

The Implementation of Interactive Learning Media Utilizing Quizizz at SMAN 2 Rambah

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ABSTRACT

The aim of this research is to find out how effective the use of Quizizz-based interactive learning media is by class XI Science students at SMAN 2 Rambah in the Informatics subject with computer network material. A quantitative method was used, with a questionnaire created by the school's Guidance and Counseling (BK) teacher to measure the level of student boredom before and after Quizizz. A Likert scale was used for data collection. Descriptive analysis, normality test, homogeneity of variance test, and difference test (paired sample t-test) were used to analyze the data obtained. All these techniques are used with the help of the SPSS program. The results show that Quizizz increases student participation in learning and significantly reduces student boredom. Before Quizizz was used, the average burnout score was 41.96. However, after use, this score dropped to 19.79. It was shown by the difference test that this difference was significant ($p < 0.05$). With this reduction in boredom levels, it is clear that Quizizz not only makes learning more interesting, but also makes learning fun and competitive. However, obstacles such as teachers' limited digital skills and difficulties in obtaining technology in remote areas still need to be overcome. According to this research, Quizizz can be a great interactive learning tool that gets students more engaged in learning, especially in high school.

Keywords: Game, Learning Media, Participation, Quizizz, Student Boredom

INTRODUCTION

In today's digital era, educators at various levels of education increasingly favor the use of technology-based learning media (Nazar et al., 2024). One of the applications that many people use as learning media is quizizz which is a quiz-based interactive learning platform that allows teachers to deliver lessons in a more interesting way and actively involve students (Forssell et al., 2023). This is in line with the idea that platforms like quizizz help students better understand the topic as a whole by offering variety and entertainment during the learning process (Maraza-Quispe et al., 2024).

Increased student participation in class is additional evidence supporting the use of quizizzes as a learning tool in schools. According to research conducted by (Arif et al., 2021) Interactive technology in the classroom can encourage students to participate more actively in teacher assignments and quizzes. In addition, quizizz has features that support competition-based learning, where students can compete with each other when answering quizzes in real-time. This phenomenon shows that students' interest in learning more and repeating what they have learned. This shows that it works better to reduce students' learning boredom level.

Although the use of Quizizz offers many advantages in interactive learning, this platform also faces a number of problems faced by educators and students. One of the problems faced is that not all teachers have the digital skills needed to use Quizizz features effectively in learning. This causes some teachers to only use basic features and not make full use of the broader features. A study conducted by (Sitompul et al.,

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2023) shows that the availability of technology is still the main challenge for many schools, especially in remote areas, to implement technology-based learning. Teachers must be ready to utilize this technology properly.

Previous studies on EFL students' motivation in the gamified format of quizizz case assessment (Zhang & Crawford, 2024). Focused on dividing the types of motivation, engagement, and learning competence, and evaluated the effectiveness of gamification components to increase students' motivation. In contrast, my research focuses on measuring the level of student learning boredom on the grounds that measuring the level of learning boredom is carried out to determine whether the boredom comes from conventional learning methods, which tend to be monotonous. Previous research (Tanjung & Namora, 2022) shows that learning boredom can affect students' understanding of lessons, especially in technology-based learning. This is why this research is important to find out how well technology-based learning media, namely quizzes, are applied in the classroom, especially in Informatics subjects related to computer network material. This topic involves many technical terms and abstract concepts, which have the potential to cause learning boredom. Therefore, it is hoped that interactive learning like Quizizz will be more fun and efficient for students.

The objective of this research methodology is to determine how bored students are when using the Quizizz application for learning. Since burnout is one of the main components that influence learning effectiveness, burnout is considered a key variable. When students are bored, they tend to be less enthusiastic and concentrate, which can have an impact on understanding the material and overall learning outcomes. Therefore, this research aims to measure student boredom as an indicator of the success of using interactive learning media. Apart from that, this research will also measure how well Quizizz can make lessons more interesting and prevent students from getting bored while studying in class.

LITERATURE REVIEW

Research conducted by (Sitompul et al., 2023), shows that the use of interactive learning media such as quizizz can increase student involvement in the learning process. Such as, making learning more fun and interactive, and allowing students to compete competitively. This is relevant in the context of education in the digital era, where students prefer technology-based learning. Apart from that, Quizizz has been proven to be effective in reducing students' boredom levels in the learning process (Sitorus & Santoso, 2022).

