

THE EFFECT OF QUIZIZZ ON ENGLISH ACHIEVEMENT OF TENTH GRADE EFL STUDENTS

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ABSTRAK

Penelitian ini bertujuan untuk mengetahui pengaruh SMA Negeri 1 Singaraja terhadap kinerja bahasa Inggris di kelas 10 saat menggunakan aplikasi Quizizz. Metode pengumpulan data dalam penelitian ini menggunakan pertanyaan pilihan ganda yang terdiri dari 19 pertanyaan. Data yang diperoleh menunjukkan nilai untuk kelompok eksperimen ($M = 84,51$, $p\text{-value} = 0,012$) dan kelompok kontrol ($M = 78,16$, $p\text{-value} = 0,012$). Berdasarkan data yang diperoleh diketahui bahwa nilai rata-rata kelompok eksperimen lebih besar dari nilai rata-rata kelompok kontrol. Membandingkan skor rata-rata dari kelompok kontrol dan eksperimen, didukung oleh nilai signifikansi 0,012, menunjukkan bahwa Quizizz mempengaruhi kinerja bahasa Inggris siswa.

ABSTRACT

The purpose of this study is to find out the impact of State 1 Singapore High School on English performance in class 10 when using Quizizz applications. The data collection method in this study uses a double choice question consisting of 19 questions. Data obtained show values for experimental groups ($M = 84.51$, $p\text{-value} = 0.012$) and control groups ($M = 78.16$, $p\text{-value} = 0.012$). Based on the data obtained it is known that the average value of the experimental groups is greater than the average value of the control groups. Comparing the average score of the control and experiment groups, supported by the significance value of 0.012, suggests that Quizizz affects the performance of English students.

1. Introduction

Indonesia is one of the countries that does not use English as a colloquial or formal language (non-English speaking country). Therefore, English is taught as a foreign language (TEFL) in Indonesia. Yudiastini Astuti (2018) argued that English had been accepted as a foreign language in Indonesia since 1945, and in 1967 the Indonesian Government designated English as a foreign language used for academic purposes. The constitution of Indonesia, Undang – undang No. 20 Tahun 2003 Bab VII Pasal 33, also supported teaching English as a foreign language in Indonesia. It states that foreign languages are used as instruction in specific educational settings to improve students' foreign language skills.

However, even though English has been taught in Indonesia for a long time, learning English for most Indonesian students is still an issue due to ineffective teaching techniques. Wibisono (2012) argued that teachers' conventional teaching methods used when delivering the material could cause boredom for students, decreasing student motivation and involvement in learning English. In general, traditional teaching methods were considered monotonous and less attractive because they have a fixed learning structure that makes students less involved and interacting in the learning process, so they become unmotivated, creative, and innovative (Lamrani & Abdelwahed, 2020). Therefore the teacher needs to change their teaching technique and implement more creative and innovative teaching media.

Technological advances are developing rapidly in the 21st century. Every aspect of human social life, including education, is technology-oriented. Sarica & Cavus (2009) in Priyanti et al. (2019) stated that technology has become a trend in the post-millennial era and has automatically entered the daily routine of the post-millennial generation, such as social interactions, economic, lifestyle, and education. In addition, today's students are also digital users who could not be separated from technology. Therefore, teachers must involve technology in their teaching techniques and use technology as a teaching medium. according to Santosa (2017), teachers must integrate technology into the classroom teaching and learning activities to meet the needs of generation Z's students who could not live without technology.

One of the teaching techniques that involved the use of technology is Gamification. By taking advantage of technological advances, Gamification uses game mechanisms to transform a less practical educational experience into an effective learning process that supports learners in achieving their learning goals and objectives (Lamrani & Abdelwahed, 2020). Barata et al. (2013) define Gamification as a new teaching technique that employs game components in a non-game context that invites students to solve a problem. A number of gamification applications could be used by teachers in the teaching and learning process, namely Kahoot!, Quizizz, FlipQuiz, Duolingo, and many more. The current study focused on implementing Quizizz as a learning medium to improve students' English achievement.

Quizizz is a digital platform that provides various types of quizzes that can be accessed using smartphones, personal computers, iPad, and tablets. According to Nanda et al. (2018), Quizizz is a fun multiplayer gamification software that enables teachers to create exciting teaching and learning activities for students. Likewise, Abdullah et al. (2019) suggested that Quizizz was a costless e-learning device that teachers and students could access from smartphones, computers, and other mobile devices. Quizizz was widely used by teachers and learning instructors because it positively affects students' language learning. Pitoyo et al. (2020) stated that students in classes who were taught using Quizizz felt more motivated to learn and want to know more after being given several tests using Quizizz. Chaiyo & Nokham (2017) also argue that students show positive responses when the teacher assigned a quiz using the Quizizz software.

