The Effectiveness of Quizizz Application in Teaching Reading Comprehension

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Article Info	Abstract
	Reading comprehension is an important basic skill in English language learning, yet many students find it a difficult and uninteresting activity. This study aims to determine the effectiveness of using the Quizizz application in improving students' reading comprehension skills. This study used a quantitative approach with a pre-experimental design of one-group pretest-posttest type. The samples in this study were 36 grade X students at SMAN 5 Purworejo in the 2024/2025 school year. Data were collected through multiple choice tests given before and after treatment. The treatment was carried out through the use of the Quizizz application as a digital learning media for five meetings. The data were analyzed using the paired sample t-test through the JASP program. The results showed a significant difference between the pre-test and post-test scores, with a significance value of 0.009 (p < 0.05). This finding shows that the use of Quizizz has a positive and significant effect on students' reading comprehension skills. It can be concluded that Quizizz is an effective learning medium, not only as an evaluation tool, but also as a means of presenting reading material in a more interactive and motivating manner. Moreover, these findings contribute to the growing evidence supporting game-based learning tools in EFL reading instruction.

Artikel Info	Abstrak
	Pemahaman membaca merupakan keterampilan dasar yang penting dalam pembelajaran Bahasa Inggris, namun banyak siswa menganggapnya sebagai aktivitas yang sulit dan kurang menarik. Penelitian ini bertujuan untuk mengetahui efektivitas penggunaan aplikasi Quizizz dalam meningkatkan kemampuan pemahaman membaca siswa. Penelitian ini menggunakan pendekatan kuantitatif dengan desain pre-eksperimental tipe one-group pretest-posttest. Sampel dalam penelitian ini adalah 36 siswa kelas X di SMAN 5 Purworejo pada tahun ajaran 2024/2025. Data dikumpulkan melalui tes pilihan ganda yang diberikan sebelum dan sesudah perlakuan. Perlakuan dilakukan melalui penggunaan aplikasi Quizizz sebagai media pembelajaran digital selama lima kali pertemuan. Data dianalisis menggunakan uji paired sample t-test melalui program JASP. Hasil penelitian menunjukkan adanya perbedaan yang signifikan antara skor pre-test dan post-test, dengan nilai signifikansi sebesar 0,009 (p < 0,05). Temuan ini menunjukkan bahwa penggunaan Quizizz memberikan pengaruh positif dan signifikan terhadap kemampuan pemahaman membaca siswa. Dapat disimpulkan bahwa Quizizz merupakan media pembelajaran yang efektif, tidak hanya sebagai alat evaluasi, tetapi juga sebagai sarana penyajian materi bacaan secara lebih interaktif dan memotivasi. Selain itu, temuan ini turut memberikan kontribusi pada semakin banyaknya bukti yang mendukung penggunaan alat pembelajaran berbasis gim dalam pengajaran membaca Bahasa Inggris sebagai bahasa asing (EFL).

I. INTRODUCTION

In this era of globalization, English has an important role as an international language that is widely used in various aspects of life (Andayani, 2022), such as education, technology, economy, and cross-country communication. Therefore, mastering English is an essential need for every individual. In Indonesia, English is taught in schools as a foreign language, so its learning is included in the context of English as a Foreign Language (EFL).

In learning English, there are four basic skills that must be mastered by students, namely listening, speaking, reading and writing. Among the four skills, reading is often considered as the most boring and difficult skill for students to understand.

The act of "reading" can be defined as the cognitive process of deriving meaning from written text (Tojiboyev Isaqjon, 2022), it requires concentration and comprehension of texts that are often long and complex, so it is considered a burden by most EFL students.

Seeing these conditions, educators are required to find various teaching and learning strategies that can help students understand reading material in a more interesting and less boring way. Teaching is essentially a cognitive practice characterized by complexity and ongoing decision-making at multiple stages, including planning, interactive engagement during learning, and analysis after learning (Lepp *et al.*, 2021). Meanwhile, learning is understood as the process of understanding, acquiring knowledge, or constructing understanding gained through practice or experience (Olson and Ramirez, 2020).

