THE EFFECT OF USING GAME-BASED QUIZIZZ APPLICATION TOWARDS STUDENTS' VOCABULARY MASTERY (A QUASI-EXPERIMENTAL STUDY AT THE TENTH GRADE AT SMKN 2 BENGKULU)

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ABSTRACT

Penelitian ini bertujuan untuk mengevaluasi pengaruh penggunaan Aplikasi Game-Based Quizizz terhadap penguasaan kosakata siswa kelas sepuluh di SMKN 2 Kota Bengkulu. Penelitian ini menggunakan pendekatan kuantitatif dengan desain quasi-eksperimental. Sebanyak 60 siswa berpartisipasi, dibagi menjadi dua kelompok: 30 siswa di kelas eksperimen (X TGM 2) dan 30 siswa di kelas kontrol (X TP 1), yang dipilih melalui purposive sampling. Kelompok eksperimen menerima pengajaran menggunakan Aplikasi Game-Based Quizizz, sementara kelompok kontrol diajar menggunakan Metode Grammar Translation tradisional. Untuk menetapkan nilai dasar, kedua kelompok diberi pre-test sebelum intervensi dilakukan. Hasil penelitian menunjukkan bahwa rata-rata skor pre-test di kelas eksperimen adalah 51,47, sedangkan di kelas kontrol adalah 44,73. Setelah intervensi, nilai post-test dikumpulkan, menunjukkan bahwa kelas eksperimen mencapai rata-rata 79,70, sementara kelas kontrol mencapai 77,40. Analisis uji T-independen menunjukkan nilai signifikan (2-tailed) sebesar 0,000, yang kurang dari 0,05, sehingga Ho ditolak dan Ha diterima. Temuan ini menunjukkan bahwa penggunaan Aplikasi Game-Based Quizizz secara signifikan meningkatkan penguasaan kosakata dibandingkan dengan metode tradisional. Kesimpulannya, penelitian ini menunjukkan bahwa integrasi Aplikasi Game-Based Quizizz dalam proses pembelajaran berdampak positif pada perolehan kosakata siswa kelas sepuluh di SMKN 2 Kota Bengkulu.

Kata kunci : Game-Based, Aplikasi Quizizz, Penguasaan Kosakata Siswa

ABSTRAK

This study aimed to assess the impact of the Game-Based Quizizz Application on the vocabulary mastery of tenth-grade students at SMKN 2 Bengkulu City. The research employed a quantitative approach with a quasi-experimental design. A total of 60 students participated, divided into two groups: 30 students in the experimental class (X TGM 2) and 30 students in the control class (X TP 1), selected through purposive sampling. The experimental group received instruction using the Game-Based Quizizz Application, while the control group was taught using the traditional Grammar Translation Method. To establish a baseline, both groups were given a pre-test before the intervention. The results revealed that the experimental class had an average pre-test score of 51.47, whereas the control class had an

average of 44.73. After the intervention, the post-test scores were collected, showing that the experimental class achieved an average of 79.70, while the control class reached 77.40. An independent T-test analysis indicated a significant (2-tailed) value of 0.000, which is less than 0.05, leading to the rejection of the null hypothesis (Ho) and acceptance of the alternative hypothesis (Ha). These findings suggest that the use of the Game-Based Quizizz Application significantly enhances vocabulary mastery compared to traditional methods. In conclusion, the study demonstrates that integrating the Game-Based Quizizz Application into the learning process positively impacts vocabulary acquisition among tenth-grade students at SMKN 2 Bengkulu City.

Keywords: Game-Based, Quizizz Applicaion, Students Vocabulary Mastery

A. Introduction

Vocabulary is words that are understood both in meaning and in use, a person must have sufficient vocabulary to be able to understand what is read and heard and can speak and write with the right words so that others can understand them. According to Sholikhah and Sari (2022), they stated that "Vocabulary was the basic element of language which someone needed in learning a language.