One of the studies that used Quizizz to increase student learning motivation, which impacted students' grammar mastery in tertiary institutions, was conducted by Dewi et al. (2020). This study's objective was to determine the effect of the Mobile-Assisted Language Learning (MALL) strategy through the Quizizz platform on students' grammar mastery. This study indicated that the MALL strategy through Quizizz was relevant for grammar learning because the experimental students' mean scores were higher than those in the control group. This result was also supported by the considerable effect size value of 0.92.

Due to the significant result of the above research, the researcher decided to conduct specific research to investigate the considerable effect of Quizizz as a teaching and learning media on the English achievement of the tenth-grade EFL students. Unlike the previous research conducted in higher education which involved 4th-semester students of English Language Education UNDIKSHA, the current study was conducted in SMA Negeri 1 Singaraja involving 10th-grade students. Compared to the previous research, which utilized Quizizz to teach grammar, this research uses Quizizz to teach English in general because, in high school, English grammar does not have a particular subject. Since grammar is a part of learning

English, the current study's gap investigates the effect of Quizizz on tenth-grade EFL students' English achievement.

This research needs to be done to determine whether the application of Quizizz in learning English in secondary schools, especially in the tenth grade, can encourage and motivate students to perform better, especially during pandemics where students are required to learn from home. The curiosity of applying Quizizz in tenth grade in the context of learning English led researchers to conduct research entitled "The Effect of Quizizz on Learning English for Tenth Grade EFL Students."

2. Method

The objective of the present study was to investigate the significant effect of Quizizz on the English achievement of tenth-grade students of SMA Negeri 1 Singaraja in the academic year 2020/2021. Therefore, by considering this research's objective, the researcher decided to use a quasi-experimental utilizing a post-test-only control group as the research design. Gay et al. (2012) stated that quasi-experimental has an intermediate degree of controlling threats to validity because it was better than pre-experimental design, but it was not as excellent as true experimental design. Furthermore, according to Ary et al. (2010), the post-test-only control group design was the most straightforward experimental design, yet it was the most powerful one. The implementation of the post-test control group design was slightly similar to the pre and post-test design, but in this design, the pre-test was omitted (Gay et al., 2012). In this design, after the subjects are grouped, the experimental group receives treatment by being taught using a gamified platform called Quizizz.

Meanwhile, the control group was not taught using Quizizz but through small group discussions and questions and answers with the teacher. Then, after receiving treatment, the two groups were assessed using a similar test, and their scores were compared to see the effect (Ary et al., 2010). The treatment model given to the experiment and control group is as follows:

Table 1. Posttest-Only Control Group Design adapted from Ary et al. (2010)

Types of Group	Treatment (Independent Variable)	Post-test
Experimental Group (E)	X	Y_2
Control Group (C)	-	Y_2

Notes:

X = Treatment

Y_2 = Post-test

According to the above table, quasi-experimental research with a post-test-only control group design consists of two stages: treatment and post-test. The treatments are marked with X, and the post-test is marked with Y_2 .

The research was conducted at a public school located in the urban area of Singaraja, namely SMA Negeri 1 Singaraja. The population of this study was all tenth-grade students of SMA Negeri 1 Singaraja, totaling 366 students divided into 11 classes. To determine the research sample, the researcher used the cluster random sampling technique. According to Ary et al. (2010), cluster sampling is a probability sampling method that selects all clusters from various clusters in a population. Among the eleven classes, the researcher randomly selects two classes to be the research sample. The two classes selected as samples were X MIPA 4 and 6, where the two classes consisted of 34 students, respectively. Furthermore, by using a lottery, the researcher determined the control group and the experimental group. Students of X MIPA 4 were chosen as the experimental group, while X MIPA 6 was chosen as the control group.

In the present study, the researcher gave six treatments to the control group and the experimental group, and after all the treatment was given, the post-test was assigned. Before the post-test was given to both groups, the researcher must ensure that the test was valid and reliable. Therefore, the research instrument used needs to be tested for its validity and reliability. According to Gay et al. (2012), the measuring instrument used to collect data must be valid and reliable so that the data collected by researchers was valuable. There were two types of validity testing given to the research instrument in this study: content validity and empirical validity.

