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THE EFFECT OF USING QUIZIZZ LEARNING MEDIA ON LEARNING INTEREST OF GRADE IV ELEMENTARY SCHOOL STUDENTS

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Abstract

This study investigates the impact of Quizizz as a learning medium on the interest of fourth-grade elementary school students in Indonesia. Utilizing a quantitative survey method, data were collected through questionnaires administered to 37 students. The results indicate a significant positive effect of Quizizz on student interest in learning, with a p-value of less than 0.001. The findings highlight the importance of engaging and interactive learning media in enhancing student motivation and participation in the learning process. This suggests that incorporating innovative educational tools, such as Quizizz, can effectively improve students' interest and academic outcomes
.

Keywords: *Learning Media; Quizizz; Interest in Learning;*

Abstrak

Penelitian ini mengkaji pengaruh penggunaan media pembelajaran Quizizz terhadap minat belajar siswa kelas empat sekolah dasar. Dengan menggunakan metode survei kuantitatif, data dikumpulkan melalui kuesioner yang diberikan kepada 37 siswa. Hasil penelitian menunjukkan bahwa penggunaan Quizizz memiliki pengaruh positif yang signifikan terhadap minat belajar siswa, dengan analisis statistik menunjukkan nilai p kurang dari 0,001. Temuan ini menyoroti pentingnya media pembelajaran yang menarik dan interaktif dalam meningkatkan motivasi dan partisipasi siswa dalam proses pembelajaran. Hal ini menunjukkan bahwa implementasi alat pendidikan inovatif seperti Quizizz dapat secara efektif meningkatkan minat belajar dan hasil belajar siswa.

Kata kunci: Media Pembelajaran; Quizizz; Minat Belajar

Introduction

Education is a crucial aspect of human life, as it plays a vital role in providing hope for positive change in society and the development of a nation. Furthermore, education is a long-term investment, with results that can be felt both now and in the future. According to Rahman et al. (2022), education is an activity involving various interrelated elements. Discussing education is inseparable from efforts to develop quality human resources. This quality is reflected in the level of education attained. The primary goal of education is to produce graduates capable of facing challenges and fulfilling their roles in the future. Therefore, every individual involved in the educational process is required to contribute maximally to improving the quality of education. One of the main components of quality education lies in the learning process that takes place in the classroom.

Education is essentially a conscious and systematic effort to create an environment and learning process that allows students to actively develop their potential. Through education, individuals are expected to develop spiritual and religious capacity, self-control, personality, intelligence, noble character, and the essential skills necessary to meet the needs of individuals, society, the nation, and the state. Education is also a planned process aimed at optimally developing students' potential. This is in line with Law of the Republic of Indonesia Number 28 of 1990 concerning the National Education System, which states that basic education is provided to develop attitudes and abilities, as well as provide the basic knowledge and skills necessary for living in society. Furthermore, basic education also prepares students to continue to higher levels of secondary education.

Researchers conducted direct observations during the science learning process. The learning process, which is often teacher-centered, causes students to be less actively involved in science learning. In addition, the use of learning media in explaining mathematics material is still relatively simple, such as only using pictures in books or PowerPoint presentations. However, the PowerPoint presentations used are less interesting and not interactive, so students tend to be less enthusiastic about participating in the learning. As a result, students' focus on the teacher's explanation is difficult to maintain for a long time, and they have difficulty connecting the concept of geometric shapes with relevant problems in everyday life. This indicates a lack of student interest in learning science.

Every student possesses diverse potential, so it is the responsibility of educators to identify and develop this potential so they can grow into individuals who are beneficial to society. To achieve this, educators are required to possess adequate competencies and the ability to design and implement meaningful and relevant learning tailored to students' needs. One way to do this is by developing engaging learning media that motivates students to learn actively.