The use of quizizz-based interactive learning media is also able to increase students' understanding of academic concepts and values significantly compared to conventional learning approaches (Seftiani et al., 2021). Quizizz is an educational application based on game-based learning, which is a game-based learning technique that can improve students' ability to absorb knowledge, as well as offering interesting features that can be accessed for free (Nisa et al., 2024). This creates a more inclusive and adaptive learning atmosphere where every student, whether fast or slow in understanding the material, can participate optimally in the learning process.

Based on a literature review, the use of Quizizz as an interactive learning medium helps increase student participation during the learning process and provides an interesting learning experience (Anggoro & Pratiwi, 2023). In addition, this platform supports personalized learning, allowing teachers to adjust the difficulty level of questions, increasing participation and student engagement (Menggo & Darong, 2022).

From the description above, the author is interested in conducting research on the application of interactive learning media using quizizz at SMAN 2 Rambah in the Informatics subject, computer network material, the learning media for which is taken from the Belajar.id account. One of them functions to measure the level of student boredom during the classroom learning process. The formulation of the problem is how to implement learning media by utilizing quizizz at SMAN 2 Rambah and with the aim of implementing interactive media by utilizing quizizz as an interactive learning support so that class XI Science students at SMAN 2 Rambah do not feel bored during the learning process.

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METHOD

The approach used in this research is quantitative which is an approach using numerical data to analyze phenomena and test hypotheses (Ali et al., 2022). The purpose of this research methodology is to find out how saturated students are when using the quizizz application for learning. The first step is the questionnaire design stage designed by the SMAN 2 Rambah Counseling Guidance teacher. The stage of distributing questionnaires related to this approach is through distributing questionnaires which is a data collection method that asks respondents to answer a series of written questions or statements (Rinawati & Darisman, 2020). This research uses paired samples, which shows that the students in the sample are identical in both situations before and after using quizizz. This method allows direct measurement of changes in the level of saturation in each student. The population of this study consisted of all students in class XI Science at SMAN 2 Rambah, consisting of 11 boys and 17 girls. The main purpose of making a questionnaire is to measure how bored students are during the learning process in class. The following is a picture of the distribution before implementing quizizz media.



Figure 1. Distribution of Questionnaires Before Implementing Quizizz

In this study, the validity and reliability of the questionnaire did not need to be tested separately, because the questionnaire was prepared by guidance and counseling teachers at SMAN 2 Rambah who were experienced in their fields. The questionnaire met the criteria necessary for accurate measurement and was therefore effective in eliciting the required information. The guidance and counseling teacher's expertise in formulating statements ensures that the questionnaire is relevant and appropriate to the evaluation objectives, making it a reliable measuring tool in this research. In formulating questions a Likert scale is used to produce more measurable responses. To code the data, each answer was given a numerical value based on a predetermined Likert scale. Next, the coded data is entered into a spreadsheet or statistical software for analysis. The following are the levels of the Likert scale used in this research

Table 1 Likert Scale

Score	Choice
1	Strong Disagree
2	Don't Agree
3	Neutral
4	Agree
5	Strongly Agree

Source : (Erinsyah et al., 2024)

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Furthermore, the categories are arranged and analyzed descriptively which serves to describe the results of the questionnaire data. The technique used in descriptive analysis is SPSS (Statistical Package for the Social Sciences), a program used for data processing and statistical analysis (Abusamra, 2024). The following statistical tests can be used according to the research objectives and the type of data collected.

Descriptive Analysis

Presents a general description of the object under study without analyzing and making conclusions that apply to the public (Rusdi, 2023). And serves to provide an overview of the questionnaire data, including averages, frequencies, percentages, and standard deviations. Statistics such as mean, median, mode, frequency, and standard deviation can be used to understand the distribution of respondents' answers. In SPSS, users can select Analyze, then Descriptive Statistics, and choose Descriptive or Frequency.