The content validity in this study was carried out through expert judgment. The researcher asked two expert judges to evaluate and assess the instruments used. The expert judgment results were then measured using the Gregory formula to determine the content validity value. The Gregory formula could be seen below.

$$\text{Content Validity} = \frac{D}{A + B + C + D}$$

On the other hand, the empirical validity was carried out through a try-out test. The try-out test was carried out in another class at SMA Negeri 1 Singaraja, which were at the same level as the sample classes. The class used as a trial class was X MIPA 3, which consists of 35 students. The try-out data were analyzed using Anatest V4.

In this study, the data collection process began with identifying research participants, followed by testing the study sample's normality and homogeneity. Then, the researcher prepared an English test as a research instrument. In preparing for the post-test, the researcher consulted two experts and asked for verification. Before the prepared test was used as a post-test, the researcher tried out the test in another class with the same level as the sample class. After testing the validity and reliability, the control group and the experimental group were treated six times. The experimental group students were taught using Quizizz, while the control group students were taught without Quizizz. Post-test was given to the control group, and the experimental group after all treatments were given. The data obtained from the post-test were analyzed using descriptive and inferential statistical analysis through SPSS 25. The next step was to test the hypothesis and measure the effect size. Finally, after all the tests were carried out, the researcher reported the findings and concluded the research results, whether the implementation of Quizizz had a significant effect on students' English achievement.

An effect size test was carried out to verify how strong the effect provided by Quizizz on students' English achievement. The effect size was considered an appropriate statistical calculation to assess treatment or other independent variables (Ary et al., 2010). Data effect sizes were calculated using an online effect size calculator. The researcher only needs to enter the mean value (M), standard deviation (s), and sample size (N) of the control and experimental groups to be processed using an online effect size calculator.

3. Finding and Discussion

The validity testing was carried out through content and empirical validity. The judgments of the two judges were calculated using the Gregory formula to determine the post-test content validity. The result of the Gregory formula calculation was presented as follows:

Table 2. Gregory Table

		JUDGE I	
JUDGE II	Irrelevant	Irrelevant 0 item	Relevant 0 item
	Relevant	0 item	30 items

$$\text{Content Validity} = 30 / (0 + 0 + 0 + 30) = 30 / 30 = 1$$

To determine the category of content validity results, the level of content validity was described in the table below:

Table 3. The Ratio of Content Validity

Criteria	Category
$0.80 < v \leq 1.00$	Very high
$0.60 < v \leq 0.79$	High
$0.40 < v \leq 0.5$	Moderate
$0.20 < v \leq 0.39$	Low
$0.00 < v \leq 0.19$	Very Low

Based on the content validity analysis using the Gregory formula, the obtained value was 1.00. The value obtained was more significant than 0.7 or 70% ($1 > 0.7$); from these results, it could be assumed that the English post-test content validity had very high validity.

Furthermore, based on empirical validity through a trial test, it was known that of the 30 multiple-choice questions prepared by the researcher, eleven of them were considered invalid because the correlation values were below the significance limit of the correlation coefficient, 0.349. Therefore, only 19 multiple-choice questions were used as the English post-test.

Prior to the t-test, the normality and homogeneity test was carried out first. These preceding tests were carried out to determine whether the data obtained were normally distributed and homogeneous. The normality test was calculated using SPPSS 25 through the Kolmogorov-Smirnov statistic with a significance value of 0.05. The results of the normality test were presented in the table below.

Table 4. Normality Test of Students' Latest English Score

		Tests of Normality					
group		Kolmogorov-Smirnov ^a			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
Posttest	1.00	.119	34	.200*	.969	34	.431
	2.00	.116	34	.200*	.949	34	.118

The normality test of the post-test control and experimental group data presented above showed that the experimental and control groups' significance value was 0.200, respectively. The two groups' significance value was higher than the predetermined significance value of 0.05 (0.200 > 0.05). In conclusion, it was determined that the post-test data of the control and experimental group were in a normal distribution.

After the normality test results proved that the post-test data was in a normal distribution, the researcher carried out a homogeneity test to determine the equality variance of the post-test data. The test data would define as homogeneous if the obtained significance score exceeded the significance value of 0.05. SPSS was used to calculate the homogeneity of the post-test, and the results were presented below.