Interest in learning is an internal factor that has a strong correlation with learning outcomes. Interest is a key element in achieving success in various fields, including studies, work, hobbies, and other activities. Therefore, interest plays a crucial role in the learning process. If the learning process is not aligned with students' interests, they tend to be less than optimal in participating in learning. This occurs due to a lack of attraction that can motivate students to deepen the material presented (Khatimah et al., 2022). According to (Diana & Sari, 2024), student interest in learning is a sense of joy and interest, student interest in learning, active involvement in the learning process, and a diligent and disciplined attitude are important indicators that reflect students' interest and motivation in learning. Student interest has a significant impact on academic achievement. The higher a student's interest in a subject or learning activity, the greater their chances of achieving optimal academic achievement. Conversely, low interest can hinder the learning process and negatively impact their academic achievement. Interest itself is a form of attraction that arises from within a person, without coercion from others. This interest is created through thought processes, emotional processing, and learning experiences that encourage individuals to explore a particular object or activity voluntarily and enthusiastically. One effective way to increase student interest in learning is by implementing various teaching methods and techniques, including the use of learning media. Learning media serve as a tool to convey messages and information systematically and engagingly, thus facilitating students' understanding of the subject matter more effectively. The use of relevant and innovative learning media can create a more engaging learning experience and encourage active student involvement in the learning process.

Digital-based learning media can convey information broadly through scientific, logical, and systematic presentation of material. This media functions as a support and complement to learning, thus becoming a strategic partner for educators in creating a more effective, efficient, and productive learning process tailored to the needs and characteristics of students. Furthermore, digital media serves as a learning resource that presents material with a more engaging, interactive, and relevant approach, thereby increasing student engagement and motivation in the learning process.

One interactive learning medium that can be utilized in the learning process is Quizizz, with its quiz feature. Quizizz is a game-based learning application that offers interactive quizzes as a modern alternative to traditional paper-and-pen quiz methods. According to Sukeshi & Janattaka (2022), Quizizz is a highly effective e-learning evaluation platform for use in the assessment process. This platform allows for rapid evaluation, with results immediately accessible to educators. This makes it easier for teachers to take appropriate follow-up steps for students, including determining their readiness to move on to the next core competency.

On this platform, users can create various questions through the Quizizz.com page, which students can then access and work on by entering a specific code. This application supports mobile phone use, allowing students to take quizzes flexibly both in online learning and in-person classes. The use of this technology not only creates a more engaging and enjoyable learning experience but also encourages increased student interest and engagement in the learning process. This reflects the positive application of technology in education. Furthermore, the features available in Quizizz make it easier for teachers to assign assignments and carry out assessments. Assessment data can be downloaded in Excel format, simplifying the processing and analysis of student learning outcomes. Unlike other educational applications, Quizizz offers game elements such as avatars, themes, and memes that can create a fun and entertaining learning atmosphere. Another advantage is the flexibility of using Quizizz. This application can be used not only for in-class evaluations but also for homework (PR). Furthermore, the security feature that allows randomization of questions prevents students from cheating, thus ensuring fairness in the evaluation process. This makes Quizizz an effective, innovative learning tool that meets modern learning needs.

Based on observations conducted by researchers in class IV of SDN 1 Keboireng, it was information that during the learning process carried out in the classroom, only used power point learning media were used and focused on the lecture method, so that some students had less interest in learning, such as inactivity of students in the learning process due to less interesting learning. Also, class IV students at SDN 1 Keboireng have the characteristics of liking to play and having a high curiosity about updates. This is due to the limited learning media that educators use during learning in the classroom.