In learning, applying the right strategies is essential to create an effective learning process, as good learning is characterized by the creation of positive emotions, the use of multimodal approaches, collaboration, and the connection of material with students' personal experiences (Hadjipanteli, 2023). In line with that, technology integration in the classroom is one of the promising approaches to support a more interactive, engaging and student-centered learning experience.

Technological developments in the field of education have given rise to many interactive applications that teachers can use to deliver materials effectively. One approach in language learning technology is *Mobile-Assisted Language Learning (MALL)*, it refers to the integration of various mobile technologies to support and accelerate the process of language learning(Rajendran and Md Yunus, 2021). An example of MALL implementation in reading instruction is the use of the Quizizz application.

Quizizz is an educational platform that utilizes a gamification approach to make learning more engaging and interactive (Callista Anak Yunus & Kim Hua, 2021; Salsabila et al., 2020). It enables teachers to create digital quizzes and deliver material in a fun and competitive manner, which aligns with the learning preferences of today's digital generation (Pradnyadewi & Kristiani, 2021). In the context of English language learning, particularly in reading comprehension, Quizizz helps students interact with texts more actively and enjoyably.

Based on this background, it is important to examine how previous research has discussed the use of technology in education, particularly regarding the use of Quizizz.

A study conducted by (Pahamzah *et al.*, 2020) reported that using Quizizz as a teaching aid received positive feedback from students and increased their enthusiasm in the learning process. Meanwhile, research by (Citra and Rosy, 2020) showed that using Quizizz-based media could improve students' learning outcomes in Information and Communication Technology (ICT) learning in tenth grade. Similar results were found in a study by (Putra, 2023), which concluded that Quizizz could enhance students' English vocabulary mastery. Moreover, students became more interested, motivated, enthusiastic, and active in the learning process.

From the teacher's perspective, the perception of using the Quizizz application is also very positive. According to (Lim and Yunus, 2021), Quizizz is considered efficient, easy to use, runs smoothly, and has a motivating effect on students. Therefore, the use of interactive quizzes such as Quizizz in teaching is seen as highly beneficial.

It can be concluded from previous studies that the use of Quizizz as a learning aid has a positive impact on students' motivation, engagement, and learning outcomes. Most studies emphasize the general benefits of using Quizizz in various subjects or specific language learning components, such as vocabulary. Based on these findings, the researcher is encouraged to further explore this topic by conducting a study on the effectiveness of using Quizizz in teaching reading comprehension to senior high school students, particularly the tenth-grade students of SMAN 5 Purworejo.

This research is titled "*The Effectiveness of Quizizz Application in Teaching Reading Comprehension to the Tenth Grade Students of SMAN 5 Purworejo in the Academic Year of 2024/2025.*" Therefore, this study aims to examine the effect of quizizz application on the reading comprehension ability of tenth grade students.

II. METHOD

This study employs a quantitative approach. According to (Balaka, 2022), the quantitative approach is based on the positivist paradigm, aiming to investigate a specific population or sample objectively, measurably, and systematically. Data is collected through research instruments and analyzed using statistical techniques.

The research design used is a pre-experimental design of the one-group pretest-posttest type. This design is not considered a true experiment because it does not involve a control group (Sugiyono, 2016). In this design, a single group of students is given a pre-test, then receives treatment in the form of learning using

the Quizizz application, and finally takes a post-test to evaluate changes in learning outcomes. The design is illustrated as follows:

$$O_1 \rightarrow X \rightarrow O_2$$

Explanation:

O_1: Pre-Test Score

X: Treatment using the Quizizz application

O_2: Post-Test Score

Population refers to a group of individuals who share similar characteristics within a certain environment and is an essential element in research methodology (Willie, 2024). This study's population consisted of all 10th-grade students at SMAN 5 Purworejo, totaling 252 students. The sampling technique used was purposive sampling. According to Margono (2004), purposive sampling is a technique in which participants are selected based on specific characteristics deemed relevant to the research objectives.

