

The Effectiveness of the Quizizz Application in Improving Mathematics Learning Outcomes in Madrasah Ibtidaiyah

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Abstract

The development of the technological era provides new space to be occupied, especially in the field of education. The use of digital media makes the student learning assessment process more effective, one of which is using the Quizizz application. This study aims to measure the effectiveness of the Quizizz application in improving student learning outcomes in mathematics subjects in Madrasah Ibtidaiyah. This research is a descriptive quantitative research through a survey approach. The sample in this study was 25 students at grade IV level at MIN Pekalongan. The data collection technique used by researchers is by using questionnaires and Likert scales. In analyzing the data, researchers use percentage techniques, namely by calculating percentages on each existing indicator. The results showed that showing that the t-test result was more than the significant level of 5%, which is 0.999, it can be concluded that H₀ is accepted. This means that quizizz is effective as a medium for evaluating mathematics learning in terms of student learning outcomes.

Keywords: effectiveness, quizizz app, learning outcomes

Introduction

Education is the process of changing individual behavior for the better. Education is actually carried out through the process of interaction between educators and students. Instilling educational values can be described in learning situations that start from the stages of planning, organizing, implementing, controlling and assessing. For this reason, educators must make innovations to implement education better. One of the things that can be done is to utilize technology with the aim that the learning process continues to run well. One part of the learning process is the assessment stage. Assessment is the process of collecting information on student learning outcomes both from knowledge, attitudes, skills that function to see learning progress, and as feedback for learning improvement (Mahdiansyah, 2017).

Assessment can be used as a benchmark for educators to carry out further learning activities, whether learning will continue with new material or there needs to be repetition of the material that has been learned, as stated by (Destiana et al., 2020) that student assessment activities are an important and integral component in teaching and learning activities in schools, to obtain information about the achievement of the results of the learning process of students accordingly with a predefined goal. Furthermore, the same thing is also stated by (Learning, 2018) that learning assessment is carried out in order to determine the success rate of students, while in a broad scope, learning assessment is carried out to determine the level of success and weakness of a learning process in achieving the educational goals aspired to. The importance of assessment that must be carried out in learning, so that in any atmosphere learning assessment must still be carried out to see the competencies that have been achieved and to determine the learning that will be carried out in the future.

One application that can be used as a substitute for learning assessment tools is the quizizz application. The quizizz application is a game-based educational application where there is multiplayer which makes learning more fun and interactive (Purba, 2019). Using this quizizz makes students think quickly, precisely and in a pleasant condition because this quizizz is like a game. This is in line with what was written by (Citra & Rosy, 2020) in their article on Quizizz media, the questions presented have a time limit, students are taught to think appropriately and quickly in doing the questions on the Quizizz media. Then the answers to the questions will be displayed in color and pictures and seen on the teacher's computer (as an operator) and students can choose one of the answers from the multiple-choice questions using paper containing *barcodes* that have been distributed by the teacher. If all students have finished answering, then the teacher (as the operator) can continue the next question. With the various situations that have been explained, one application that can be done to overcome the saturation situation experienced by students when doing problems, especially in mathematics subjects. This quizizz application can be carried out without using a cellphone, so it is suitable to be practiced in elementary school level classes and can make it easier for students to use (Irwansyah & Izzati, 2021).

Based on studies that have been conducted, it shows that quizizz can be used as an application used for assessment, especially in distance learning, such as research conducted by (Wijayanti & Hermanto, 2021) shows that the use of the quizizz application is effectively used in school mathematics subjects in terms of student motivation and learning outcomes. Furthermore, research conducted by (Citra & Rosy, 2020) stated that Posttest showed a significance level of 0.03 which had a value of less than 0.05 accompanied by experimental class learning results which had an average of 85.3. While the average control class was 80.7. So it can be concluded that the use of Quizizz educational Game-based learning media is effective in improving student learning outcomes in class X OTKP office technology subjects at SMK Ketintang Surabaya. Thus, it can be concluded that one alternative that can be done as an assessment tool that can be used in distance learning is to use the quizizz application, so researchers are interested in seeing the extent of the effectiveness of using the quizizz application for learning assessment. Based on these studies, researchers want to measure the effectiveness of the Quizizz application in improving student learning outcomes in mathematics subjects at Madrasah Ibtidaiyah.

