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THE EFFECTIVENESS OF QUIZIZZ TO IMPROVE STUDENTS' VOCABULARY: A CASE STUDY OF 7th GRADE AT SMPN 14 SEMARANG

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Abstract

This study examines the effectiveness of Quizizz, a gamified learning platform, in improving vocabulary proficiency among seventh-grade students at SMPN 14 Semarang. A quantitative experimental design was employed with 64 students, who were allocated into an experimental group instructed via Quizizz and a control group instructed using conventional techniques. Data were gathered by pre-test and post-test vocabulary evaluations, supplemented with a student questionnaire. The validity and reliability of the instrument were established (Pearson's correlation significance < 0.05; Cronbach's Alpha = 0.718). Data analysis utilizing SPSS 26 encompassed normality assessment, homogeneity evaluation, paired sample t-tests, and independent t-tests. The results indicated that both groups exhibited improvement; however, the experimental group attained more gains (mean improvement of 9.37 points) than the control group (8.12 points). Statistical analyses revealed significant differences (Sig. 0.000 < 0.05) favoring the Quizizz group. The effectiveness of Quizizz is due to its gamification features, immediate feedback, and alignment with adolescents' learning preferences. The study suggests that Quizizz is an effective and entertaining instrument for vocabulary acquisition; however, additional research with larger samples and extended duration is advised.

Keywords: *Effectiveness, Quizizz, Vocabulary Improvement, 7th Grade Students*

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Introduction

Language is universally recognized as the primary medium of human communication, and in the era of globalization, mastering English as an international language has become increasingly essential. English not only serves as a tool for daily interaction but also carries cultural and intellectual dimensions that influence learners' perspectives and identities. Within English language learning, Vocabulary mastery is fundamental, as it underpins the development of other skills including speaking, reading, writing, and listening. However, despite its critical importance, many students continue to struggle with vocabulary acquisition due to limited exposure to English and monotonous teaching practices that reduce motivation and hinder learning outcomes (Blachowicz, 2008; Schmitt, 2000)

Recent developments in digital learning platforms have created opportunities for more engaging and interactive learning experiences. One such platform is Quizizz, a gamified learning tool that allows teachers to design quizzes with real-time feedback, leaderboards, and interactive features that can enhance student motivation and engagement. Several studies have shown the potential of Quizizz in supporting vocabulary learning. For instance, (Agustin, 2022; Harahap, 2024; Hasan Parinduri, 2023; Kolanus et al., 2023) found that the integration of Quizizz significantly improved students' vocabulary knowledge and encouraged active participation in the learning process. These studies highlight the pedagogical advantages of gamified learning. However, they tend to focus broadly on general language learning contexts or motivational outcomes rather than specifically addressing vocabulary mastery in junior high school settings.

In light of this context, a study gap persists on the effectiveness of Quizizz in enhancing vocabulary acquisition among junior high school students in Indonesia, specifically at SMPN 14 Semarang. Although previous studies have shown Quizizz's beneficial effects in other educational settings, there is less evidence concerning its specific use for vocabulary development in 7th grade. This study aims to address the gap by implementing a case study that assesses the effectiveness of Quizizz in enhancing students' vocabulary proficiency through a pre-test and post-test methodology.

This study aims to achieve two objectives: first, to ascertain if Quizizz significantly enhances the vocabulary acquisition of 7th-grade students at SMPN 14 Semarang; and second, to discover the elements that affect its effectiveness in the classroom environment. The novelty of this research lies in its specific focus on 7th-grade learners within a real school context, as well as its attempt to explore not only the learning outcomes but also the underlying factors that contribute to the success of gamified learning. The findings are expected to enrich the existing literature on technology-enhanced language learning and provide practical insights for teachers and educational institutions to design more engaging, student-centered approaches. The study possesses considerable educational merit by promoting the incorporation of digital tools such as Quizizz into the curriculum to more effectively address the learning requirements of students in the digital era.