Research methods

This research is a quantitative study using a survey method. This study involves two variables, namely the Quizizz media (independent variable, X) and student learning interest (dependent variable, Y). To measure these two variables, an instrument was used in the form of a questionnaire designed with a four-level Likert scale, namely Strongly Agree (SA), Agree (A), Disagree (D), and Strongly Disagree (SD). The research instrument is declared reliable if the observation scores have a high level of correlation with the actual scores, which reflects the consistency and reliability of the measuring instrument in revealing data in accordance with the research objectives. The validity and reliability of this instrument are important factors to ensure that the data obtained can be interpreted accurately and support the research conclusions. Reliability in research refers to the level of consistency of an instrument in measuring the same variable repeatedly. In this context, reliability is expressed as the correlation coefficient between two observation scores obtained through measurements using parallel questionnaires. In other words, a questionnaire is said to be reliable if the measurement results obtained consistently approach the actual state of the questionnaire participant's responses. This demonstrates that the instrument is capable of producing stable and reliable data, allowing it to be used to uncover the phenomenon being studied with a high degree of accuracy. (Retnawari, 2016)

Instruments related to these variables were tested on 37 students. Reliability was assessed using the Factor: *Reliability Analysis test* in the JAMOVI 2.3.28 application. Determination of the coefficient classification level, *Cronbach's Alpha,* is presented according to the coefficient table, *Cronbach's Alpha* (Guilford, 1956), which includes:

Table 1. Classification of Cronbach's Alpha Coefficient

Coefficient *Cronbach's Alpha*	Classification *Cronbach's Alpha* Coefficient
0.40 – 0.69	Moderate Reliability
0.70 – 0.89	High Reliability

0.90 – 1.00	Very High Reliability

(Guilford, 1956)

The reliability (R) of a questionnaire is usually expressed as a numerical coefficient that has a value range of $-1.00 < R < +1.00$. A high coefficient indicates a high level of reliability, while a low coefficient reflects low reliability. If an instrument has perfect reliability, its reliability coefficient is +1.00, which means the measurement results are completely consistent without any errors. Ideally, the reliability coefficient is positive. Reliability is closely related to the level of measurement error. Instruments with high reliability have a low level of measurement error, so the measurement results are more accurate. Conversely, if the reliability of an instrument is low, the level of measurement error will be greater. Therefore, the higher the reliability of an instrument, the more reliable the measurement results are in representing the actual condition of the subject being measured. (Retnawati, 2016). This study uses construct validity, which is a type of validity that indicates the extent to which an instrument is able to measure a theoretical construct or a particular ability that is the focus of the measurement. Construct validity ensures that the instrument actually measures the intended concept, in accordance with the underlying definition and theory.

The construct validation procedure begins with identifying and defining the variables to be measured. These variables are then expressed in the form of logical constructs based on relevant theory. From this theory, practical consequences are drawn that describe the measurement results under certain conditions. Next, these consequences are tested through data collection and analysis. If the measurement results align with theoretical expectations, the instrument is considered to have good construct validity. This validity is important to ensure that the research results can be interpreted appropriately within the context of the underlying theory (Retnawati, 2016). In this study, validity was determined using EFA. Exploratory Factor Analysis (EFA) is applied when the measurement model for the instrument construct is still in the search or exploration stage (Retnawati, 2016). Next, the computer constructs a variance-covariance matrix and calculates eigenvalues. These eigenvalues are then used to determine the percentage of explained variance and to generate a scree plot (Retnawati, 2016). Construct validity was determined using the JAMOVI 2.3.28 application.

In the operational product testing, the research was conducted using a quasi-experimental design. Before data analysis was conducted, two prerequisite tests had to be met. One was the normality test, which aimed to determine whether the data from each variable followed a normal distribution. This normality test was conducted based on creative thinking ability data, both pretest and posttest, applied to two groups: the control class (KK) and the experimental class (KE). The statistical analysis was conducted using Jamovi software version 2.3.28. *Shapiro-Wilk Multivariate Normality Test* to see the prerequisites for normality.