Table 5. Homogeneity Test of Students' English Score

		Levene Statistic	df1	df2	Sig.
Posttest	Based on Mean	.601	1	66	.441
	Based on Median	.539	1	66	.466
	Based on Median and with adjusted df	.539	1	62.837	.466
	Based on trimmed mean	.608	1	66	.438

The homogeneity test result presented in the table above indicated that the post-test data was homogeneous. The table showed that the post-test significance value was 0.441 based on the mean. Since the significance value obtained, exceed the predetermined significance value of 0.05. Therefore, it was determined that the post-test data were homogeneous.

Furthermore, the researcher calculated the data obtained from the post-test descriptively. Several measurements were carried out in descriptive statistical analysis, namely the mean, median, mode, range, variance, and standard deviation.

Table 6. Descriptive Statistics Analysis

		Control	Experiment
N	Valid	34	34
	Missing	0	0
Mean		78.1694	84.5165
Median		78.94	84.21
Mode		78.94	84.21
Std. Deviation		10.92845	9.24788
Variance		119.431	85.523
Range		42.11	31.58
Minimum		57.89	68.42
Maximum		100.00	100.00
Sum		2657.76	2873.56

Table 6 showed the significant differences in the median, mean, mode, range, deviation, variance, and standard deviation values obtained by the control and experimental groups. The control group obtained scores of (mean = 78.16; median = 78.94; mode = 78.94; Std Deviation = 10.92; variance = 119.431; range = 42.11). While the experimental group scores was (mean = 84.51; median = 84.21; mode = 84.21; Std Deviation = 9.24; variance = 85.523; range = 31.58).

Table 7. Independent Sample T-Test after Treatment

		Independent Samples Test								
		Levene's Test for Equality of Variances			t-test for Equality of Means					
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Post-test	Equal variances assumed	.601	.441	-2.585	66	.012	-6.34706	2.45521	-11.24905	-1.44507
	Equal variances not assumed			-2.585	65.242	.012	-6.34706	2.45521	-11.24905	-1.44507

From table 7, it was known that the F coefficient has a significance value (Sig.) of 0.441, which was more significant than 0.05. This value showed that the sample was homogeneous. Because the sample was homogeneous, the hypothesis calculation results could be seen from the significance value (Sig. 2-tailed) of the t-test. The significance value obtained from the t-test was 0.012, which was less than the significance value of 0.05. The comparison between the t-test significance value and the predetermined significance value was $0.012 < 0.05$. This result inferred that the null hypothesis was firmly rejected, and the alternative hypothesis was accepted. In conclusion, it could be assumed that there was a significant effect of Quizizz application on students English achievement of tenth-grade students of SMA Negeri 1 Singaraja.

Furthermore, the effect size test was also carried out to determine how strong the influence of Quizizz is on students' English achievement. The effect size was considered an appropriate statistical calculation to measure the treatment's influence or independent variables on the dependent variable (Ary et al., 2010). Effect size calculations of the present research were carried out using an online effect size calculator. The calculation of the effect size was presented below:

Group 1		Group 2	
Mean (M):	<input type="text" value="78.1694"/>	Mean (M):	<input type="text" value="84.5165"/>
Standard deviation (s):	<input type="text" value="10.92845"/>	Standard deviation (s):	<input type="text" value="9.24788"/>
Sample size (n):	<input type="text" value="34"/>	Sample size (n):	<input type="text" value="34"/>

$$\text{Cohen's } d = (84.5165 - 78.1694) / 10.1231 = 0.626992.$$

Table 8. The Interpretation of Cohen's d

Cohen's Standard	Effect Size
Large	2.0 - 0.8
Medium	0.7 - 0.5
Small	0.4 - 0.0

According to Cohen's *d* effect size calculation, the obtained effect size was 0.626992. Moreover, based on the table of Cohen's *d* effect size interpretation above, the obtained effect size was classified as medium. Thus, the influence of Quizizz on students' English learning achievement is considered to have a moderate effect.

In this study, X MIPA 4 as the experimental group was taught using Quizizz, while X MIPA 6 was selected as the control group was taught without Quizizz. Both groups were given treatment six times, and at the seventh meeting, a post-test was carried out in the control group and the experimental group.