Research Methods

Design

This study employs a quantitative design, specifically an experimental design, to investigate the hypothesis on the usefulness of utilizing Quizizz in vocabulary acquisition. This experimental design compares the treatment group to the comparison group, who did not get the treatment but used traditional teaching methods. According to (Sugiyono, 2013), this approach enables researchers to systematically assess the impact of independent variables on dependent variables. This design also included data collection via pre- and post-tests to measure changes in vocabulary mastery before and after the intervention, in line with a quantitative research framework that emphasizes numerical data analysis to identify correlations between variables (Creswell & Creswell, 2018)

Participants

This study included all seventh-grade students from SMPN 14 Semarang, a total of 288 students grouped into nine classes (A-I). A purposeful sample of 64 students was drawn from this cohort. This sample included two classes, Class I as the experimental group and Class H as the control group, each with 32 students. The seventh-grade kids were chosen based on numerous essential factors important to the research aims. First, seventh grade is regarded as a critical phase in English language learning, particularly vocabulary growth, because at this age, students begin to transfer to more sophisticated language structures and employ more advanced terminology. Second, seventh-graders are more receptive to interactive media for instance, game-based learning platforms like Quizizz, which can enhance student engagement and motivation to study. Third, seventh-grade students have a relatively constant range of ability levels, allowing for a more objective assessment of Quizizz's impact on vocabulary advancement, providing greater insights into the platform's educational usefulness.

Instrument

The research instruments are constructed to examine the variables in this study. A questionnaire was added to gather students' responses regarding the use of Quizizz, along with vocabulary assessments (pre-test and post-test) for both the experimental and control groups. The pre-test, administered before to the commencement of the Quizizz intervention, aims to evaluate students' fundamental vocabulary competencies and establish a reference point for comparison. This instrument consists of ten multiple-choice questions meant to assess students' comprehension of English vocabulary, which covers a variety of vocabulary subjects pertinent to the seventh-grade curriculum. The post-test is a key evaluation step after implementing the Quizizz learning program to assess students' vocabulary progress. This multiple-choice test assesses students' comprehension of new vocabulary topics, as well as their ability to recognize, interpret, and apply the words they have acquired in suitable contexts.

Pearson's Correlation is used to analyze the validity of the test questions, and the majority of them are statistically valid (Sig. <0.05). The 25-item vocabulary test's reliability was confirmed by a Cronbach's Alpha rating of 0.718, which indicates excellent internal consistency.

Data Collection

The objective of the study is to ascertain whether there is a substantial disparity in vocabulary mastery between the treatment group and the comparison group. SPSS Statistics 26 is employed to analyse the data, and descriptive statistical calculations are conducted. Kolmogorov-Smirnov or Shapiro-Wilk tests are applied to confirm normal data distribution. Levene's Test was used to determine if the variance between groups was similar. To compare pre- and post-test data within each group, hypotheses are tested using a paired sample t-test and an Independent Sample T-test. The significance level for hypothesis testing is set at 0.05. The statistical analysis results are used to evaluate the data and generate conclusions on how much Quizizz can increase vocabulary learning in seventh-graders.

Data analysis

The data from this study are quantitatively analysed using SPSS Statistics 26. This analysis included two major stages: precondition analysis, testing, and hypothesis testing. These stages are critical in verifying the authenticity and trustworthiness of the data, as well as deriving relevant inferences from the research findings. Each stage is described in more detail below:

1. Prerequisite Analysis Test

The prerequisite analysis test involves normality and homogeneity tests. Normality Test The normality test is conducted to determine whether the data distribution follows a normal distribution. The Kolmogorov-Smirnov and Shapiro-Wilk tests are used for this purpose.

The decision criteria are listed below:

- a. If the probability value (Sig.) exceeds 0.05, the data distribution is considered normal.
- b. If the probability value (Sig.) < 0.05 indicates that the data distribution is not normal.

Homogeneity Test

The homogeneity test, specifically Levene's Test, determines if the variance of the data in the experimental and comparison groups is comparable. The decision criteria are listed below:

- a. If the significance value (Sig.) is greater than 0.05, the data is distributed uniformly (with the same variance).
- b. A significance value (Sig.) < 0.05 indicates that the data is not homogeneous (with distinct variances).

2. Hypothesis Testing

To examine the treatment's effectiveness, hypothesis testing is performed using the Paired Sample T-Test to compare entry and exit test data within each group, as well as the Independent Sample T-Test to compare exit test scores between the experimental and control groups. The data is analyzed using the SPSS Statistics 26 program. The following are the choice guidelines for this test based on the significance value (Sig. 2-tailed):

- A significant difference (alternative hypothesis/ H_1 / H_1 accepted) is indicated by a 2-tailed significance value of < 0.05 .
- If the significance value (Sig. 2-tailed) is greater than 0.05, there is no significant difference (null hypothesis/ H_0 / H_0 accepted).