Method

This research was conducted using quantitative descriptive research through a survey approach. The purpose of this study was to measure the effectiveness of the Quizizz application in improving student learning outcomes in mathematics subjects at Madrasah Ibtidaiyah. The research was carried out in semester 2 of the 2023/2024 academic year, the data collection method was carried out by questionnaire. The subjects in this study were class IVA students of MIN Pekalongan totaling 25 students. The time of the study is in April 2024. This research instrument uses questionnaires/questionnaires. Data collection techniques by distributing questionnaire/questionnaire instruments to students. The aspects asked in this questionnaire are:

No	Variable	Question
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1.	The Effectiveness of the Quizizz App in Improving Results	Do you find it fun to use Quizizz to learn math?
2.	Learn Maths	Does Quizizz help you get more interested in learning math?
3.		Do you feel like Quizizz helps you understand math better?
4.		Are you more enthusiastic about learning math after using Quizizz?
5.		Does Quizizz make learning math more fun?
6.		Do you feel more confident in answering math problems after using Quizizz?
7.		Are you easier to understand math concepts after using Quizizz?
8.		Do you find Quizizz helps you remember math material better?
9.		Are you more motivated to learn math after using Quizizz?
10.		Do you feel that Quizizz helps you to overcome difficulties in learning math?
11.		Do you prefer to use Quizizz instead of traditional assessment methods like written exams?
12.		Do you feel like Quizizz makes you more active in math learning?
13.		Does Quizizz help you focus more when learning math?
14.		Do you feel like Quizizz helps improve your math outcomes?
15.		Would you recommend using Quizizz to your friends to learn math?

The data analysis technique is to determine the percentage of each questionnaire answered by students. While the answer choices for statements consist of 5 answer choices, namely: Strongly agree, agree, simply agree, disagree less, and disagree. In accordance with the previously submitted data, the data obtained in this study will be processed descriptively using frequency tabulation as follows:

$$P = \frac{F}{N} \times 100\%$$

Information:

P = Percentage

F = Frequency

N = Number of samples (Sudjana, 1989: 129)

Result

Based on the results of data collection from the questionnaire distributed to 25 students, the response results were obtained in Figure 1.

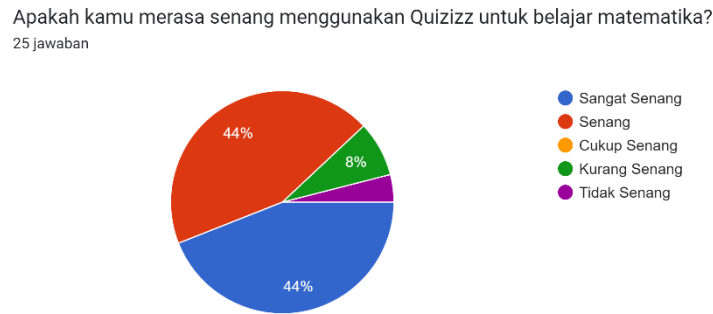


Figure 1. Student Interest in the Quizizz App

Based on question number one, it shows that 44% strongly agree, 44% agree, 0% agree enough, 8% disagree less and 4% disagree. This shows that the majority of students agree that they like to use the quizizz application to determine learning outcomes in mathematics learning.

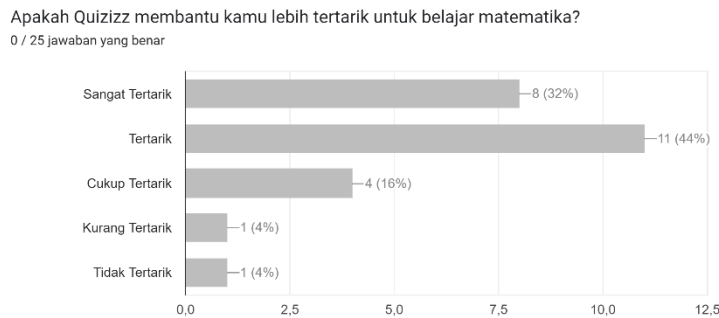


Figure 2. Quizizz App Interests

Based on question number two shows that strongly agree 32%, agree 44%, agree enough 16%, disagree 4% less and 4% disagree. This shows that the majority of students agree that they are interested in using the quizizz application to determine learning outcomes in mathematics learning.