Normality Test

Normality test has an important role to determine whether the questionnaire data is normally distributed, which is a requirement for several parametric statistical tests (Purba et al., 2021). The Shapiro-Wilk or Kolomogorov-Smirnovtest can be used, where data is considered normally distributed if $p > 0.05$. To perform this test in SPSS, users can go to Analyze, select Descriptive Statistics, and then Explore, selecting the variables to be tested.

Homogeneity of Variants Test (Levene's Test)

Identifying the variance between data groups is the same or homogeneous (Elzati, 2024), this is very important before carrying out parametric tests such as ANOVA. If p is greater than 0.05, the homogeneous variance assumption is met. By using Analyze, Compare Means, and One-Way ANOVA, this test can be carried out simultaneously with the ANOVA test, by checking the box for the variable homogeneity test.

Test of Difference (T-test or ANOVA)

The final stage is to evaluate whether there is a significant difference between the research groups (Temel & Cesur, 2024). Paired Sample T-Test compares the results of pre-test and post-test in the same group. In contrast, the Independent Samples T-Test is used to compare the means of two groups. The use of these statistical tests allows researchers to produce valid and reliable results. To perform statistical analysis in SPSS, first note that each variable is separate. Then to perform a Paired Sample T-Test, select Analyze > Compare Means > Paired-Samples T Test, while for Independent Samples T-Test, select Analyze > Compare Means > Independent-Samples T Test. Finally, to run the analysis, click OK and see the results in the SPSS Output. By using these various statistical tests, researchers can thoroughly analyze the questionnaire data and produce valid and reliable results.

RESULT

Based on the research results, it shows that the use of quiz-based interactive learning media in the Informatics subject at SMAN 2 Rambah increases student involvement in learning. Compared to conventional methods, students are more interested in using interactive learning methods, namely by applying quizzes to participate in class learning. Thus, their level of boredom decreased based on the results of the questionnaire which had been statistically analyzed. The data analysis techniques used in this research are descriptive analysis, normality test, variance homogeneity test (Levene's test) and difference test (T-test or ANOVA). The following is a picture of the application of quiz media and concepts after applying quizzes in the classroom.

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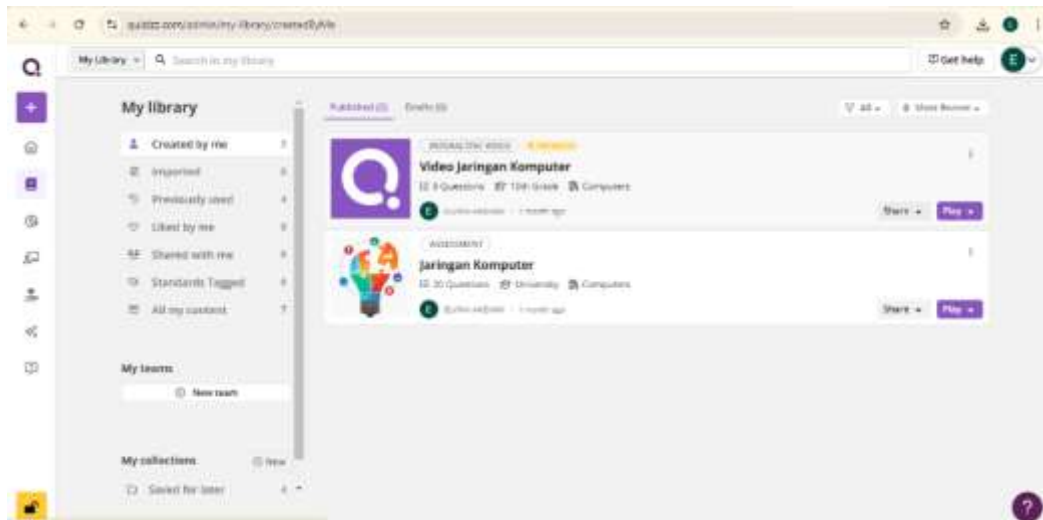


Figure 3. application of quiziz media taken from the ID learning account



Figure 3. Questionnaire After Implementing Quizizz Media

Table 2 below shows the results of the Descriptive Analysis of how students respond to using Quizizz as an interactive learning tool. which shows the distribution of mean scores, percentages, and standard deviations for each burnout indicator: fatigue, boredom, focus, and concentration. This descriptive data shows that the majority of students responded positively, which shows that quizizz contributes to reducing students' boredom levels. The purpose of this descriptive analysis is to measure the level of student boredom before and after using Quizizz in learning by displaying descriptive statistics from the questionnaire results before and after using Quizizz.

