



Application of Learning Media Assisted with Improving Science Learning Outcomes through Quiz Media in Grade IV Students at SDN Melayu Muhammadiyah

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Abstract

This research is motivated by the low learning outcomes of students in class IV C in the subject of science and natural sciences. Based on the results of the pre-cycle, the percentage value was 35%. Of the 20 students, only 7 students completed the learning with an average class value of 67.1. This is due to the lack of variation in teacher assessment methods and media in learning. The purpose of this study was to determine the increase in student learning outcomes using quiz media in the subject of science and natural sciences for class IV at SDN Melayu Muhammadiyah. The research method used was PTK (Classroom Action Research) research using the Kurt Lewin model. This study was conducted in two cycles. Data collection techniques used by researchers were observation, interviews, documentation, and tests using quiz media. Data analysis used quantitative analysis with descriptive. The results showed that student learning outcomes after implementing quiz media increased. In cycle I, learning completion was obtained by 65% (13 students), while the incomplete value obtained by students was 35% (7 students) with an average value of 74 (sufficient). In cycle II, the learning completion rate was 90% (18 students), while the incomplete value was 10% (2 students) with an average value of 91.75 (very good). From these data, it can be said that the quiz paper mode media can improve student learning outcomes in the subject of science class IV C SDN Melayu Muhammadiyah.

Keywords: Learning Outcomes, Learning Media, Quiz.

A. Introduction

The rapid development of technology has an impact on the world of education. Education has undergone very significant changes due to the impact of the development of information technology that affects activities in schools. The integration of information technology in the world of education will improve the quality of learning (Lathifa Utami Dewi, Dedi Irwandi, 2021). Learning can be made more interesting by using various information technology-based learning media (Zellva Widya Puri Ramatika, Vivi Rulviana, 2023). Various online learning applications,

both free and paid, can now be accessed by educators. Students can follow the learning process more easily and enjoyably by choosing the application that is most suitable for them. This is in accordance with Kunti's view that teachers need technological competence to facilitate learning in an interesting, dynamic, effective, and enjoyable way (Victory, 2023).

From the results of interviews with class IV C teachers at SDN Melayu Muhammadiyah, several obstacles were found during the learning process. The limited variety of assessment methods and

media used by teachers makes students less interested in participating in learning. This is in line with (Ernawati et al., 2023) which states that teaching assessment activities carried out by teachers conventionally using paper (paper-based tests) are less interesting and less motivating for students to answer questions. On the other hand, processing the assessment results takes a long time, so this is one of the weaknesses of this evaluation method. This also causes boredom among students, which has an impact on their learning outcomes in the subject of science, with most students not reaching the KKM. Of the 20 class IV C students, only around 35% or 7 students managed to complete it, with an average class score of 67.1.

Therefore, media is needed that can increase efficiency and objectivity in student assessment, while also arousing interest and preventing boredom when answering evaluation questions from teachers. One of the challenges faced by researchers when using technology-based learning materials is that not all students have access to gadgets or electronic devices. Therefore, researchers are trying to find learning media that do not require students to bring gadgets or cellphones to school.

Quizizz media is one of the innovative learning media that creates interactive learning using barcode paper media. In its application, students and teachers interact with each other through questions and answers displayed on the screen and students answer via barcode paper (Fauziah & Sofian Hadi, 2023). In addition, quizizz media can increase students' learning motivation. This is in line with research conducted (Angelina et al., 2023) stating that the quizizz paper mode feature integrates elements of games, competitions, and feedback to increase student engagement, encourage interest and encouragement to actively participate in the learning process.

This media has been applied (Sukartini, 2022) with a study entitled

"Implementation of the Problem Based Learning Model assisted by Quizizz Evaluation to Improve Social Studies Learning Outcomes". The research findings show that there is a significant increase in learning outcomes between the quizizz media and the social studies learning outcomes of class VIII students of SMP Negeri 3 Semarang. The similarity between previous research and this research is that it uses the same media, namely quizizz. While the differences between previous research and this research lie in the subjects, subjects, and quizizz features used.