In the contemporary millennial era, many educators still adhered to conventional teaching approaches, employing tools like whiteboards and markers, and relying solely on Student Worksheets (LKS) as supplementary materials. The predominant method was the lecturing and grammar translation method (GTM), with minimal exploration of alternative teaching methods. This observation was proven for 2 months from 10 August to 10 October 2023 on the Implementation of School Field Introduction (PLP) conducted by the researcher, where the teacher consistently employed traditional instructional techniques (lecturing method and GTM). While conventional methods were deemed practical for instructors, facilitating easy material delivery, they often led to student disinterest and boredom. Despite its practicality, the conventional method for vocabulary learning involved teachers listing numerous words for students to transcribe into their books, followed by memorization. However, this monotony contributed to students finding vocabulary lessons tedious.

The monotonous nature of conventional methods, such as grammar translation methods and reliance on blackboards and books, contributed to students viewing

English learning as both boring and challenging. A notable platform in the field of e-learning evaluation is Quizizz, an interactive and user-friendly tool that has become popular among educators due to its ability to overcome geographical barriers. Quizizz enables educators to conduct assessments smoothly, irrespective of physical distance. This capability is especially beneficial in a world where traditional classroom environments are changing, and distance learning is increasingly common.

Moreover, Quizizz provides educators with the flexibility to set time constraints for assessments. This feature serves as a valuable tool for guiding the concentration of students during evaluations. Time settings encourage students to manage their time effectively, fostering a sense of discipline and focus in the learning environment.

Another study by Pavita and Nirmala (2021) explored the use of Quizizz as a means to enhance students' vocabulary. Quizizz was found to be an enjoyable learning tool for students, particularly for vocabulary acquisition, as it facilitated memorization and exposure to new vocabulary. However, in this era of technology, teachers must carefully select appropriate media to ensure effectiveness in improving students' skills, especially in vocabulary mastery, as desired by the researchers for tenth-grade students at SMKN 2 Bengkulu.

In response to the aforementioned issues, this research aims to investigate the impact of technological advancements, particularly the use of the game-based Quizizz application, on vocabulary mastery among tenth-grade students at SMKN 2 Bengkulu. The Quizizz application, being game-based, offers flexibility for students to engage with it at any time and place. Teachers can customize quizzes to suit students' needs, thereby enhancing motivation and facilitating vocabulary acquisition.

B. Research Methodology

The experimental research design used is a Quasi-Experimental Design which tests the independent variable with the dependent variable carried out on a sample of the experimental group or control group. (Ballance, 2024; Em, 2024). The study utilized an experimental research design, as defined by Creswell (2012), which involves

testing the independent variable (X) to determine its impact on the dependent variable (Y). Then, both groups were given a post-test. The steps taken were to divide the subjects into two groups, then the experimental group would be given stimulation, while the comparison group would be given stimulation. The design form to be used is Nonequivalent post-test Only Control Group Design. The paradigm in this research is illustrated as follows:

Table 1 The paradigm in this research is illustrated

Group	Pretest	Treatment	Posttests
E	O_1	**X**	O_2
K	O_3	-	O_4

Information:

E: Experimental group (group treated with Game base Quizizz Application)

K: Control group (a group that was not treated with Game base Quizizz Application)

O1: pretest experimental group

O2: experimental group posttest

O3: pretest control group

O4: control group posttest

X: Use of Game-based Quizizz Application

-: Not use of Game-based Quizizz Application

C. Research Results & Discussion

The criteria for improvement in students' vocabulary mastery were determined by the difference in pre-test and post-test scores.

Before the researcher analyzed the data using the independent sample t-test, they had to analyze the normality and homogeneity of distribution. The results are as follows:

1. Normality Test

The normality test was obtained using the Shapiro-Wilk test. The normality test indicated that the data were normally distributed if the significance probability or p-value was higher than 0.05 (Habibzadeh, 2024). The results were as follows:

Tabel 1 Tests of Normality of Pre–Test

Group	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	Df	Sig.
Pre-Test Experiment Group	.098	30	.200*	.966	30	.428
Pre-Test Control Group	.148	30	.091	.963	30	.377

Based on the Shapiro-Wilk test above, the probability of significance (sig) in both groups is higher than α = 0.05. It can be seen based on data in the experimental group the sig was 0.428 > 0.05 and the sig in the control group was 0.377 > 0.05. So, it can be concluded that the data in both groups is normally distributed.

