

Effectiveness of the Quizizz Application in Improving Students' Reading Comprehension at SMP Darul Falah

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Abstract

This research investigates the effectiveness of the Quizizz application in enhancing students' reading comprehension at SMP Darul Falah. A quasi-experimental design was employed, involving two groups of seventh-grade students: an experimental group using Quizizz and a control group utilizing Google Forms for learning recount texts. The methodology includes pre-tests and post-tests to measure reading comprehension, with statistical analysis conducted using SPSS. The findings reveal that the experimental group, which utilized Quizizz, exhibited significant improvement in reading comprehension compared to the control group. Normality and homogeneity tests confirm the reliability of the data, and the Mann-Whitney U test indicates a significant difference in outcomes between the two groups. Based on the study's results, it can be concluded that Quizizz is an effective medium for teaching reading comprehension, offering a more engaging and motivating learning experience compared to traditional methods. These findings suggest that incorporating interactive and gamified tools like Quizizz can greatly enhance educational practices and improve student performance in reading comprehension.

Keywords: effectiveness, Quizizz application, reading comprehension

INTRODUCTION

The use of technology in the classroom is becoming part and parcel of modern pedagogy in today's learning scenario. In a world with rapidly evolving digital tools and platforms, educators can access new resources that will help improve student engagement and foster better learning. A digital tool such as Quizizz, an interactive online quiz application, has taken to the limelight for changing traditional teaching approaches. The present study explores the potential of the Quizizz application for fostering reading comprehension among students at SMP Darul Falah Islamic Boarding School.

Reading comprehension is a complex process that involves various components and levels of language processing (Ostojić, 2023). Reading comprehension is a multifaceted skill that requires the integration of different linguistic and cognitive processes to understand written text effectively. Reading comprehension is a complex process that involves various components and levels of language processing (Medranda-Morales et al., 2023). According to (Medranda-Morales et al., 2023) Reading comprehension is crucial for fostering critical thinking skills in high school students in Ecuador. Teachers play a vital role in promoting reading and implementing strategies to develop critical thinking. Furthermore, Reading comprehension involves word identification, language understanding, strategies, and motivation. It encompasses creating a situation model by combining textbase with background knowledge and employing comprehension strategies effectively (Bruggink et al., 2022). Reading comprehension is a complex, multifaceted process that involves various components and levels of language processing, requiring the integration of linguistic and cognitive skills to understand written text effectively. It is crucial for fostering critical thinking skills, and teachers play a vital role in promoting reading and implementing

strategies that combine text base with background knowledge and employ comprehension strategies.

Teaching reading comprehension presents several challenges. Traditional instructional methods often rely on passive learning, where students are expected to absorb information without actively engaging with the content. This approach can lead to disengagement and a lack of motivation among students. Furthermore, the one-size-fits-all nature of traditional teaching methods fails to address the diverse learning needs and preferences of individual students. To overcome these challenges, educators are increasingly turning to innovative teaching strategies that promote active learning and cater to the varied learning styles of students.

Interactive learning tools have emerged as a viable solution to the challenges associated with traditional teaching methods. These tools leverage technology to create dynamic and engaging learning environments. By incorporating elements of interactivity, multimedia, and gamification, interactive learning tools can enhance student motivation, participation, and retention of knowledge. One such tool that has gained widespread popularity in educational settings is Quizizz, an online quiz platform that allows educators to create and administer interactive quizzes.

Quizizz is utilized for game-based learning in elementary science education, enhancing student engagement, academic performance, and comprehension of scientific concepts through collaborative and inquiry-based learning (My et al., 2024). Quizizz is explored as a formative assessment tool in education, integrating gamification and prompt feedback to engage students, enhance motivation, and foster interactive learning environments in undergraduate settings (Moreira & Lara Freire, 2024). According to (Hutapea et al., 2024) Quizizz is an online interactive learning platform used for quizzes, tests, and polling. It enhances student interest, motivation, learning outcomes, and teachers' technology skills in education. Furthermore, (Wahyuddin & Sudarmanto, 2023) state that Quizizz application enhances English reading learning outcomes by engaging students with varied questions, providing instant feedback, reinforcing understanding, and monitoring progress, leading to significant improvement in results. It can be concluded that Quizizz is an online interactive learning platform that improves student engagement, motivation, academic performance, and comprehension in various subjects. It offers gamification, prompt feedback, and collaborative learning environments, making it particularly effective for elementary science and English reading.

