint or LKPD (student worksheets), their vocabulary comprehension remains low. The gap between curriculum expectations and student performance suggests the need for more engaging and effective teaching strategies.

In response to this challenge, educators are increasingly integrating technology into language instruction. Game-based learning applications, such as Quizizz, have become popular tools in the English Language Teaching (ELT) landscape. Quizizz is an interactive, web-based application that turns assessments into game-like experiences. It offers features such as immediate feedback, points, leaderboards, and multimedia integration, which promote active participation and motivation (Citra & Rosi, 2020). The application is accessible across devices, allowing students to work individually or in groups, synchronously or asynchronously. Gamification, defined as the use of game elements in non-game contexts (Deterding et al., 2011), has proven effective in increasing learner engagement, motivation, and knowledge retention. Several studies support the positive impact of gamified learning on vocabulary acquisition. For instance, Asti et al. (2024) found that Quizizz improved high school students' vocabulary mastery and motivation. Similarly, Nabila et al. (2023) highlighted how Quizizz promotes vocabulary retention through repetition and immediate correction in a non-threatening environment. Pavita and Nirmala (2021), through classroom action research, also demonstrated an improvement in students' vocabulary and learning enthusiasm after using Quizizz.

Despite these promising results, several gaps remain in previous research. First, most studies do not specifically focus on vocabulary mastery in relation to narrative texts. Second, many lack clarity in treatment procedures or fail to align with the Merdeka Curriculum's scientific approach. Third, while prior studies often measure general vocabulary knowledge, few break it down into specific language features or word classes relevant to curriculum standards. This study seeks to fill these gaps by focusing on five key vocabulary elements—nouns, adjectives, action verbs, mental verbs, and conjunctions—within the context of narrative texts, using Quizizz as the treatment tool. In line with the Merdeka Curriculum's Phase F objectives for eleventh grade, this study uses a scientific approach across four structured sessions. Each session integrates Quizizz activities to reinforce vocabulary related to narrative texts. By embedding vocabulary exercises within engaging and meaningful tasks, this approach aims to enhance students' mastery and retention of target language. Thus, the researcher has motivated to do quantitative research about The Effect of Using Quizizz for Vocabulary Mastery of SMKN 1 Pekanbaru Students.

## RESEARCH METHODS

This study employed a quantitative research method with a pre-experimental one-group pre-test and post-test design to investigate the effect of Quizizz on vocabulary mastery. The research was conducted at SMKN 1 Pekanbaru in January–February 2025, involving one experimental class, XI MPLB 3, which consisted of 37 students selected through cluster random sampling. The research design included administering a vocabulary pre-test, applying a treatment using Quizizz during four instructional sessions, and concluding with a post-test. The vocabulary test consisted of 50 multiple-choice items, developed to reflect the five language features commonly found in narrative texts—nouns, adjectives, mental verbs, action verbs, and conjunctions—based on the Phase F objectives of the Merdeka Curriculum. The treatment integrated a scientific approach and included observing, questioning, experimenting, associating, and communicating through narrative text themes such as *The Goose Girl* and *Little Red Riding Hood*. Quizizz was used during each session to assess and reinforce vocabulary understanding. Data were analyzed using Microsoft Excel and SPSS version 30. The normality

of data distribution was tested using the Kolmogorov-Smirnov test, and a paired sample t-test was conducted to compare students' scores before and after the treatment. Scoring followed a classification scale adapted from Arikunto (2012), and descriptive statistics such as mean scores, frequency distributions, and percentages were used to evaluate the improvement in students' vocabulary mastery..

## RESEARCH RESULTS AND DISCUSSION

The purpose of this research is to determine whether the use of the Quizizz has a significant effect on the vocabulary mastery of eleventh-grade students in SMKN 1 Pekanbaru. The data collected included pre-test and post-test scores of 37 students from one group pre-test post-test design, XI MPLB 3.

### Instrument Validity and Reliability

To ensure the accuracy of the instrument used in this research, a validity test was conducted using a tryout class consisting of 35 students from class XI AKL 2 at SMKN 1 Pekanbaru. The test items were evaluated using the Pearson Product Moment Correlation in SPSS version 30. According to Soegiyono (2023) and Ghozali (2023), an item is valid if its correlation coefficient ( $r$ ) exceeds the  $r$ -table value (0.278 at  $n = 35$ ) and its significance level is below 0.05.

All 50 items showed correlation coefficients ranging from 0.374 to 0.936 with  $p$ -values  $< 0.05$ , confirming that all items were valid and suitable for measuring students' vocabulary mastery. Reliability analysis was conducted using the Kuder-Richardson Formula 20 (KR-20) with the help of Microsoft Excel 2021. KR-20 measures the internal consistency of the test items. A KR-20 value of 0.91 was obtained, which is categorized as 'excellent' according to George and Mallery (2003). This indicates that the test instrument is highly reliable for assessing vocabulary mastery.

### Result of Pre-Test and Post-Test

**Table 1. Students' Pre-test and Post-test Score**

Statistic	Pre-test	Post-test
Mean	65,56	87,40
Std. Deviation	12,239	6,357
N	37	37

The table 1 shows the students' score of pre-test from one group class gain 65,5 mean score by 37 students that classified as mediocre according to Arikunto (2012) with standard deviation 12,239 calculated. From the table also presented the score of post-test after treatment of applying Quizizz. The mean score is 87,4 and classified as excellent with standard deviation 6,357 calculated.