Based on the description, the researcher is interested in conducting a study entitled "Improving Science Learning Outcomes Through Quizizz Media for Grade IV Students at SDN Melayu Muhammadiyah". The purpose of this study was to determine the improvement in science learning outcomes using quizizz media for grade IV C students of SDN Melayu Muhammadiyah.

B. Research methods

The method used is Classroom Action Research using the Kurt Lewin model. The classroom action research model by Kurt Lewin describes action research that is carried out repeatedly. Between the first and second cycles, there is gradual improvement. Improving or increasing the quality of learning is the goal of classroom action research. (Suharismi Arikunto, Suhardjono, 2014). Classroom Action Research can be used to improve teachers' ability to reflect on themselves, improve school progress, and foster a professional culture among educators. (Happy Fitria, Muhammad Kristiawan, 2021).

The research was conducted at SDN Melayu Muhammadiyah with the research implementation time in the odd semester. The subjects of this research were students of class IV C SDN Melayu Muhammadiyah, with a total of 20 students. This action research plan was carried out in two cycles. There are four stages according

to Kurt Lewin, namely: (1) preparation, which includes making a learning plan and collecting research tools for data collection, (2) implementation, at this stage the researcher collaborates with the class IV C teacher in implementing learning using quizizz media according to the teaching module that has been made which contains initial activities, core activities, and closing activities, (3) observation, here the researcher makes observations and collects data obtained from the learning process, (4) reflection, where the researcher and the class IV C teacher evaluate the learning activities that have been carried out. If in cycle I there are still shortcomings and have not achieved the set performance indicators, then improvements will be made in cycle II. The researcher will use the results of this reflection as input to improve learning planning in cycle II.

Data collection techniques in this study include observation, interviews, documentation, and tests conducted through Quizizz. The collected data were then analyzed quantitatively with a descriptive approach.

The following formula is used to calculate the final learning outcome value:

$$\frac{\text{Initial acquisition value} = \text{Skor yang diperoleh}}{\text{Skor maksimal}} \times 100$$

Meanwhile, here is the formula for finding out the average class value:

$$M = \frac{\sum X}{\sum n}$$

Information:

M = Average value

$\sum x$ = The total number of scores obtained by students

$\sum n$ = Number of students

Table 1. Average class level criteria

Final Value Success Rate	Criteria
90-100	Very good
80-89	Good
65-79	Enough
55-64	Not good

0-54	Very Bad
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If 75% of students in a class achieve the KKM score required by the school, then the class is said to be completed classically. (Saur Tambolon, 2015).

The following is the formula for calculating the percentage of student completion:

$$P = \frac{\sum f}{\sum n} \times 100\%$$

Information:

P = Percentage of student completion

$\sum f$ = Number of students who completed

$\sum n$ = Total number of students

Table 2. Percentage of completion student learning

Learning Completion Percentage	Criteria
83% - 100%	Very good
71% - 82%	Good
61% - 70%	Enough
51% - 60%	Not good
0% - 50%	Very Bad

The performance indicators in this study are:

1. The research is said to be over if the average learning outcomes of students reach ≥ 75 .
2. If the percentage of students' KKM scores ≥ 75 is 75%, then the Quizizz media is said to be successful.

C. Research Results and Discussion

In the pre-cycle stage, the teacher provided the researcher with daily student score data. Based on the data, the researcher found that out of 20 students in class IV C, only about 35% or 7 students achieved scores above the KKM in the subject of Social Sciences, while 13 students had not achieved the KKM. The average class score was 63.1, with the highest score of 84 and the lowest score of 45.

Based on the pre-cycle findings data above, the learning outcomes of class IV C science need to be improved through

improvements. Class teachers and researchers collaborated using Quizizz media to overcome this problem.

Cycle I was implemented on Wednesday, July 31, 2024, at 09.30 WITA with a time allocation of 2 x 35 minutes. This cycle consists of four steps: planning, implementation, observation, and reflection. In the planning stage, the researcher together with the class teacher determined the time and learning plan that had been agreed upon to implement the Quizizz media. The researcher compiled a teaching module, prepared an observation instrument for student activities, and prepared evaluation questions on the Quizizz media. In the implementation stage, the researcher acted as a teacher or learning implementer, while the class IV C teacher acted as an observer of learning activities from the initial to the closing activities. During learning, observations were made. In cycle I, several obstacles were found, such as several students who did not dare to express their opinions, students' unfamiliarity in using the Quizizz media, and technical obstacles when using Quizizz.