This study takes some of the previous studies. The first research was conducted by (Nasution et al., 2023). explored the implementation of the Quizizz application at SDN 08 Sui Ruk Bengkayang. This study focused on introducing computer basics to students through interactive quizzes. The use of Quizizz provided real-time performance data, which helped enhance students' learning motivation and Information and Communication Technology (ICT) skills. The findings indicated that Quizizz effectively engaged students and supported the development of their digital literacy, making it a valuable tool for integrating technology into the classroom. The second study is conducted by (Ghaniy & Marmoah, 2023), examined the implementation of the Quizizz application for technology adaptation in teaching at SD Negeri 1 Paras. The research highlighted that Quizizz had a positive impact on student motivation. Despite facing challenges such as varying levels of tech skills and internet connectivity issues, the study found that the interactive and gamified nature of Quizizz helped maintain student engagement and interest in learning. This underscores the potential of Quizizz to motivate

students even in environments with technological limitations. The third study is conducted by (A'yun et al., 2022) investigated the effectiveness of using Quizizz in Islamic Religious Education. The results demonstrated that Quizizz significantly enhanced student motivation and understanding of the subject matter. The interactive quizzes facilitated better engagement with the content, making learning more enjoyable and effective. This study highlights the versatility of Quizizz in supporting diverse educational subjects and improving student outcomes. The fourth study is conducted by (Nurfadilah et al., 2022) explored the impact of Quizizz media on history learning outcomes at SMAN 10 Jakarta. The study showed that Quizizz had a positive effect on student learning compared to traditional teaching methods. The interactive nature of Quizizz quizzes made history lessons more engaging, leading to better retention and understanding of historical concepts. This research emphasizes the potential of Quizizz to enhance learning outcomes in subjects that students might traditionally find challenging or less engaging.

Based on previous above, this study is the preliminary investigation that looks into an innovative use for Quizizz by increasing reading comprehension as a critical yet difficult skill for many students at SMP Darul Falah. The positive advantages of using Quizizz in these aspects are proven: computer basics, Islamic Religious Education, and history. However, the specific impact on the skill of reading comprehension is left unexplored. The study tries to fill this gap with data on how the interactive and gamified quizzes increase the understanding and retention of text by the students. The research further looks at how the use of real-time feedback and data analytics from Quizizz to tailor better reading instructions to individual student needs improves learning outcomes. These findings are new knowledge on how to infuse technology in literacy teaching and learning and may transform the teaching practices in SMP Darul Falah and other educational institutions.

METHOD

Research Design

This research employs quantitative experimental research design. The quantitative method used in this research is quasi-experimental. According to Creswell (2008: 313), a quasi-experimental study uses a control group and an experimental group but does not divide the sample randomly assigned between the two groups. The design of this study is presented in Table 1

Table 1. Research Design

Group	Post-test	Pre-test	Treatment	Posttest
Experiment		7 A	Quizizz	7 A
Control		7 B	Google Form	7 B

Population and Sample

According to Sugiyono in Lestari (Sugiyono, 2027) part of the number and characteristics possessed by the population is the definition of sample. Furthermore, Arikunto in Lestari (Sugiyono, 2027) explained that it is better to take the entire subject if the population less than 100 people. In this research, the researcher use purposive sampling methods. The population in this study was students of class VII SMP Darul Falah. It consists of six classes, and each class consists of 25 students. The total number is 50 students. The sample of this research is two classes

from class VII SMP Darul Falah. The first class is class VII A as the experimental group, while the second class is class VII B as the control group.

The Treatment

In the treatment, the both groups, experimental and control group, were taught by using different learning applications. The experimental group was taught by using Quizizz application; meanwhile, the control group was taught by using Google Forms. Both groups got same teaching material which was recount text. The different was only the learning applications used.