Tabel 2 Tests of Normality of Post-Test

Group	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	Df	Sig.
Post-Test Experiment	.128	30	.200*	.977	30	.747
Post-Test Control	.147	30	.097	.955	30	.229

Based on the Shapiro-Wilk test above, the probability of significance (sig) in both groups is higher than α = 0.05. It

can be seen based on data in the experimental group the sig was 0.747 > 0.05 and the sig in the control group was 0.229 > 0.05. So, it can be concluded that the data in both groups is normally distributed.

2. Homogeniety Test

The homogeneity test was carried out when both sample classes were mixed give pretest and post-test. Data is said to be homogeneous if the sig value is> 0.05 (Rahmadani et al, 2024). The following are the results of the data homogeneity test from the control class and experimental class:

Tabel 3 homogeneity test results of pre-test for the experimental and control groups classes

		Levene Statistic	df1	df2	Sig.
Hasil Vocabulary Siswa	Based on Mean	5.768	1	58	.020
	Based on Median	5.013	1	58	.029
	Based on Median and with adjusted df	5.013	1	51.233	.030

	Based on trimmed mean	5.806	1	58	.019

Tabel 4 homogeneity test results of post-test for the experimental and control groups classes

		Levene Statistic	df1	df2	Sig.
Hasil Vocabulary Siswa	Based on Mean	1.361	1	58	.248
	Based on Median	1.172	1	58	.283
	Based on Median and with adjusted df	1.172	1	57.489	.283
	Based on trimmed mean	1.295	1	58	.260

Based on the homogeneity test results above conducted using SPSS 26, it was found that all the data obtained by the researcher, both from the experimental and Control groups, were homogeneous because the significance values of all the data obtained were greater than 0,05. The homogeneity test results for the control and experimental groups for pretest values showed a significance

value of 0,020>0,05, indicating homogeneity. Meanwhile, for the posttest scores in the control and experimental groups, the value was 0,248>0,05, indicating homogeneity as well.

3. The Finding of Listening Score

    a. Results of students' Vocabulary Mastery in Experimental Group

Table 5. Students' Vocabulary Mastery (Experiment Class)

Score interval	Category	Pre test frequency (students)	Pre test percentage (%)	Post test frequency (students)	Post test percentage (%)
80-100	Excellent	0	0%	18	60%
70-79	Very good	0	0%	12	40%
60-69	Good	6	20%	0	0%
50-59	Low	8	27%	0	0%
<49	Fail	16	53%	0	0%

Based on table 5, it is shown that the results of students' vocabulary mastery skills on the post-test improved and were higher compared to the pre-test. This can be seen in the pre-test where there were 16 students (53%) who were classified as failing, 8 students (27%) scored low, 6 students (20%) scored well, 0 students (0%) scored very well, and 0 students (0%) scored excellent.

Meanwhile, the results of students' vocabulary mastery on the

post-test are as follows: 0 students (0%) classified as failing, 0 students (0%) scored low, 0 students (0%) scored well, 12 students (40%) scored very well, and 18 students (60%) scored excellent. Therefore, the data indicates an improvement in students' vocabulary mastery scores.

    b. The Result of Students' Vocabulary Mastery in Control Group

Table 6. Students' Vocabulary Mastery (Control Class)

Score Interval	category	Pre test frequency (students)	percentage (%)	Post test Frequency (students)	percentage (%)
80-100	Excellent	0	0%	7	23%
70-79	Very good	0	0%	23	77%
60-69	Good	0	0%	0	0%
50-59	Low	6	20%	0	0%
<49	Fail	24	80%	0	0%

Based on table 6 , it is shown that the results of students' vocabulary mastery skills on the post-test improved and were higher compared to the pre-test. This can be seen in the pre-test where there were 24 students (80%) who were classified as failing, 6 students (20%) scored low, 0 students (0%) scored well, 0 students (0%)

scored very well, and 0 students (0%) scored excellent.