The post-test results showed a significant effect of the application of Quizizz on the English achievement of the tenth-grade students of SMA Negeri 1 Singaraja. The descriptive statistical analysis results showed that the students in the experimental group taught using Quizizz showed better English achievement than students in the control group taught without Quizizz. From descriptive analysis, the experimental group obtained an average score of 84.51, while the average score of the control group was 78.16. The difference between the mean scores of the two groups was 6.35. This significant difference between the mean scores of the control group and the experimental group showed that the difference in treatment given to the two groups affected students learning outcomes in each group. This finding was supported by Priyanti et al. (2019), who stated that Quizizz effectively improves students' English comprehension, especially in reading. The significant effect was known from the mean scores of the experimental group taught using Quizizz, which was higher than the control group taught without Quizizz.

Inferential statistics also signified significant differences between students taught using Quizizz and conventional learning strategies. The inferential statistical results were obtained by analyzing the independent sample *t*-test, which was calculated using SPSS 25. The significance value obtained from the *t*-test was 0.012. This *t*-test significance value was lower than the alpha significance value of 0.05 because the obtained significance value was less than the alpha significance value ($0.012 < 0.05$), thus the null hypothesis (H_0) was rejected, and the alternative hypothesis (H_a) was accepted.

Since the *t*-test result rejected the null hypothesis, the results and findings of this study confirmed that Quizizz has a significant effect on the English learning achievement of tenth-grade students who attend SMA Negeri 1 Singaraja. The significant effect of the application of Quizizz in improving student achievement was also highlighted by Nanda et al. (2018) that students showed better learning outcomes after being taught using Quizizz because Quizizz provides a fun learning process for students. Another aspect that implements Quizizz could provide a significant positive effect on the student's English achievement was the main feature of Quizizz, namely 'repeat the quiz' that allowed the students to take the quiz repetitively. According to Rahayu & Purnawarman (2019), the "repeat the quiz" feature allowed the players or students to make various attempts to achieve the best score. Through this feature, students could gain learning experience, and then gradually, students could master the material being taught effectively.

After carrying out the *t*-test to determine the significance value of Quizizz on students' English learning achievement, the researcher also conducted an effect size test to determine how strong the application of Quizizz could affect students' English learning achievement. The effect size obtained in this study (0.62) was considered to be medium or moderate. It means that the implementation of Quizizz in English class was not maximal.

The application of Quizizz, which was considered not maximal, was because students were not used in operating Quizizz. In addition, students' technical problems while working on Quizizz due to connection problems also lead to the less optimal application of Quizizz in learning English. This statement was also supported by Darmawan et al. (2020), which used Quizizz to support online assessments in an astronomy course. Darmawan et al. (2020) stated that students' obstacles when they first used Quizizz caused the students' achievement to be less than optimal. In addition, Yulia (2020) argued that one of the problems that appeared when students carried out the online learning process was an unstable connection and a limited internet network in several areas.

Another limitation occurred when the researcher conducted this study was the time limit during the English online learning. Thus, in this study, the learning process was conducted synchronously and asynchronously. The learning process was also carried out asynchronously to overcome the limited time during online learning so that the students could practice and repeated the Quizizz at home.

However, based on the findings and results of current research, it can be concluded that this study was successful because it has achieved the expected results. The results of this study were in line with the results and research theories of other researchers. Dewi et al. (2020) also researched Quizizz, especially regarding the influence of Quizizz on the grammar mastery of fourth-semester university students. The research found that after the students in the experimental group received treatments using Quizizz, there was a significant effect of Quizizz on the students' English mastery, especially grammar. This study also

stated that Quizizz was an appropriate teaching media to use in teaching English because this study revealed that Quizizz has a strong influence in improving the fourth-semester students' grammar mastery.

Also, in line with the current research, the research carried out by Juniarta et al. (2020) used Quizizz to improve the reading comprehension of second-semester students of Ganesha University of Education who took the literal reading subject. The primary objective of this study was to investigate whether the application of Quizizz could increase students' reading comprehension or not. Through this study, the use of Quizizz was found to be effectively encouraging the students to participate during the learning process actively. Then, it was concluded that the application of Quizizz was able to improve students' participation and motivation to study, increasing students' English competency, particularly in reading comprehension.

4. Conclusion

In conclusion, to improve students' English achievement during the online learning process, teachers must apply novel teaching techniques that could motivate students. Gamification using Quizizz was one of the latest teaching techniques highly recommended for online learning. This study found that students taught using Quizizz had better learning achievement than students taught using traditional teaching techniques. Therefore, based on the research findings that have been attained and discussed previously, the results of this study have proven the theory that the application of Quizizz has a significant effect on the English learning achievement of tenth-grade students of SMA Negeri 1 Singaraja.

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