The researcher chose this technique because the material relevant to the study had already been taught in that particular class, and it aligned with the research goals. This aligns with Sugiyono's (2016) opinion. Furthermore, access was only granted to one class due to the tight academic calendar of the school. Purposive sampling is also widely used in various research paradigms because it ensures the selection of quality samples without bias and enhances the reliability and trustworthiness of the research findings (Nyimbili and Nyimbili, 2024). From the population, one class consisting of 36 students was selected as the experimental group.

The research was conducted over five meetings in May 2025, with a focus on reading comprehension, covering text types such as descriptive, recount, procedure, and narrative texts. The instrument used was a multiple-choice test consisting of 40 questions, administered before and after the treatment.

This study involves two variables:
1. Independent variable: the use of the Quizizz application in learning
2. Dependent variable: students' reading comprehension ability

The test instrument validation process involved an evaluation by two experts: one English teacher and one lecturer from the English Education programme. According to (Fernández-Gómez *et al.*, 2020), content validity refers to assessments made by experts who are competent and experienced in the relevant field and capable of providing appropriate and relevant feedback.

Moreover Yusup (2018) states that aspects evaluated in content validity include the operational definition of variables, alignment of items with research variables, number of items, answer format, scale used in the instrument, scoring system, instructions for completion, time allocation, suitability for the target population and language aspects. The subsequent revisions and expert evaluation indicated that all test items were appropriate and valid for use in this study

The data were analyzed using the JASP (Jeffrey's Amazing Statistics Program) software with a paired sample t-test to determine whether there was a significant difference between the pre-test and post-test scores. JASP is a free and open-source statistical software developed with support from the University of Amsterdam. The software is designed to be easy to use, making it suitable for users who are familiar with statistical applications such as SPSS (McBride and Garcés-Manzanera, 2024), while (Andirasdini *et al.*, 2025) mentioned JASP is an open-source statistical software that can be accessed for free, providing convenience especially for institutions or individuals with limited financial resources..

Before performing the t-test, the normality of the data was examined using the shapiro-wilk test. A significance value greater than 0.05 indicates that the data are normally distributed.

Therefore, student achievement classification was conducted objectively to determine the level of students' reading proficiency in English (Cain *et al.*, 2022). The achievement categories are detailed as follows:

Table.1 Student Achievement Classification

Value	Grade	Level of Achievement
90-100	A	Excellent
80-89	B	Good
70-79	C	Sufficient
60-69	D	Fairly Sufficient
<60	E	low

This classification is used to observe the shift in students' achievement before and after the treatment, as well as to strengthen the interpretation of the effectiveness of using Quizizz in teaching reading comprehension.

The hypotheses in this study are formulated as follows:

H_0 (Null Hypothesis): There is no significant difference between students' pre-test and post-testscores.

H_a (Alternative Hypothesis): There is a significant difference between the pre-test and post-test scores after learning using the Quizizz application.

III. RESULT AND DISCUSSION
A. Resul

This research was conducted at SMAN 5 Purworejo in the academic year 2024/2025 by using Quizizz media as a learning tool. This study used a descriptive analysis approach which aimed to provide an overview of students' reading skills.

The researcher took one class at level ten consisting of 36 students as the research subject. The pre-test was conducted on May 6, 2025, then continued with the treatment using Quizizz media. After that, the post-test was carried out on May 22, 2025.

The information and data obtained from the pre-test and post-test results were used to evaluate the development of students' reading skills as follows:

Table 2. Pre-test and Post-test Score

Name	Pre-test	Post-test	Name	Pre-test	Post-test
student 1	100	98	student 19	75	85
student 2	57	68	student 20	75	80
student 3	70	83	student 21	40	68
student 4	53	57	student 22	73	60
student 5	75	73	student 23	43	65
student 6	98	100	student 24	43	55
student 7	90	95	student 25	35	53
student 8	75	85	student 26	50	55
student 9	25	30	student 27	55	55
student 10	53	57	student 28	57	65
student 11	70	63	student 29	98	100
student 12	95	98	student 30	80	55
student 13	70	88	student 31	53	75
student 14	80	85	student 32	70	60
student 15	65	78	student 33	63	68
student 16	45	48	student 34	85	80
student 17	73	73	student 35	75	88
student 18	48	40	student 36	75	75