From the results of the implementation of cycle I, the assessment of the learning outcomes test of class IV-C students showed an increase compared to the pre-cycle results. In cycle I, the level of learning completion reached 65% with a sufficient category, where 13 students were declared complete and 7 students had not completed. The average class score reached 74, also with a sufficient category. Because the percentage of completion has not reached the target set, which is 75%, the researcher needs to continue to the next cycle to achieve these criteria.

Cycle II was implemented on Wednesday, August 7, 2024, at 09.30 WITA with a time allocation of 2 x 35 minutes. In the planning stage, the researcher compiled a teaching module. The preparation of the teaching module in cycle II is similar to the module in cycle I, but there are several adjustments based on the results of reflection from cycle I. In the

implementation stage, the researcher acts as a teacher or learning implementer, while the class IV-C teacher functions as an observer of learning activities from the initial to the closing activities. In cycle II, the researcher fixes the obstacles found in cycle I so that the learning process can run more effectively.

From the results of the implementation of cycle I and cycle II, an assessment of the results of the science learning test for class IV-C students was obtained. Students showed an increase from pre-cycle, cycle I, to cycle II. In cycle II, the level of student learning completion reached 90% with a very good category, where 18 students were declared complete and 2 students had not completed. The average value obtained was 91.75 with a very good category. The highest value reached 100, while the lowest value was 70.

In the reflection stage of cycle II, the researcher and the teacher of class IV-C analyzed and compared the results of cycles I and II. The analysis showed that students' learning scores increased from cycle I to cycle II. Based on these results, it can be concluded that this study was successful and met the established indicators. Therefore, the researcher and the teacher of class IV-C agreed not to continue to the next cycle, because the students' learning outcomes had met the established criteria.

The learning activities of the subject of science using the Quizizz media can be carried out well thanks to the improvements made in each cycle. Based on pre-cycle data from the daily assessment of class IV-C students of SDN Melayu Muhammadiyah in the subject of science, it is known that the students' learning scores have not reached the set KKM. This can be seen from 20 students, where only 7 students obtained scores above KKM, with a percentage of completion of 35% and an average score of 67.1.

The improvement in learning outcomes can be seen from the worksheets made by the teacher. The following is an explanation of the improvement in learning

outcomes between pre-cycle, cycle I, and cycle II:

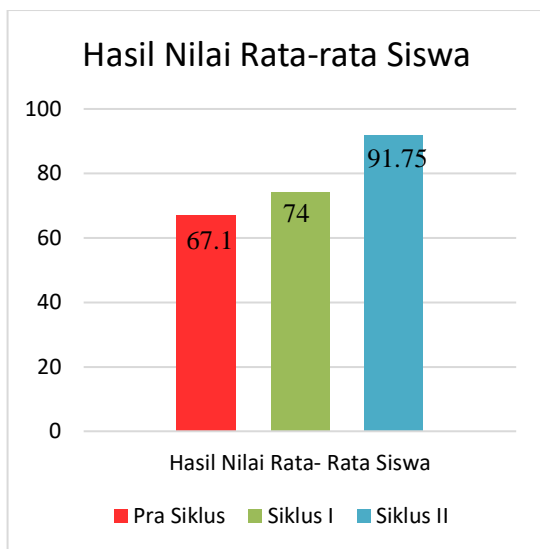


Figure 1. Diagram of students' average score results

Figure 1 shows that in the pre-cycle, cycle I, and cycle II the average value of students increased. In the pre-cycle it reached a value of 67.1 with a sufficient category, in cycle I it reached a value of 74 with a sufficient category, and in cycle II it reached a value of 91.75 with a very good category.