According to Sugiyono (2021:173), data is said to be normally distributed if the probability value (p) is > 0.05, whereas if $p < 0.05$, the data is not normally distributed. Normality tests were conducted on student pretest and posttest data. The testing criteria are as follows: If the significance value (sig) is greater than 0.05, then the null hypothesis (H0) is accepted, and the alternative hypothesis (H1) is rejected. Conversely, if the significance value (sig) is less than 0.05, then H0 is rejected, and H1 is accepted. This test was conducted at a significance level of 0.05. The criteria for the null and alternative hypotheses are as follows:

H0: Data is normally distributed
H1: Data is not normally distributed

The homogeneity test aims to determine whether the samples used in the study have the same variance. This test was conducted using Jamovi software version 2.3.28. The criteria for determining homogeneity based on the significance level (sig.) are as follows: if the sig. value is

> 0.05, then the data is declared homogeneous, whereas if the sig. value is < 0.05, the data is declared inhomogeneous. The homogeneity test was applied to the pretest and posttest data of students, with the rule that if sig. > 0.05, the null hypothesis (H0) is accepted, and the alternative hypothesis (H1) is rejected, while if sig. < 0.05, H0 is rejected and H1 is accepted. The test was conducted at a significance level of 0.05. The criteria for the null and alternative hypotheses are as follows:

H0: Homogeneous group variance
H1: Group variance is not homogeneous

The method in this field trial uses a nonequivalent control group design, which is almost the same as the pretest-posttest control group design, which is explained in the following figure (control and experimental classes):

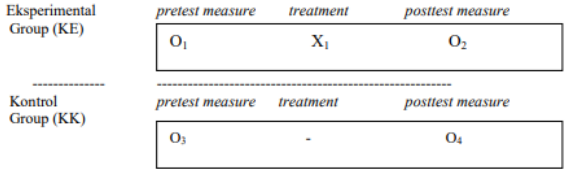

Figure 1. ***Quasi-Experimental Design with Nonequivalent Control Group Design***

The t-test was chosen as the analytical method to evaluate the difference in mean scores between the control and experimental groups. This hypothesis testing was conducted after meeting the prerequisite requirements, which included a t-test and an analysis of the influence of independent variables on the dependent variable. In this study, the type of t-test used was the Independent Sample T-Test, which aims to assess significant differences between the control and experimental groups.

The testing process used Jamovi software version 2.3.28. The criteria for accepting or rejecting the null hypothesis (H0) were based on a 5% significance level. If the significance value is >0.05, then H0 is accepted, indicating no significant difference. Conversely, if the significance value is <0.05, then H0 is rejected, indicating a significant difference. The research hypotheses are as follows:

Ho: There is no significant effect on the learning interest test between students who take part in learning using Quizizz learning media and students who do not use Quizizz learning media. Ho: μ1 = μ2.

Ha : Ada pengaruh yang signifikan pada tes minat belajar antara peserta didik yang mengikuti pembelajaran menggunakan media pembelajaran quizizz dengan peserta didik yang tidak menggunakan media pembelajaran quizizz. Hl : μl ≠ μ2.

Based on the hypothesis that has been made, the criteria used in testing can be explained as follows:

H0 is accepted if *the p-value (sig) > 0.05 (α)* or H0 is rejected if *the p-value (sig) < 0.05 (α)*
Ha is accepted if *the p-value (sig) < 0.05 (α)* or Ha is rejected if *the p-value (sig) < 0.05 (α)*

Research Results and Discussion

The instrument used in this study was a learning interest instrument in the form of a questionnaire consisting of 15 items. The questionnaire was piloted on 37 4th grade elementary school students to determine the reliability and validity of the research instrument used. Based on the results of the test data on the mathematical creative thinking ability instrument on the JAMOVI application, the results were as described below:

Table 1. *Scale Reliability Statistics* of Student Learning Interest Instrument

	Mean	Cronbach's α
scale	3.92	0.901

The student learning interest questionnaire instrument has a reliability level of 0.901, as indicated by *the Cronbach's Alpha coefficient value* through the JAMOVI application. This value indicates well-measured data reliability. Based on the classification of *Cronbach's Alpha reliability levels* according to the interpretation table (Guilford, 1956), a coefficient of 0.901 is in the high reliability category. Thus, this high coefficient reflects that the instrument has excellent reliability (Retnawati, 2016)