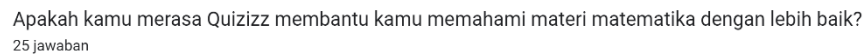


Figure 3. Understanding the Use of the Quizizz App

Based on question number three shows that strongly agree 36%, agree 40%, agree enough 12%, disagree 8% less and 4% disagree. This shows that the majority of students agree that using the quizizz application can improve understanding of mathematics subjects.

Apakah kamu lebih antusias dalam belajar matematika setelah menggunakan Quizizz?
25 jawaban

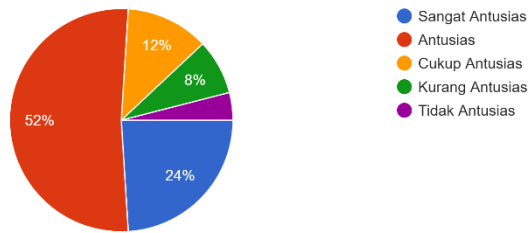


Figure 4. Enthusiastic about Using the Quizizz App

Based on question number four shows that strongly agree 24%, agree 52%, agree enough 12%, disagree 8% less and 4% disagree. This shows that the majority of students agree that using the quizizz application can increase enthusiasm in learning mathematics.

Apakah Quizizz membuat pembelajaran matematika menjadi lebih menyenangkan?
25 jawaban

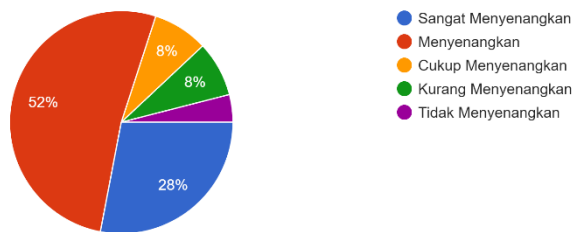


Figure 5. Quizizz App Work

Based on question number five shows that strongly agree 28%, agree 52%, agree enough 8%, disagree 8% less and 4% disagree. This shows that the majority of students agree that using the quizizz application can make it easier to do math problems and more fun.

Apakah kamu merasa lebih percaya diri dalam menjawab soal matematika setelah menggunakan Quizizz?
25 jawaban

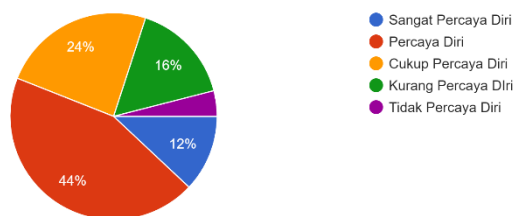


Figure 6. Self-Confidence Level

Based on question number six shows that strongly agree 12%, agree 44%, agree enough 24%, disagree 16% less and 4% disagree. This shows that the majority of students agree that using the quizizz application can increase student confidence.

Apakah kamu lebih mudah memahami konsep-konsep matematika setelah menggunakan Quizizz?
25 jawaban

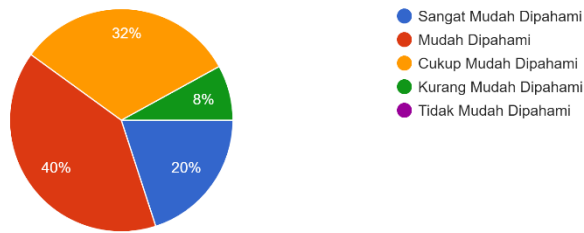


Figure 7. Benefits of the Quizizz App

Based on question number seven shows that strongly agree 20%, agree 40%, agree enough 32%, disagree 8% and 0% disagree. This shows that the majority of students agree that using the quizizz application is very useful in understanding mathematical concepts.

Apakah kamu merasa Quizizz membantu kamu untuk mengingat materi matematika dengan lebih baik?
25 jawaban

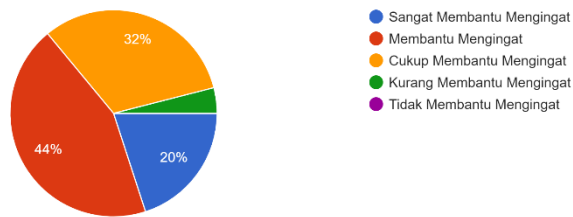


Figure 8. Quizizz App Memory

Based on question number eight shows that strongly agree 20%, agree 44%, agree enough 32%, disagree 4% less and 0% disagree. This shows that the majority of students agree that using the quizizz application can improve students' memory in mathematics subject matter.