Results and Discussion

The presentation of the study's findings aligns with the goals of the investigation. The results contain paired sample t-test results for the experimental and comparison groups, descriptive statistics of students' pre- and exit test scores, and instrument validity and reliability testing results.

Results

The effectiveness of Quizizz in improving the English vocabulary mastery of grade 7 students at SMPN 14 Semarang.

Based on the data obtained, it can be explained that Quizizz is very effective in improving the English vocabulary mastery of 7th-grade students at SMPN 14 Semarang. The results indicate that Quizizz significantly improved students' vocabulary mastery in the treatment group compared to the comparison group. As shown in Table 1, the average pre-test score for the experimental class was 78.13, which increased to 87.50 in the post-test, yielding an average improvement of 9.37 points. In contrast, the control class showed an increase from 77.19 in the pre-test to 85.31 in the post-test, with a smaller improvement of 8.12 points.

Table 1. Mean Score

	N	Minimum	Maximum	Mean	Std Deviation
PreTest Exp Class	32	50	100	78.125	15.755
PostTest Exp Class	32	70	100	87.5	15.755
Pretest Control Class	32	60	100	77.1875	12.250
PostTest Control Class	32	70	100	85.3125	12.250
Valid N	32				

The validity and reliability of the research instrument (vocabulary test) were examined before the primary analysis. The validity test using Pearson's Correlation showed that most of the 25 questions were statistically valid (Sig. < 0.05), with some questions showing high to very high validity (for example, question number 10 with a correlation of 0.808**). Although there were some invalid items, the valid items were sufficient to accurately measure vocabulary knowledge. A Cronbach's Alpha rating of 0.718, which indicates satisfactory internal consistency and reliability of the data obtained, validated the instrument's reliability.

The pre-test and post-test results for each group were compared using the Paired Sample T-Test hypothesis test.

Paired Samples Test									
		Paired Differences							
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference		t	df	Sig. (2-tailed)
					Lower	Upper			
Pair 1	Pretest Experimental Class - Posttest Experimental Class	78,12500000	15,75554226	2,78521269	72,44452126	83,80547874	28,050	31	,000
Pair 2	Pretest Control Class - Posttest Control Class	77,18750000	12,25024814	2,16555838	72,77081456	81,60418544	35,643	31	,000

Picture 1.1 Paired Sample T-Test

The paired sample t-test results demonstrate a significant difference in pre-test and post-test scores for both groups. The average difference in the treatment group was 78.13, with a t-value of 28.050 and a significance level of 0.000. Meanwhile, the average difference in the comparison group was 77.19, with a t-value of 35.643 and a significance level of 0.000.

The significance value (Sig. 2-tailed) for both groups was 0.000, which is less than 0.05, indicating that there was a statistically significant difference between the entry test and exit test results in each group.

These findings confirm that learning interventions, whether using the Quizizz application or traditional methods, were successful in significantly improving students' vocabulary mastery.

Factors influence the effectiveness of using Quizizz in vocabulary learning at SMPN 14 Semarang

The findings of this study substantially support the premise that using Quizizz is significantly more successful in enhancing seventh-grade students' English vocabulary knowledge than traditional teaching techniques. The treatment group had a larger

average score gain (9.37 points) than the comparison group (8.12 points), demonstrating the advantages of the Quizizz-based method.

The effectiveness of Quizizz can be attributed to several key factors:

- a. **Gamification Design:** Gamification elements such as points, leaderboards, and challenges in Quizizz increase students' intrinsic and extrinsic motivation, creating a more dynamic and enjoyable learning environment. This is in line with previous studies showing that interactive and game-based features increase student engagement and motivation (Chaiyo Yanawut, 2017; Yudha & Mandasari, 2021)
- b. **Instant Feedback:** The instant feedback feature allows students to immediately identify their mistakes, accelerating the learning process and improving vocabulary comprehension.
- c. **Suitability for Students' Psychological Characteristics:** Interactive and game-based learning methods are highly effective for junior high school students, as they can attract their attention and increase their engagement.
- d. **Technology Integration:** The use of Quizizz is in line with the demands of digital literacy and 21st-century learning skills, making learning more relevant and modern.

The validity of the results comparison was guaranteed by the normality of the post-test data and the homogeneity of variance between groups, despite the fact that the pre-test data were not normally distributed. The treatment group's more consistent and substantial improvement demonstrates that Quizizz is not only effective for high-achieving students, but also assists students with lower abilities in enhancing their performance.