Instruments

The research instrument was a reading test. The tests used were pre-test and post-test. The instrument for the pre-test was multiple choice questions. There were 25 items for pretest, and 25 items for posttest (total 50 items). Before starting treatment, students took a pre-test to assess their reading comprehension ability. The post-test was used to determine the effect of the experiment after the treatment had been administered. Students must complete a post-test after getting the treatment. The post-test results in the experimental and control groups were evaluated and used as final data for this study.

After collecting try-out data, a validity test was carried out. Validity is used to determine whether or not a test was accepted. Item validity was used in this study to determine the validity of the test index. The results showed that from 50 items, there were 38 valid items and 12 invalid items (excluded). The pre-test consisted of 25 questions taken from valid questions, while the post-test consisted of 25 questions taken from the rest items and randomly mixed with some items from pretest.

Data Analysis

The process of analyzing data is known as data analysis. The information obtained from the test scores is quantitative. Pre-test and post-test data from the experimental and control groups are collected. The data gained from student participants were analyzed by using SPSS (Statistical Package for the Social Sciences). If the data were normal, ANCOVA is used to analyze the data. However, if the data were not normal, Mann Whitney is used.

FINDING AND DISCUSSION

Findings

1. The Normality Testing Result

In this study, the Kolmogorov-Smirnov One Sample Test was employed to assess the assumption of normality. The objective of the normality test is to determine whether the error variance of the data follows a normal distribution. Data is considered normally distributed when the significance level is $p > 0.05$, while data is classified as not normally distributed when the significance level is $p < 0.05$. Table 4.3 presents the results of the Kolmogorov-Smirnov One Sample Test. Additionally, Table 2 displays further results from the same test.

Table 2 Tests of Normality

	Class	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
Student Learning	Pre-Test Experimental	.138	34	.102	.967	34	.395

Outcomes	Post-Test Experimental	.148	34	.058	.939	34	.059
	Pre-Test Control	.144	34	.071	.964	34	.325
	Post-Test Control	.161	34	.026	.946	34	.096
	a. Lilliefors Significance Correction						

Based on the normality test presented in the table above, the pre-test result for the experimental group was 0.102, while the post-test result was 0.058. This indicates that 0.058 is less than 0.05. Following the assessment of the experimental group's normality, we proceed to the control group. The pre-test result for the control group was 0.071, demonstrating that 0.071 is greater than 0.05. However, the post-test result for the control group was 0.026, which is lower than 0.05. These findings suggest that the post-test scores of the control group students were not normally distributed. Consequently, this study proceeded with non-parametric tests, specifically the Mann-Whitney U test, to evaluate the hypothesis.

According to Milenovic (2011), when the values in a sample are not normally distributed, the Mann-Whitney test is a non-parametric statistical technique that serves as an alternative to the t-test for independent samples.

2. The Result of Homogeneity of Variance

The second assumption pertains to the homogeneity of variances. In this study, the Levene test is utilized to assess homogeneity. If the result is $p > 0.05$, the assumption is considered satisfied. Conversely, if the result is $p < 0.05$, it indicates that the variances among the groups are not equal.

Table 3. Levene's Test of Equality of Error Variances^a				
Dependent Variable: Postest				
F	df1	df2	Sig.	
1.192	1	65	.272	
Tests the null hypothesis that the error variance of the dependent variable is equal across groups.				
a. Design: Intercept + Group + Pretest + Group * Pretest				

Based on the information presented in Table 3, the significance level of Levene's test using SPSS version 25 is 0.272. This value exceeds the threshold of 0.05, indicating that the data is homogeneous.

3. *Testing Hypotheses of Mann Whitney U*

The researchers employed the Mann-Whitney U test to assess the significant difference between the experimental group and the control group. The results of the Mann-Whitney U test will be presented in Table 4.