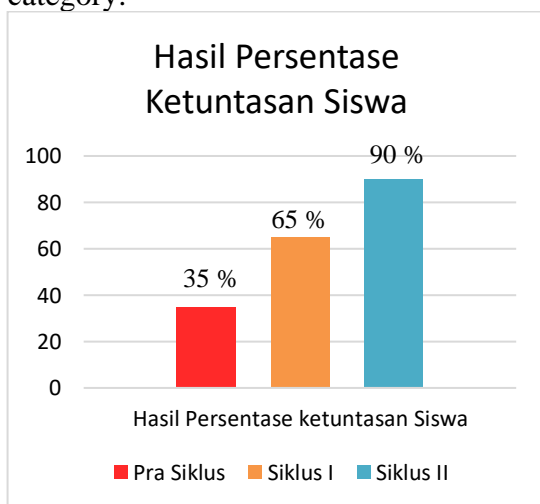


Figure 2. Diagram of student completion percentage results

From Figure 2, it can be seen that the percentage of student completion has increased from pre-cycle, cycle I, to cycle II. In the pre-cycle, the percentage reached 35% with a very poor category, then in

cycle I it increased to 65% with a sufficient category, and in cycle II it reached 90% with a very good category. This success in the average value and percentage of student completion is due to the good implementation of Quizizz media by the teacher, so that students as a whole are able to follow the learning well.

In the implementation of the Quizizz media, there are supporting and inhibiting factors. One of the supporting factors is the use of barcode paper by students, so they do not need to bring gadgets or cellphones to school. In addition, this media is interactive, where students can immediately find out the results of their answers after answering the quiz. This makes students feel happy to follow the learning process and helps teachers in conducting evaluations more effectively.

This is reinforced by research conducted by Ernawati, Muhammad Nurwahidin, and Dwi Yulianti in their research entitled "Utilization of Quizizz as a Student Assessment Media" stating that the use of the quizizz application can be an assessment media that minimizes cheating in working on questions, fosters student learning motivation, and makes learning fun (Ernawati et al., 2023). The impact of the ease of use of the quizizz application makes students enthusiastic in participating in the learning process. The findings of Asria et al.'s research (2021) strengthen this idea, the use of the quizizz application can be an alternative for teachers in increasing student enthusiasm in learning evaluations. In addition, students will be more likely to do the assessment well if there is a scoreboard that shows their success.

The inhibiting factor found was that some students were still hesitant to express their opinions because they were worried about making mistakes when answering in the discussion. To overcome this problem, in cycle II the teacher improved learning by giving awards to students who actively participated in the discussion. This is in line with research conducted by (Saputra et al., 2021) which states that good learning

achievement is influenced by the formation of a positive self-concept and giving rewards to students. Giving rewards to students has an impact, namely that students feel happy so that they become more enthusiastic about learning (Nurrohmatulloh & Mulyawati, 2022). This is the same as what Suharismi Arikunto said, who stated that giving rewards functions to strengthen the individual's opinion or belief that the actions taken are correct, therefore students feel happy and motivated to repeat the actions they have done (Marta, 2016). In addition, students are not used to using Quizizz media, so some of them are still confused about using the media. In the improvements in cycle II, the teacher regulates students more by giving clear instructions on using Quizizz. In cycle I, there were also technical constraints related to the use of Quizizz caused by an unstable internet network. As a step of improvement in cycle II, teachers prepared all learning needs, including providing a quota reserve to maintain network stability.

From the description above, it can be concluded that the use of Quizizz media can improve student learning outcomes. This can be proven by the increase in science learning outcomes in each cycle. The increase can be seen in the following table:

Table 3. Improvement in Learning Outcomes

Observed Aspects	Cycle I	Cycle II	Number of Peningkatan
Average value	74	91.75	17.75
Percentage of learning completion	65%	90%	25%

Table 3 shows an increase in research results from cycle I to cycle II. The average student score increased by 17.75, while the student completion rate increased by 25%. These results indicate that this

research has been successful, because the targeted indicators have been achieved.

D. Conclusion

Based on the results of the analysis and discussion, it can be concluded that the application of the Quizizz media has succeeded in improving student learning outcomes in the subject of Science in class IV-C SDN Melayu Muhammadiyah. This can be seen from the comparison of the percentage of student completion and their average score. In the pre-cycle, the percentage of student completion only reached 35% with a very low category. In cycle I, it increased to 65% with a sufficient category, and in cycle II it reached 90% with a very good category. The average student score in the pre-cycle was 67.1 with a sufficient category, increased to 74 in cycle I, and reached 91.75 in cycle II with a very good category.

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