Table 2. Item Reliability Statistics of the Student Learning Interest Instrument

	Mean	Item-rest correlation
S1	4.48	0.497
S2	4.24	0.612
S3	3.26	0.658
S4	4.30	0.441
S5	3.85	0.479
S6	3.30	0.728
S7	3.15	0.532
S8	3.41	0.628
S9	4.28	0.607
S10	4.00	0.756

Table 2. *Item Reliability Statistics* of the Student Learning Interest Instrument

	Mean	Item-rest correlation
S11	3.39	0.703
S12	3.91	0.697
S13	4.46	0.421
S14	4.41	0.429
S15	4.31	0.554

In this context, ***item-rest correlation*** is used to measure the extent to which each item in an instrument correlates with the total score. A positive correlation indicates that the item effectively reflects the concept being measured. Conversely, a low or negative correlation may indicate a problem with the item's construction or formulation, requiring revision or removal (Itani et al., 2021).

The table shows that *the item-rest correlation* is positive for all items. The positive *item-test correlation* for all 15 items provides a strong indication of the quality of the measurement instrument. This positive correlation indicates that each item consistently supports

the concept or ability measured by the questionnaire. These results indicate that the questionnaire is well-designed and capable of accurately measuring the desired construct. This reinforces the belief that each item effectively assesses relevant aspects, while the total score reflects the overall level of mathematical creative thinking ability. After testing using the JAMOVI application, the analysis results indicate that the reliability of the mathematical creative thinking ability test instrument is in the reliable category.

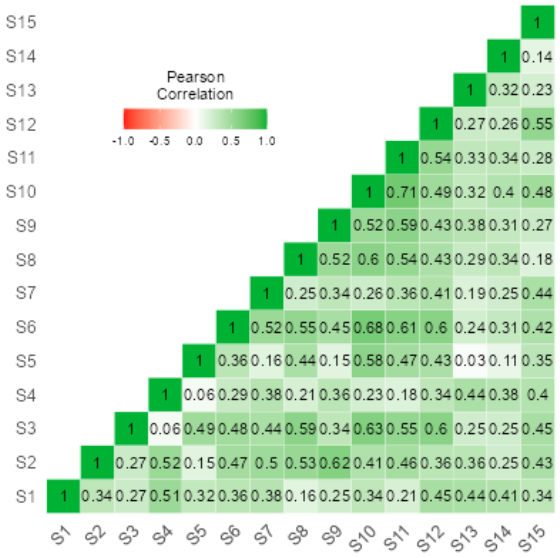

Figure 2. ***Correlations Headmap*** **Reliability of Student Learning Interest Instrument**

In this study, the validity was determined using EFA because it was still unclear whether the Quiz learning media affected students' learning interests. The analysis results showed a Bartlett's Test of Sphericity value of <0.01. Retnawati (2016) explained that a p-value of less than 0.01 indicates that the sample size used in this factor analysis was sufficient.

Table 3. ***Bartlett's Test of Sphericity*** **of the Student Learning Interest Instrument**

χ^2	df	p
427	105	< .001

The number of factors contained in the instrument can be determined from *the scree-plot* and Eigenvalues, resulting in a graph showing steepness and gentleness (Retnawati, 2016). The following is an analysis of *the Scree Plot* of the Student Learning Interest Instrument.

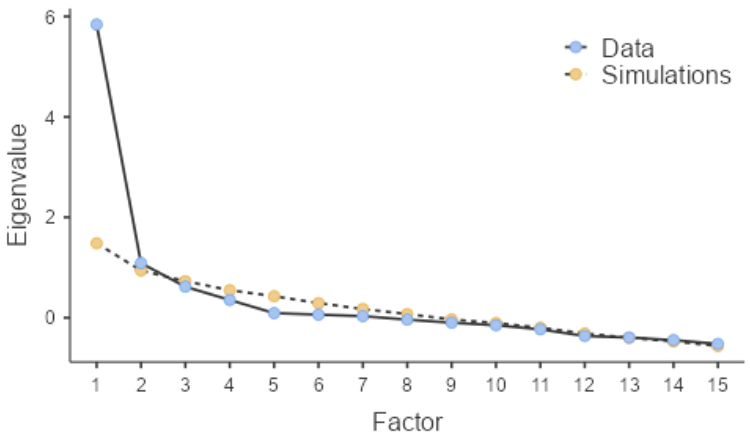

Figure 3. Scree Plot of the Results of Exploratory Factor Analysis of Student Learning Interest Instruments.