Table 4. The Result of Mann Whitney U Test

	Student Learning Outcomes
Mann-Whitney U	14.500
Wilcoxon W	609.500
Z	-6.940
Asymp. Sig. (2-tailed)	.000

Based on Table 4, the Mann-Whitney U score is 14.500, and the Wilcoxon W score is 609.500. When converted to a Z score, the result is -6.940. The Asymptotic Significance (2-tailed) is reported as falling between 0.000 and 0.05. Since the significance value is less than 0.05, these results sufficiently indicate that there is enough evidence to reject the null hypothesis, thereby accepting the alternative hypothesis. Consequently, it can be concluded that there is an effect of using Quizizz media on reading comprehension compared to not using Quizizz.

The calculation of effect size is necessary to determine the magnitude of the media's effectiveness in this research. Effect sizes for non-parametric data were utilized in this study and were adapted from Cohen's criteria, as described in Table 5.

Table 5 Cohen's Standard of Effect Size (1998)

Size	Category
$0.8 \leq d \leq 2.0$	Big
$0.5 \leq d \leq 0.8$	Medium
$0.2 \leq d \leq 0.5$	Small

The effect size is manually calculated using the formula (Field, 2009: 550).

The MannWhitney U test result is where the z value is obtained.

$$r = \frac{z}{\sqrt{N}} = \frac{-6.940}{\sqrt{68}} = \frac{-6.940}{\sqrt{8.246211}} = 0,84159$$

Based on the pattern of effect size results, the effect size score is 0.841, and according to table 5 of Cohen's Standard of Effect Size, " $0.8 \leq d \leq 2.0$ is a big category.

As a result, the range $0.8 \leq d \leq 2.0$ is considered large. Therefore, the use of Quizizz media to assist students in reading comprehension is beneficial to great effect.

DISCUSSION

The study demonstrates that integrating Quizizz into classroom instruction significantly enhances students' reading comprehension, supporting the transition to technology-based education. Reading comprehension is a complex cognitive process that includes word recognition, inference, and critical thinking (Ostojić, 2023). Traditional teaching methods often struggle to engage students or meet their diverse learning needs. By incorporating interactive and gamified elements, Quizizz creates an engaging learning environment. This aligns with findings by Moreira and Freire (2024), which emphasize the role of gamification in increasing motivation and improving learning outcomes. Additionally, the use of real-time feedback and adaptive learning through Quizizz fosters individualized support, addressing gaps in student comprehension.

Interactive tools like Quizizz not only improve reading comprehension but also enhance digital literacy, as noted by Nasution et al. (2023). This study confirms that Quizizz's interactive features, such as instant feedback and customizable quizzes, make learning more dynamic and tailored to students' needs. Compared to Google Forms, which were used in the control group, Quizizz facilitated greater student engagement and comprehension, as indicated by the Mann-Whitney U test results. These findings are consistent with Wahyuddin and Sudarmanto (2023), who reported that Quizizz effectively supports English reading skills by motivating students and monitoring their progress. Furthermore, its gamified approach addresses the shortcomings of traditional methods by making learning enjoyable and accessible.

The results of this study underscore the pedagogical value of Quizizz in improving reading comprehension at SMP Darul Falah. The large effect size calculated (0.841) confirms that using Quizizz has a substantial impact on students' academic performance. This finding aligns with Bruggink et al. (2022), who highlight the importance of integrating cognitive strategies and interactive tools for effective comprehension. In addition to reading comprehension, Quizizz offers versatility across various subjects, as demonstrated in previous studies (A'yun et al., 2022; Nurfadilah et al., 2022). This research provides new insights into how technology can transform literacy teaching practices, suggesting that similar applications could be explored for broader educational contexts.

CONCLUSION AND SUGGESTION

The purpose of this research is to evaluate the effectiveness of Quizizz as a learning medium for reading comprehension. A Mann-Whitney non-parametric test was employed due to the non-normal distribution of the data. The experimental group achieved an N-Gain score of 57.2335, placing it in the medium category, while the control group scored 26.1465, categorizing it as low. The Mann-Whitney test yielded a significance value of 0.000 ($p < 0.05$), indicating that the null hypothesis can be rejected. This result demonstrates a significant difference between the experimental and control groups. Specifically, there is a

notable distinction between students taught using Quizizz and those taught with Google Forms.