Overall, the results of this study provide strong empirical evidence that interactive quiz-based digital learning media such as Quizizz can significantly improve English learning outcomes, particularly in vocabulary mastery. These findings underscore the importance of developing new and engaging teaching methodologies and provide a basis for future research on the integration of technology in education.

Discussion

The findings of this research indicate that Quizizz is an effective method for enhancing vocabulary proficiency among students, particularly those in the seventh grade at SMPN 14 Semarang. This effectiveness is consistent with previous research, which has highlighted the role of digital gamification in increasing learner engagement and outcomes (Agustin, 2022; Harahap, 2024; Hasan Parinduri, 2023). Quizizz not only significantly improved students' scores, but it also made learning more enjoyable and interactive. This is consistent with the claims of (Nation, 2013) and (Schmitt, 2000) that effective vocabulary learning necessitates repeated exposure and meaningful practice, which Quizizz successfully facilitates with its interactive quizzes and instant feedback.

One important aspect influencing the success of Quizizz is its gamification design. By incorporating points, leaderboards, and competition, the platform motivates students both intrinsically and extrinsically. This condition resonates with (Yudha & Mandasari, 2021), who state that game-based learning can reduce monotony and sustain learners' attention in language learning. The engaging nature of Quizizz makes vocabulary learning less burdensome, transforming it into an enjoyable experience that fosters active participation.

Furthermore, Quizizz's real-time feedback is essential for improving the learning process. The retention process is expedited by the ability of students to immediately identify and rectify their errors. This discovery is consistent with the assertion of (Blachowicz, 2008), who contends that students' comprehension of vocabulary is significantly enhanced by receiving timely feedback. The experimental group's enhancement in vocabulary mastery in this study can be attributed to the integration of gamified learning activities and instant feedback.

Additionally, the effectiveness of Quizizz is further enhanced by its compatibility with the psychological traits of middle school students. Quizizz is an appropriate tool for capturing the interest of students at this age level,

as they have a natural inclination toward play-based and interactive activities. The results of this study confirm that Quizizz not only enhances scores but also positively impacts learners' motivation, as suggested by (Chaiyo Yanawut, 2017). They discovered that students perceive platforms such as Kahoot and Quizizz as highly engaging classroom response systems.

Finally, the integration of Quizizz reflects the demands of 21st-century education, which emphasizes the importance of digital literacy and technological competence. The use of this platform provides students with valuable exposure to digital tools, preparing them for future academic and

professional challenges. As (Mark Warschauer and Carla Meskill, 2000) argue, technology integration is no longer optional but essential in modern language education. The experience of SMPN 14 Semarang shows that combining technology with pedagogy not only supports vocabulary learning but also develops students' broader digital competencies.

In conclusion, the discussion emphasizes that Quizizz's effectiveness is supported by its gamification features, immediate feedback, suitability for adolescent learners, and alignment with modern educational requirements. These results serve to substantiate the expanding body of literature regarding the function of gamified digital platforms in language acquisition. Consequently, Quizizz can be regarded as a superior alternative to conventional teaching methods in the Indonesian junior high school context, as it enhances vocabulary mastery.

Conclusion

This research offers conclusive evidence that Quizizz is an effective platform for improving the English vocabulary proficiency of seventh-grade students at SMPN 14 Semarang. The experimental group showed greater improvement than the control group, supported by statistically significant results, which demonstrates the strength of gamified learning compared to conventional methods. The key factors that made Quizizz effective include its gamification features, instant feedback, and alignment with the learning characteristics of middle school students, as well as its contribution to digital literacy.

However, the study has several limitations. It was conducted in a single school with a limited number of participants, and the treatment period was relatively short. These limitations restrict the generalizability of the results and fail to account for the long-term influence of Quizizz on vocabulary retention. Based on these limitations, future research should involve larger and more diverse samples, longer intervention periods, and the use of qualitative methods to explore students' perceptions and experiences more deeply. Quizizz can be implemented as an innovative approach to enhance the effectiveness and engagement of vocabulary acquisition in schools and classrooms. For curriculum developers and policymakers, this research highlights the importance of integrating digital tools into language teaching to meet the demands of 21st-century education.

In summary, Quizizz is not only a reliable tool for enhancing vocabulary mastery but also a meaningful innovation that combines learning achievement with motivation and digital skills, ensuring that students are better prepared for the challenges of modern education.

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