Apakah kamu lebih termotivasi untuk belajar matematika setelah menggunakan Quizizz?
25 jawaban

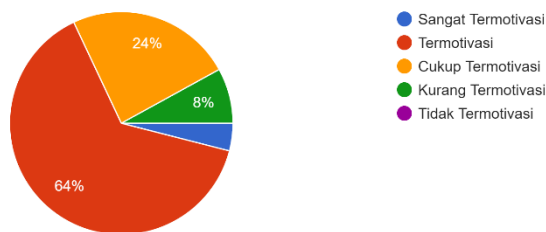


Figure 9. Quizizz App Motivation

Based on question number nine shows that strongly agree 4%, agree 64%, agree enough 24%, disagree 8% less and 0% disagree. This shows that the majority of students agree that using the quizizz application can increase student motivation to learn mathematics.

Apakah kamu merasa Quizizz membantu kamu untuk mengatasi kesulitan dalam belajar matematika?
25 jawaban

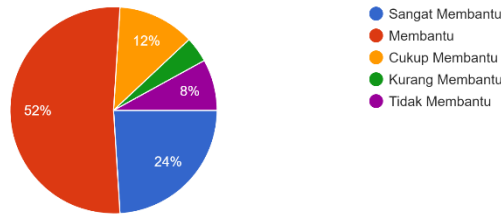


Figure 10. Overcoming the Quizizz App

Based on question number ten shows that strongly agree 24%, agree 52%, agree enough 12%, disagree 4% less and 8% disagree. This shows that the majority of students agree that using the quizizz application can help overcome difficulties in learning mathematics.

Apakah kamu lebih suka menggunakan Quizizz daripada metode penilaian tradisional seperti ujian tulis?
25 jawaban

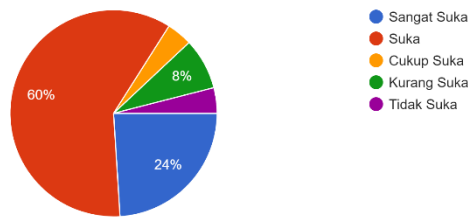


Figure 11. Assessment Effectiveness

Based on question number eleven, it shows that strongly agree 24%, agree 60%, agree enough 4%, disagree 8% less and 4% disagree. This shows that the majority of students agree to use the quizizz app rather than traditional assessment methods such as written exams.

Apakah kamu merasa Quizizz membuatmu lebih aktif dalam pembelajaran matematika?
25 jawaban

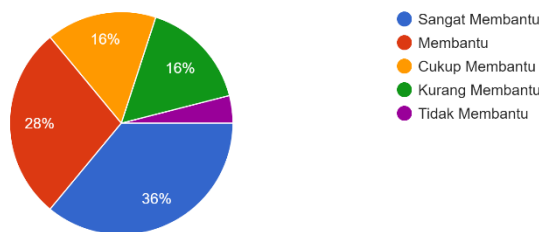


Figure 12. Assessment Effectiveness

Based on question number twelve shows that strongly agree 36%, agree 28%, agree enough 16%, disagree 16% less and 4% disagree. This shows that the majority of students agree that using the quizizz application helps to be more active in learning mathematics.

Apakah Quizizz membantu kamu untuk lebih fokus saat belajar matematika?
25 jawaban

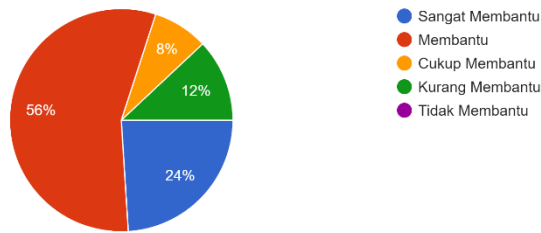


Figure 13. Effectiveness of Quizizz App

Based on question number thirteen, it shows that strongly agree 24%, agree 56%, agree enough 8%, disagree 12% less and 0% disagree. This shows that the majority of students agree that using the quizizz application can help students to focus more when learning mathematics.

Apakah kamu merasa Quizizz membantu meningkatkan hasil belajar matematika kamu?
25 jawaban

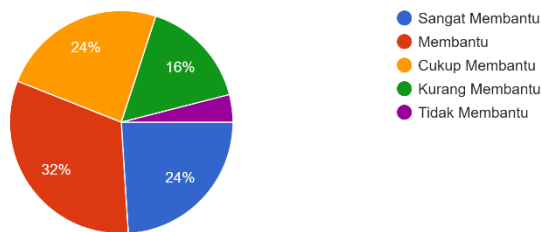


Figure 14. Quizizz App Usability

Based on question number fourteen, it shows that strongly agree 24%, agree 32%, agree enough 24%, disagree 16% less and 4% disagree. This shows that the majority of students agree that using the quizizz application can help students improve student math learning outcomes.