Then the results of the pre test and post test were distributed based on the classification of student achievement according to (cain *et al*, 2022). it was shown in the following table:

**Table 3**. Classification of students' score in Pre-test and Post-test

Value	level of achievement	Pre-test		Post-test	
		Frequency	Percentage	Frequency	Percentage
90-100	Excellent	4	11%	4	11%
80-89	Good	3	8%	8	22%
70-79	sufficient	8	22%	4	11%
60-69	fairly sufficient	2	6%	9	25%
<60	low	19	53%	11	31%
	TOTAL	36	100%	36	100%

The table above shows the results of the pre test and post test of English reading skills that have been carried out by X-2 class students. At the time of the pretest, as many as 4 students were at an excellent level, 3 students at a good level, 8 students at a sufficient level, 2 students at a fairly sufficient level, and 19 students were still at a low level.

Meanwhile, the post test results show an increase in several categories. There are 4 students who remain at an excellent level, 8 students increased to a good level, 4 students at a sufficient level, 9 students at a fairly sufficient level, and the number of low level students decreased to 11 students.

The pre-test and post-test results were described through a bar chart, showing the percentage distribution across achievement levels. It was presented in the following:

Table 4. Pre-test vs Post-test Chart

Comparison of Pre-test and Post-test Achievement Levels (in %)
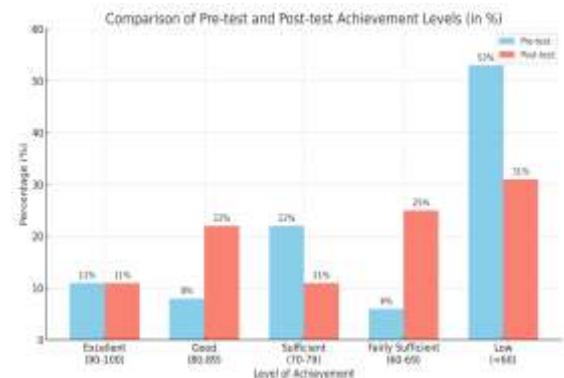
Descriptive statistics are used to provide an overview of students' reading scores before and after treatment, as they are a basic component in any research article and should not be ignored (Fulk, 2023).

These statistics include measures such as mean, median, mode, standard deviation, minimum and maximum scores, and score range. In addition, the Shapiro-Wilk test was conducted to check the normality of data distribution on the pre-test and post-test scores, which is the main requirement before conducting a paired sample t-test. The results of the descriptive statistical analysis and normality test are presented in the following table.

Table 5. Descriptive Statistics and Normality Test Results from JASP Computation

Descriptive Statistics

	Pre-test	post-test
Valid	36	36
Missing	0	0
Mode	75.000ᵃ	55.000ᵃ
Median	70.000	70.500
Mean	66.306	71.139
Std. Deviation	18.682	17.396
Shapiro-Wilk	0.972	0.973
P-value of Shapiro-Wilk	0.494	0.510
Range	75.000	70.000
Minimum	25.000	30.000
Maximum	100.000	100.000

ᵃ The mode is computed assuming that variables are discreet.

Based on the table above, the mean score increased from 66.31 in the pre-test to 71.14 in the post-test. The median values were 70.00 and 70.50 respectively, while the modes were 75.00 and 55.00. The standard deviation decreased slightly from 18.68 to 17.40. The minimum and maximum scores in the pre-test were 25.00 and 100.00, and in the post-test were 30.00 and 100.00, respectively. The score range also narrowed slightly from 75.00 to 70.00.

A normality test using the Shapiro-Wilk method was also conducted to ensure that the data distribution met the assumptions required in the paired sample t-test analysis. The significance value (p-value) in the pre-test was 0.494 and in the post-test was 0.510. Since both values are greater than 0.05, the data is considered normally distributed.