### Students' Average Score Each Vocabulary Element

**Table 2. Students' Average Score Each Vocabulary Element**

Vocabulary Element	Pre-test	Post-test
Noun	82	87
Adjective	78	91
Mental Verb	52	88
Action Verb	57	87
Conjunction	58	85

The results show that students improved across all five vocabulary elements after the treatment using Quizizz. The highest improvement was seen in mental verbs, increasing from 52 to 88, indicating that students gained a stronger understanding of abstract vocabulary through contextual exposure. Adjectives also showed a notable rise from 78 to 91, suggesting that descriptive language became more familiar and accessible. Action verbs improved from 57 to 87, reflecting better recognition of event-related vocabulary. Nouns, which started high at 82, increased slightly to 87, showing consistent strength. Conjunctions, while scoring the lowest overall (from 58 to 85), still showed significant growth, though they may require more in-depth practice due to their functional complexity in sentence structure.

### Normality Test

To determine whether the data followed a normal distribution, the Shapiro-Wilk normality test was conducted, suitable for samples under 50 participants. The result shown below:

**Table 3. The Result of Normality Test**

Kolmogorov – Smirnov <sup>a</sup>				Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Pretest	.092	37	.200*	.981	37	.761
Posttest	.132	37	.104	.958	37	.173

According to Mishra et al. (2019) if the Shapiro-Wilk test  $> 0,05$ , then the data is normally distributed. Based on the table above, the pre-test shows that the Shapiro-Wilk sig value is 0,761, where it is  $> 0,05$  and the data can be stated normally distributed. Meanwhile the post-test shows that the Shapiro-Wilk sig value is 0,173, where it is  $> 0,05$  and the data can be stated normally distributed.

### Hypothesis Testing (Paired Sample T-Test)

The paired sample t-test was conducted in this study to examine whether there was a significant difference in students' scores before and after using Quizizz.

**Table 4. Paired Samples Test**

Paired Sample T-Test					
	N	Mean	Std. Deviation	Std. Error Mean	Sig. (2-tailed)
Pre-test Post-test	36	-21.83784	9.27815	1.52532	<,001

From table 4, it can be seen that the result of Sig. value (2-tailed) is  $<,001 < 0,05$ , so the alternative hypothesis ( $H_a$ ) is accepted and the null hypothesis ( $H_0$ ) is rejected. In other words, there was a significant improvement effect of using Quizizz for vocabulary mastery of SMKN 1 Pekanbaru students.

### Discussion

The findings of this study demonstrate a significant improvement in students' vocabulary mastery after using Quizizz as a learning tool. The mean score rose from 65.56 in the pre-test to 87.40 in the post-test, with a lower standard deviation, indicating greater consistency across the class. Improvements were observed across all five vocabulary elements. The most substantial gain occurred in mental verbs, increasing from 52 to 88, suggesting that Quizizz's contextual and repetitive question formats helped students better grasp abstract language. Adjectives rose from 78 to 91, likely due to the visual and descriptive nature of Quizizz that

reinforced understanding of descriptive words. Action verbs improved from 57 to 87, reflecting better recognition of commonly used activity-related vocabulary. Nouns, already strong in the pre-test (82), still increased to 87, indicating consistent familiarity, possibly due to their frequent appearance in narrative texts. Conjunctions saw the smallest gain (from 58 to 85), though still significant, suggesting that while Quizizz supported their learning, function words may require more targeted grammatical instruction. The Shapiro-Wilk normality test confirmed that the data were normally distributed, and the paired sample t-test revealed a statistically significant difference ( $p < 0.001$ ), supporting the conclusion that Quizizz effectively enhances vocabulary mastery. This study confirms that Quizizz is an effective tool for enhancing students' vocabulary mastery, particularly in elements like adjectives and mental verbs. The significant improvement in post-test scores, along with reduced score variation, indicates that students not only learned more words but understood and retained them better. These results align with previous studies (e.g., Putri & Santosa, 2022; Mulyani et al., 2023; Santoso, 2023) that highlight Quizizz's strengths in promoting content word mastery through visual, contextual, and interactive features. Although conjunctions showed smaller improvement, this is consistent with findings by Puspitasari and Yulianti (2021), suggesting function words require more focused instruction. Overall, Quizizz supports both engagement and learning by making vocabulary mastery more meaningful, enjoyable, and consistent across student levels.

## CONCLUSION

This study concludes that Quizizz is an effective digital tool for enhancing students' vocabulary mastery, as demonstrated by the significant improvement in test scores after its implementation. Students at SMKN 1 Pekanbaru showed notable gains across all vocabulary elements, with the most substantial improvements in adjectives and mental verbs, indicating better understanding and contextual usage. Although conjunctions remained the most challenging, their post-test scores still showed progress, suggesting that all vocabulary categories benefited from the treatment. These findings reinforce that Quizizz supports not just vocabulary recognition, but also deeper comprehension and accurate usage, making it a meaningful tool for vocabulary development in the classroom.

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