Apakah kamu akan merekomendasikan penggunaan Quizizz kepada teman-temanmu untuk belajar matematika?
25 jawaban

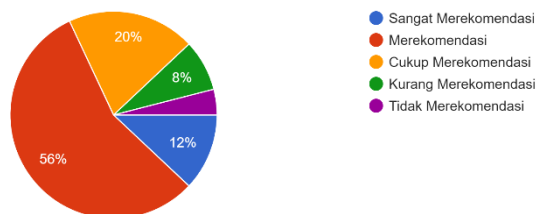


Figure 15. Quizizz App Recommendations

Based on question number fifteen, it shows that strongly agree 12%, agree 56%, agree enough 20%, disagree 8% less and 4% disagree. This shows that the majority of students agree that using the quizizz application can be recommended to other students.

Discussion

From the questionnaire data that has been distributed, it is concluded that the use of the quizizz application for effective learning assessment is to use. This can be seen from the interest, understanding, effectiveness, constraints in using the quizizz application where the majority chose 44% affirmative answers. This is also in line with research conducted by (Zuhriyah &

Pratolo, 2020) the results revealed that some of students' views on using Quizizz are: (1) interesting tools, (2) encouraging student confidence, (3) increasing student motivation, and (4) improving reading skills. Furthermore, students responded positively to the use of Quizizz in the classroom. These findings contribute to a better understanding of the positive response to the use of the Quizizz App as an assessment tool, particularly for Indonesian teachers.

Next research (Rodríguez et al., 2019), based on the results obtained, proved that methodologies using the quizizz application: (1) teaching-learning process, by increasing the level of student involvement in learning subjects, (2) completion of multiple-choice tests with a more optimistic and confident approach, (3) greater student tendency for teamwork, (4) entertaining and motivating educational environment. Then other studies also show that using the quizizz application can improve learning outcomes, because of student interest in using the quizizz application. that there is an influence after being given the use of Quizizz learning media on mathematics subjects through online at SDIT Al Ibrah Gresik and student learning outcomes have increased (Al Mawaddah et al., 2021). Then also based on the results of the questionnaire that the quizizz application is effectively used as a learning assessment tool with effectiveness showing 24% agree, 60% agree, 4% disagree, 8% disagree, and 4% disagree. In line with the results of the study (Inayaturohmah & Saraswati, 2022) showing that the t-test results are more than the significant level of 5%, which is 0.999, it can be concluded that H₀ is accepted. This means that quizizz is effective as a medium for evaluating mathematics learning in terms of student learning outcomes.

Conclusion

The conclusion in this study is that the use of the quizizz application is effective for use in learning assessments, this is evidenced by the majority of student response questionnaires agree that the quizizz application is easy to understand to use, there are no obstacles in using it, more effective to use than other applications, while the obstacles experienced by the majority of students come from students who are still not familiar with the quizizz application. For future research, it can be carried out on a larger scale, so that the data obtained is more accurate and the quizizz application can be considered for use as a learning assessment tool, especially learning as it is today.

Acknowledgments

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can provide real benefits in improving the effectiveness of mathematics learning at the elementary school level.

Conflict of Interest

1. **Researcher Interests:** Researchers conducting such research may have an interest in proving that the Quizizz app is effective in improving student learning outcomes. If the researcher has an affiliation with the developer or manufacturer of the application, there is a potential conflict of interest that might affect the results of the study.
2. **Educational Interests:** The institutions or educational institutions involved in this research may have a vested interest in demonstrating that the use of technology such as Quizizz can improve student learning outcomes. This can create pressure to support findings that support such claims.
3. **Student Interests:** Students who are the subject of research also have interests. They may have personal preferences or experiences that may influence their perception of the app's use in maths learning. For example, if they're uncomfortable with the technology or don't like using the app, it could affect their participation or response to testing.
4. **Academic Interest:** For journal authors, there is an academic interest to produce significant or interesting findings. This can create the potential to select or emphasize outcomes that support a particular theory or hypothesis, even if the data do not fully support it.

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