Therefore, a paired sample t-test was conducted to determine whether there was a significant difference between students' scores before and after using the Quizizz application. The results of the paired sample t-test are shown in the following table:

Table 6. Paired Sample T-Test Result of Pre-test and Post-test Scores

Paired Samples T-Test ▼

Measure 1		Measure 2	t	df	p
Pre-test	-	post-test	−2.768	35	0.009

Note. Student's t-test.

Based on the results of the paired sample t test, the value of t = -2.768 was obtained with a degree of freedom (df) of 35 and a significance value (p) of 0.009. Because the p value <0.05, it can be concluded that there is a statistically significant difference between students' pre-test and post-test scores after learning using the Quizizz application.

Thus, the null hypothesis (H₀) which states that there is no significant difference between the pre-test and post-test scores is rejected, and the alternative hypothesis (Hₐ) is accepted. This result shows that the use of Quizizz in learning has a significant effect on improving students' reading ability.

B. Discussion

Based on the results of data analysis, it was found that there was a significant difference between students' pre-test and post-test scores after learning using the Quizizz application. This is evidenced by the results of the paired sample t test which shows a significance value (p) of 0.009 (p < 0.05). Thus, it can be concluded that the use of Quizizz has a significant effect on improving the reading comprehension skills of grade X students at SMAN 5 Purworejo.

This finding is in line with the results of research conducted by (Phamzah, 2020) which states that the use of Quizizz as a learning media gets a positive response from students and can increase their participation in learning activities. These results are also reinforced by (Citra and Rossy, 2020) which show that Quizizz-based media can improve student learning outcomes in ICT subjects. In the context of English language learning, the results of this study support the findings of (Putra, 2023) who concluded that the use of Quizizz was able to improve vocabulary mastery and encourage active student involvement in the learning process.

One of the advantages of Quizizz is the gamification element that makes the learning process feel more fun, competitive, and in accordance with the characteristics of today's digital generation. Apart from being a quiz medium, Quizizz can also be used as an interactive presentation tool, where teachers can deliver material visually and attractively, then interspersed with quizzes to strengthen students' understanding of the content of the material. This allows the learning process to be more dynamic and less monotonous.

The decrease in the number of students in the low achievement category and the increase in the medium to high category in the post-test indicate that the use of Quizizz can accommodate various levels of student ability. Thus, Quizizz does not only function as an evaluation tool, but also as an integral part of an effective and adaptive learning process.

Seeing the results obtained, it is recommended that educators can make the most of technology-based learning features such as Quizizz, not only for assessment, but also as part of the material delivery strategy.

The increase in students' performance suggests that integrating gamified platforms can reduce reading anxiety and foster student engagement. This research can be a reference in the development of digital learning approaches that are interactive and oriented towards improving student learning outcomes, especially in reading skills in the context of English as a Foreign Language (EFL).

IV. CONCLUSION AND SUGGESTION

A. Conclusion

This study aims to examine the effectiveness of the Quizizz application in enhancing students' comprehension of various reading texts, including intrinsic and extrinsic elements. Using a quantitative one-group pretest-posttest design, 36 tenth-grade students participated as the sample. The paired sample t-test analysis showed a significant improvement in post-test scores ($p = 0.009$), leading to the rejection of the null hypothesis (H_0) and the acceptance of the alternative hypothesis (H_a). Therefore, it can be concluded that Quizizz is an effective medium for supporting English reading instruction and improving students' reading comprehension. As a practical implication, teachers are encouraged to incorporate Quizizz not only for assessment purposes but also as a tool for delivering active and engaging reading instruction.

B. Suggestion

Future researchers are advised to use a more robust experimental design, such as a true experimental design with a control group, so that the results of the study are more accurate and generalizable. In addition, future research can expand the scope of material, not only limited to certain texts, and examine other language skills such as speaking or writing. Combining Quizizz with other learning media can also be explored to see its effect on student motivation and participation. Further research at different education levels, such as elementary school or college, is also feasible to expand the understanding of the effectiveness of this application.

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