Observing the scree plot results, there is one steep slope, indicating that this questionnaire is only suitable for measuring student learning interest. This is also supported by the Eigenvalues, indicating that only one factor has a higher value than the others, as presented in the following table:

Table 4. ***Initial Eigenvalues of Exploratory*** **Factor Analysis of Student Learning Interest Instrument**

Factor	Eigenvalue
1	5.8394
2	1.0873
3	0.6172
4	0.3535
5	0.0914
6	0.0617
7	0.0316

Table 4. ***Initial Eigenvalues Exploratory*** **Factor Analysis of Students' Interest in Learning Instrument**

Factor	Eigenvalue
8	-0.0381
9	-0.0990
10	-0.1498
11	-0.2317
12	-0.3635
13	-0.3938
14	-0.4465
15	-0.5204

Based on the exploratory factor analysis, it can be concluded that the instrument in the form of a questionnaire is valid for measuring students' learning interests in general and has been proven empirically.

One of the research problems in this study is to examine the effect of using Quizizz learning media on the learning interest of 4th-grade elementary school students. To answer this problem formulation, a quasi-experimental research method with a pretest-posttest design was used. In this study, the results of the pretest and posttest were analyzed to see the effect of the treatment given. The study involved 37 students divided into two groups, namely a control class consisting of 18 students and using a conventional learning model, and an experimental class consisting of 19 students who used Quizizz learning media. The control class was implemented at SDN 1 Keboireng, while the experimental class was implemented at SDN 1 Besuki. The instrument used was 15 questions whose validity and reliability had been tested to measure

students' learning interest. Because this study used a pretest-posttest design, data from the pretest and posttest for both groups were analyzed statistically using Jamovi 2.3.28 to check for normality and homogeneity as prerequisites for further analysis.

Table 5. Normality Test (Shapiro-Wilk)

	W	p
Pre-test	0.976	0.550
Post Test	0.976	0.530

The table shows a p-value of 0.550 in the pretest and 0.530 in the posttest, greater than 0.05. This indicates that the data is normally distributed and Ho is accepted. The QQ Plot Assessing Multivariate Normality, shown in Figure 4 & 5, shows the distribution of normality points related to the data presented, which can be shown in the Figure below.