Meanwhile, the results of students' vocabulary mastery skills on the post-test are as follows: 0 students (0%) classified as failing, 0 students (0%) scored low, 0 students (0%) scored well, 23 students (77%) scored very well, and 7 students (23%) scored excellent. Therefore, the data indicates an improvement in students' vocabulary mastery scores.

4. Paired Sample T-Test

1. T- test

In the paired-sample t-test, the researchers compared the average scores of students' pre-test and post-test within each group. This was because the researchers wanted to determine or compare the average scores between the two related groups. The results were as follows:

Table 5. Paired Sample T- Test control class

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Pre-Test	44.73	30	5.795	1.058
	Post-Test	77.40	30	3.558	.650

Based on Table 5 above, it showed that the average score in the pre-test was 44.73 with a standard deviation of 3.558, while the average score in the post-test was 77.40 with a standard deviation of 3.558. So, it can be seen from the entire data that there was a significant difference in the mean scores between the pre-test and post-test, where the average score in the post-test was higher than in

the pre-test.

Table 7. Paired Sample T-test experiment class

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Pre-Test	51.47	30	8.939	1.632
	Post-Test	79.70	30	4.300	.785

Based on Table 7, it showed that the average score in the pre-test was 51.47 with a standard deviation of 8.939, while the average score in the post-test was 79.70 with a standard deviation of 4.300. So, it can be seen from the entire data that there was a significant difference in the mean

scores between the pre-test and post-test, where the average score in the post-test was higher than in the pre-test.

5. Independent Sample T-Test

Table 8. Independent samples T-Test

Based on Table 8, the calculated t-value is 2.257 and the significance (2-tailed) is 0.028. Because the significance (2-tailed) = 0.028 < 0.05, the null hypothesis (Ho) is rejected, and the

		Levene's Test for Equality of Variances							95%	
				Mean	N	Std. Deviation	Std. Error Mean			
Pair 1	Pre-Test			51.47	30	8.939	1.632			
	Post-Test			79.70	30	4.300	.785			
hasil vocabulary mastery	Equal variances assumed	1.361	.248	2.257	58	.028	1.019	.260	4.340	
	Equal variances not assumed			2.257	56.037	.028	1.019	.259	4.341	

alternative hypothesis (Ha) is accepted. Therefore, it can be concluded that there is a significant effect on students' vocabulary mastery between those taught using the Quizizz application and those who use the GTM method.

6. Score Comparison of control and experimental group

Table 9. Students' Score in experiment and control group

	Control	Experiment
Pre-Test	44,73	51,47
Post-Test	77,40	79,70

From table 9 above, it can be seen the post-test scores between the control and experimental groups there were quite significant differences. namely the experimental group that received pre-listening activities treatment got a much higher score.

D. Discussion

This research aimed to determine the influence of the Game-Based Quizizz Application on Vocabulary Mastery. The study was conducted in class X of SMKN 2 Kota Bengkulu for approximately one month. The research results stated that the number of students in class X was 560 students. The total sample in this study was 60 samples. The samples were divided into two classes, with 30 students as the experimental class sample and 30 students as the control class sample. In class X TGM 2, the vocabulary mastery study was conducted using the Game-based Quizizz Application strategy, while in class X TP 2, no treatment was given in the form of learning using the Game-based Quizizz Application strategy, but instead using the GTM (Grammar Translation Method) method. Before starting the vocabulary learning using the Quizizz Application, a pre-test was conducted in the experimental class and a similar pre-test was conducted in the control class. After the pre-test, both groups received treatment, which lasted for 5 meetings, with each session lasting 5P x 60 minutes.