Suggestion

It is suggested that teachers can be create engaging and enjoyable reading lessons. Educators should be innovative and creative in their use of learning media to facilitate English language acquisition. The Quizizz application is identified as an effective medium for teaching reading and motivating students to learn English. Future researchers are encouraged to conduct similar studies while addressing the limitations of this research, exploring various text types, skills, and student proficiency levels.

REFERENCES

- A'yun, Q., Sulastri, S., Eka Wati, D., Ratna Sari, D., Ma'rufa, H., & Nur Khafidhloh, F. (2022). Effectiveness of Using the Quizizz Application in Islamic Religious Education. *International Journal of Science Education and Cultural Studies*, 1(1), 16–31. <https://doi.org/10.58291/ijsecs.v1i1.23>
- Bruggink, M., Swart, N., van der Lee, A., & Segers, E. (2022). Theories of Reading Comprehension: The Current State of Affairs on Reading Comprehension Research. *Putting PIRLS to Use in Classrooms Across the Globe*, 3–19. <https://doi.org/10.1007/978-3-030-95266-2>
- Ghaniy, G. A. A., & Marmoah, S. (2023). Kampus Mengajar program implementation in technology adaptation through the Quizizz application at SD Negeri 1 Paras. *Preprints*, 2019, 1–9. <https://osf.io/preprints/osf/y5k2n>
- Hutapea, B., Irmawati, I., & Manullang, K. R. (2024). Pelatihan Media Pembelajaran Berbasis Quizizz Dalam Kurikulum Merdeka. *Jurnal Abdi Mandala*, 3(1), 9–16. <https://doi.org/10.52859/jam.v3i1.559>
- Medranda-Morales, N., Palacios Miele, V. D., & Villalba Guevara, M. (2023). Reading Comprehension: An Essential Process for the Development of Critical Thinking. *Education Sciences*, 13(11). <https://doi.org/10.3390/educsci13111068>
- Moreira, H., & Lara Freire, M. L. (2024). Promoting Formative Assessment with Quizizz: A Classroom Action Research Study. *Ciencia Latina Revista Científica Multidisciplinar*, 8(2), 590–604. https://doi.org/10.37811/cl_rcm.v8i2.10511
- My, N., Hajar, S., Nur, M., & Arsyad, F. (2024). Journal of Education and Computer Applications Utilizing Quizizz for Game-Based Learning in Elementary Science Education. *Journal of Education and Computer Applications*, 1(1). <https://jeca.aks.or.id/index.php/jeca/index>
- Nasution, H., Sujaini, H., Septiriana, R., Muthahari, M., & Hafidh, K. (2023). The Implementation of Quizizz in Learning at SDN 08 Sui Ruk Bengkayang. *Tanjungpura International Journal on Dynamics Economics, Social Sciences and Agribusiness*, 4(1), 1–7. <https://doi.org/10.26418/tijdessa.v4i1.39>
- Nurfadilah, S., Fakhruddin, M., & Ibrahim, N. (2022). Media Quizizz dan pengaruhnya

- terhadap hasil belajar sejarah di SMAN 10 Jakarta. *Historiography*, 2(3), 364. <https://doi.org/10.17977/um081v2i32022p364-374>
- Sugiyono. (2027). *Metode Penelitian Kuantitatif, Kualitatif, dan R&D*. Bandung: CV. Alfabeta.
- Ostojić, A. B. (2023). Reading Comprehension Processes: a Review Based on Theoretical Models and Research Methodology. *Hrvatska Revija Za Rehabilitacijska Istrazivanja*, 59(1), 122–143. <https://doi.org/10.31299/hrri.59.1.8>
- Wahyuddin, W., & Sudarmanto, S. (2023). Improving English Language Class Learning Outcomes in Reading through the Implementation of Quizizz Application. *Edumaspul: Jurnal Pendidikan*, 7(2), 3129–3134. <https://doi.org/10.33487/edumaspul.v7i2.6495>