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Table 2. Descriptive Statistics Results

	N	Minimum	Maximum	Mean	Std. Deviation	Variance
Questionnaire before implementation	28	38.00	47.00	41.9643	2.38020	5.665
Post-implementation questionnaire	28	16.00	25.00	19.7857	1.96934	3.878
Valid N (listwise)	28					

Sumber : Output SPSS

This descriptive data shows that most students gave positive responses. Students received pre-implementation questionnaire scores that ranged between 38 and 47, with a mean of 41.96 and a standard deviation of 2.38. After implementation, the scores ranged between 16 and 25; the mean is 19.79, and the standard deviation is 1.97. The variance after implementation was 3.878, indicating that student boredom decreased significantly after using Quizizz. There was an average difference of 22.17 points between the pre-test score and the post-test score, indicating that the students' level of saturation had changed. This significant reduction in burnout scores can be directly attributed to the level of active participation of students in Quizizz-based learning, which offers interactive and competitive features that increase student participation. Apart from that, reducing the level of boredom can also be caused by variations in learning methods that attract students' attention, reducing the monotony that often occurs in traditional learning methods. Apart from showing a decrease in boredom, this change shows that students are more motivated and more engaged in technology-based learning.

After carrying out the Descriptive Analysis, the next step is to carry out a normality test. The normality test is carried out to determine whether the data is normally distributed so that the appropriate statistical analysis method can be determined. This is done with methods such as Kolmogorov-Smirnov or Shapiro-Wilk, which test the hypothesis that the data is normally distributed at a certain level of significance, such as 0.05. The p value is considered to have a normal distribution if it is greater than 0.05, and abnormal if it is lower than 0.05. The results of this normality test will determine whether the statistical analysis used will be parametric or non-parametric based on existing data.

Table 3. Normality Result

	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	Df	Sig.	Statistic	Df	Sig.
Questionnaire before implementation	.164	28	.052	.945	28	.151

a. Lilliefors Significance Correction

Sumber : Output SPSS

For questionnaire data before the application of Quizizz, with a total data (df) of 28, the significance value (Sig.) in the Kolmogorov-Smirnov test is 0.052 and in the Shapiro-Wilk test is 0.151, so the data for this variable is considered to be normally distributed. The normality assumption has been met, which means

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we can continue the analysis with parametric statistical techniques. For Pre_test, with a total of 28 data (df), the significance value (Sig.) in the Kolmogorov-Smirnov test is 0.052 and in the Shapiro-Wilk test is 0.151, so the data for this variable is considered to be normally distributed. The normality assumption has been met, which means we can continue the analysis with parametric statistical techniques.

Table 4. Normality Result

	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	Df	Sig.	Statistic	Df	Sig.
Post-implementation questionnaire	.191	28	.010	.956	28	.287

a. Lilliefors Significance Correction

Sumber : Output SPSS

Furthermore, from the normality test results presented in Table 4, it can be analyzed as follows. For questionnaire data after applying Quizzizz, the Kolmogorov-Smirnov statistical value is 0.191 with a significance (Sig.) of 0.010. This shows that the p value is smaller than 0.05, so we reject the null hypothesis (H_0) which states that the data is normally distributed. In contrast, the value of the Shapiro-Wilk statistic is 0.956 with a significance of 0.287, which is greater than 0.05, indicating that there is not enough evidence to reject the null hypothesis in this test.

After carrying out a normality test and ensuring the characteristics of the data distribution, the next step is to carry out a variance homogeneity test. The purpose of this test is to find out whether the variances between the groups to be compared are similar. Since these assumptions must be met before using parametric statistical analysis such as T-test or ANOVA, a test of homogeneity of variance is essential. By using methods such as Levene's test, researchers can test the null hypothesis which indicates that the variances between groups are equal. If the significance value is greater than 0.05, then the variance between groups is homogeneous, so further analysis can be carried out. If the significance value is less than 0.05, then the variance between groups is not homogeneous, which may affect the validity of the statistical analysis results. The results of the homogeneity test calculations are as follows.