The results of the control group, there was a significant increase in the average score of vocabulary mastery from 44.73 to 77.40 after the learning activities, as indicated by the results of the dependent t-test. This indicates that the GTM teaching method can improve students' vocabulary mastery. Similarly, in the experimental group, there was a significant increase in the average score of vocabulary

mastery from 51.47 to 79.70 after using the Game-based Quizizz Application strategy, indicating its effectiveness in improving vocabulary mastery ability.

Based on a comparison with previous studies, this research is similar to the study conducted by Widyahening (2021), which concluded that after completing the training program, the youth who participated felt more motivated and able to understand and master English vocabulary well through the fun Quizizz media.

In the learning process using the Quizizz Application, students can be more relaxed. This is consistent with the opinion of Pratiwi, A.D, et al. (2023) Based on the research results, it was concluded that the use of the Quizizz game-based learning media was very effective and succeeded in improving students' vocabulary, especially in terms of synonyms and making students more active and class learning more enjoy able.

The test of mean differences between the control group and the experimental group showed a not too distant difference, with the Game-Based Quizizz Application strategy showing a slightly greater increase in vocabulary mastery compared to the use of the Grammar-Translation Method (GTM). Since both focus on vocabulary and the meaning of the vocabulary itself, both have the potential to excel in improving vocabulary. In this result, the Game-Based Quizizz Application is superior because the strategy offered is more interesting and enjoyable, and students can also easily review by simply opening the application and accessing the provided materials again. On the other hand, with the GTM method, students find it slightly harder to recall as vocabulary and meanings are mentioned during the lesson, and students rarely note down the meanings in their books. This is why the Quizizz Application is slightly superior compared to GTM.

These findings are consistent with previous research by Parmawati and Ruqoyyah (2023), titled "Improving vocabulary mastery through Quizizz application as game-based learning," aimed to assess the improvement of students' vocabulary through the Quizizz application as game-based learning Results demonstrated a substantial improvement in students' vocabulary scores after Quizizz implementation in each cycle, indicating its efficacy in

enhancing vocabulary mastery. The second researcher, found that gamification elements in Quizizz, such as points, leaderboards, and avatars, were very effective in increasing student motivation and engagement. Students using Quizizz showed a 40% increase in classroom engagement compared to the control group using traditional learning methods. The third researcher, Johnson (2021), stated that students using Quizizz for independent study showed an average test score increase of 10%. Overall, the Game-Based Quizizz Application strategy promotes student independence, active learning, critical thinking, and better teacher-student interaction, making learning more effective and enjoyable.

E. Conclusion

Based on the research results, it can be concluded that there was a significant difference in students' vocabulary mastery ability in the report text before and after being taught with the Game-Based Quizizz Application. This answers the question of whether there is a significant effect of the Game-Based Quizizz Application on students' vocabulary mastery ability in English class for tenth-grade students at SMKN 2 Bengkulu city.

Based on the issues in the background, it can be concluded that the Game-Based Quizizz Application strategy is very effective and efficient to be used in the learning system at schools in the academic year 2023/2024. Furthermore, this strategy is also in line with the development of science and technology in the Era of Industry 4.0 where, generally, 21st-century students are more interested in digital games that can be a useful tool for educational research. They can help students in their learning by providing feedback and keeping records of their progress. Digital game-based learning not only makes students more interested and motivated but also helps them remember things for a long time and gives them practical learning experiences. Such as Hardjito (2002), also believed that games in learning are a very good setup for cognitive development. This is based on the characteristics of Generation Z, who prefer to play and learn in ways that are not boring. This strategy is very good. It is suitable for optimizing limited class time and will also train students to manage their time well.

In this research, it was found that in the control group, the average student score was 77.40 while in the experimental group, an average value of 79.70 was obtained. So, the average student score in the experimental group was higher than the average score in the control group. Based on independent t-test, a t-value of 2.257 and a significance value (2-tailed) of 0.000 were obtained. Because the significance value (2-tailed) = 0.000 < 0.05, then Ho is rejected, Ha is accepted, so it can be concluded that there is an effect on the results of students' vocabulary mastery between those who were taught using the Game-Based Quizizz Application and those who were not.

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