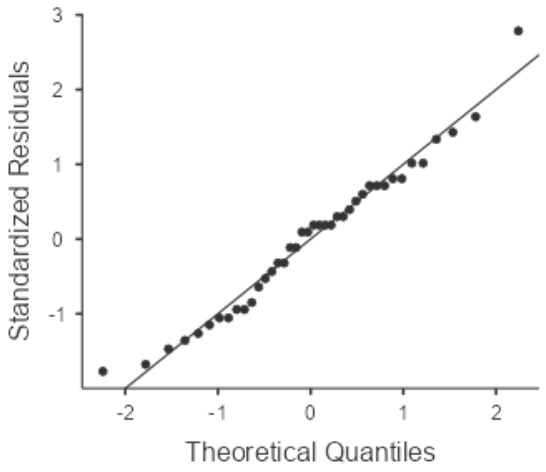

Figure 4. ***QQ Plot Assessing Multivariate Normality Pre Test***

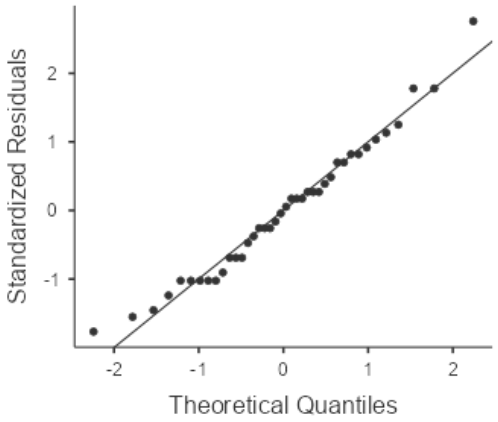

Figure 5. ***QQ Plot Assessing Multivariate Normality Post Test***

Figures 4 and 5 show that the points approach a parallel line, thus concluding that the error distribution is normal. A homogeneity test was then performed.

Table 6. ***Homogeneity of Variances Test (Levene's)***

	F	df	df2	p
Pre-test	0.227	1	38	0.636
Post Test	0.165	1	38	0.687

The table shows a p-value of 0.636 for the pretest and 0.687 for the posttest, both greater than 0.05. This indicates that the data is homogeneous and Ho is accepted. The prerequisites for using the independent sample t-test are met, namely, the data are normally distributed and homogeneous, so further testing is carried out. The independent sample t-test is then conducted.

Table 7. ***Independent Samples T-Test***

		Statistic	df	p
Pre-test	Student's t	1.00	38.0	0.323
Post Test	Student's t	4.41	38.0	< .001

Note. H_a $\mu_1 \neq \mu_2$

1. Ho: There is no significant influence on the learning interest questionnaire between students who take part in learning using Quizizz learning media and students who do not use Quizizz learning media. **(Ho: μ1 = μ2)**
2. Ha: There is a significant influence on the learning interest questionnaire between students who participate in learning using Quizizz learning media and students who do not use Quizizz learning media. **(H1: μ1 ≠ μ2.)**

Based on the hypothesis that has been made, the criteria used in testing can be explained as follows:

H0 is accepted if the p-value (sig) > 0.05 (α) or H0 is rejected if the p-value (sig) < 0.05 (α)

Ha is accepted if the p-value (sig) < 0.05 (α) or Ha is rejected if the p-value (sig) < 0.05 (α)

From the Table 7 it can be seen that the P value is 0.323. Because the p-value> 0.05 then Ho is accepted so it can be concluded that there is no influence whatsoever on the learning interest of elementary school students in the experimental class with the

control class when the pretest is carried out. Meanwhile, when the posttest is carried out in the control and experimental classes based on Table 7, the p-value is <0.001 which means it has less/lower than (<0.05). The p value <0.05 then Ho is rejected so it can be concluded that Ha is accepted. Thus, there is a significant influence on the student learning interest test between students who take part in learning using quizizz learning media and students who do not use quizizz learning media. Hl: μl ≠ μ2.

Based on the explanation above, the use of Quizizz learning media has been proven to have a positive impact on student learning outcomes, as revealed in research by Khatimah et al. (2022). Quizizz is a learning medium capable of creating a fun and interactive learning environment, thus making the learning process more engaging. Thus, material can be delivered effectively, ultimately contributing to improved student learning outcomes.

By presenting interactive, engaging, up-to-date, and relevant learning materials, instructors can significantly improve student learning outcomes. Teachers' use of learning media not only aims to support the learning process but also to encourage student independence and motivate them to take targeted action to achieve learning objectives. Incentives can be one way to support these efforts. The use of innovative learning media such as Quizizz can inspire students to improve their academic performance. This is in line with research conducted by Al Mawaddah et al. (2021), which showed that the application of Quizizz as an innovative learning medium can increase student engagement, understanding, and accuracy. Consequently, student learning outcomes experience significant improvements.

Conclusion

The use of Quizizz learning media has been proven to have a positive impact on the learning interests of fourth-grade elementary school students. This study shows that students who use Quizizz in the learning process have a higher learning interest compared to students who use conventional learning methods. The results of the t-test analysis showed a significant difference in student learning interest, with a p-value <0.05, indicating that interactive and engaging learning media can increase student engagement in the learning process.

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