Table 5. Test of Homogeneity of Variances

		Levene Statistic	df1	df2	Sig.
Questionnaire before implementation	Based on Mean	1.255	5	19	.323
	Based on Median	.865	5	19	.522
	Based on Median and with adjusted df	.865	5	14.858	.527
	Based on trimmed mean	1.251	5	19	.325

Sumber : Output SPSS

The results of the homogeneity of variance test with Levene Statistics for the initial data are shown in Table 5. The significance values (Sig.) are all greater than 0.05. In particular, the value of Sig. based on the Mean is 0.323, based on the Median is 0.522, and based on the adjusted and trimmed Median the mean is 0.527 and 0.325 respectively. This indicates that there is not enough evidence to reject the null hypothesis that the variances between the groups are equal. In other words, the variance in the analyzed group can be

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considered uniform, indicating that the data meets the basic assumptions required for further analysis. Consequently, these findings provide a strong basis for conducting further statistical analyzes without needing to worry about significant variations between groups.

After ensuring that the assumption of homogeneity of variance is met through the Levene Statistical test, the final step in this analysis is to carry out a difference test using the T-test or ANOVA, and the most feasible for this research is the Paired Samples Statistical Test which can be used to assess the average difference. before and after treatment on the same data, which is measured repeatedly in the same group. By applying this difference test, we can find out more about the influence of the variables under study and discover whether there are statistically significant differences that can help us understand the researcher better.

Table 6. Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean	Sig. 2 - (tailed)
Pair 1	Questionnaire before implementation	41.9643	28	2.38020	2.38020	.000
	Post-implementation questionnaire	19.7857	28	1.96934	1.96934	

Sumber : Output SPSS

For both paired samples, initial scores and final scores, descriptive statistics are shown in the Paired Samples Statistics Table. The average initial score (mean) was 41.9643 with a standard deviation and standard error of the mean of 2.38020, and the final average score was 19.7857 with a standard deviation and standard error of the mean of 1.96934. The significance value (Sig. 2-tailed) is 0.000, which indicates that the difference between the scores before and after implementing quizizz is statistically significant. If the Sig value. below 0.05, we can conclude that the difference between the pre-test and post-test scores is significant, indicating that the changes that occur after the intervention or treatment have a significant impact.

DISCUSSIONS

Based on the results of research conducted at SMAN 2 Rambah, it can be concluded that the use of quizizz as an interactive learning media increases student participation in class. According to data obtained through descriptive analysis, the level of student saturation in ICT learning was quite high before quizizz was used; The average pre-test score was 41.96. However, after implementing Quizizz, there was a significant reduction in students' boredom levels, the average post-test score fell to 19.79, which shows that students were more engaged and less bored during the learning process. This shows that technology-based learning tools such as quizizz have the potential to reduce student boredom and increase their desire to learn.

CONCLUSION

This study found that the use of Quizizz, an interactive learning tool, in the Informatics subject at SMAN 2 Rambah, together with computer networking material, was effective in reducing student boredom while studying. As a result of data analysis involving descriptive tests, normality, homogeneity, and difference tests, it was found that Quizizz not only made students more involved in lessons, but also reduced their

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boredom. Before Quizizz was used, the average student burnout score was 41.96, indicating a high level of burnout. However, after use, the score dropped drastically to 19.79.

Using quizizz makes learning more interesting, competitive, and interactive, which helps reduce boredom and increases student focus and participation during lessons. With its fun and interactive features, students are more actively engaged in lessons, which in turn reduces boredom. However, this research found several obstacles. For example, some teachers do not have sufficient digital skills and access to technology is uneven in remote areas. These things need to be improved so that the use of technology-based learning media can run better in various educational contexts.

Further studies could investigate the effect of Quizizz use on things like students' motivation to learn and their academic performance. Additionally, research could be conducted in schools with different socioeconomic backgrounds to see if these things influence how well Quizizz is used to reduce burnout and increase student engagement. To gain a better understanding of how it affects student learning, this research can be expanded to include other subjects and other types of interactive learning media.

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