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IMPROVING STUDENTS' LEARNING OUTCOMES USING THE TARL APPROACH ASSISTED BY INTERACTIVE QUIZ IN THE SCIENCE SUBJECT OF GRADE V AT STATE ELEMENTARY SCHOOL 1 PALEMBANG

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ABSTRACT

This study aims to improve learning outcomes using the interactive quiz-assisted tarl approach (snakes and ladders) in the subject of science. This study is a Classroom Action Research. The study was conducted at SD Negeri 1 Palembang, with 27 students consisting of 14 male students and 13 female students. Learning was carried out using the *Teaching at The Right Level approach* assisted by interactive quizzes (snakes and ladders). Data were analyzed descriptively and presented in the form of tables and graphs. The results of the study on pre-cycle activities, cycle 1, and cycle 2 obtained scores of 55, 60, and 78. In the implementation of the pre-cycle, cycle 1, and cycle 2, the percentages were 45%, 55%, and 85%. Given the determination of the indicator of success of student learning outcomes of 75% has reached a value of N> 75. Based on these results, the research conducted on science learning using *the Teaching at the Right Level approach* assisted by interactive quizzes (snakes and ladders) in the VC class of elementary schools can be declared successful and can improve student learning outcomes.

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1. INTRODUCTION

Education is a human learning process to become better, both in academics and personality. Education is a human effort to grow and develop potential both physically and spiritually in accordance with the values that exist in society and culture (Lukman Hakim, 2016:54). As stated in Law Number 20 of 2003 concerning the National Education System Chapter I Article 1 Paragraph 1 that: Education is a conscious and planned effort to create a learning atmosphere and learning process so that students actively develop their potential to have spiritual religious strength, self-control, personality, intelligence, noble morals, and skills needed by themselves, society, and the nation.

An educator has a very central role, both as a planner, implementer, and evaluator in learning. Therefore, in the learning process, educators have a very important role in determining the quality of learning, educators must always create a conducive atmosphere in the educational environment and carry out teaching duties in the classroom as much as possible in an effort to achieve educational goals (Amir Hamzah, et al., 2022:107). Teachers as facilitators of learning in the classroom must be able to plan, implement and evaluate learning actively, creatively, and innovatively using various approaches, models, methods, and media that can support the learning process so as to achieve the desired goals optimally (Gemnafle & Batlolona, 2021).

Based on the results of observations of the low learning outcomes of the science subjects in class V.C students . at State Elementary School 1 Palembang , this causes teachers to have to reviewing what was not optimal in the learning. However, not all students in the class V.C at State Elementary School 1 Palembang did

not get low learning outcomes, because Not all students have the same abilities. Each individual student has different abilities. are different, both in terms of their intellectual abilities and their enthusiasm for learning. However, in reality, there are still Many students in class V.C of Palembang 1 State Elementary School have proven to have good learning outcomes. which is still below the Minimum Completion Criteria (KKM) that has been set. When student learning outcomes are low, teachers may assume that students make mistakes and may not understand what the teacher is saying .

After further review and analysis, the factors that influence the low learning outcomes of students are due to less interactive learning activities and the lack of variation in approaches, methods, and learning media applied in the classroom. The lack of variation in learning methods and media used is one of the factors that causes low motivation and learning outcomes of students . Therefore, efforts are needed to improve student learning outcomes through the application of learning approaches that are more appropriate to their needs. Therefore, teachers need to innovate learning approaches and media to encourage students to be actively involved in the learning process so that they can improve their learning outcomes.

To address this issue, *the Teaching at the Right Level* (TaRL) approach offers a more appropriate solution. TaRL is a pedagogical approach that focuses on grouping learners based on their ability level, rather than age or grade. Thus, this approach allows learners to learn according to their respective levels of understanding and ability, so that the learning process becomes more effective. In this approach, teachers can map learners based on initial diagnostic assessments, group them into learning groups according to their abilities, and provide learning materials or activities that are tailored to their competency levels.

However, the success of the TaRL approach is highly dependent on the learning methods and media used in the process. One of the media that can increase the effectiveness of this approach is the use of interactive quizzes. Interactive quizzes are learning media that actively involve students in answering questions through interactive technology, both online and offline. This media is designed to attract students' attention , increase their participation in the learning process, and ultimately improve learning outcomes. Interactive quizzes allow students to get immediate feedback on their answers, which encourages them to correct mistakes and strengthen their understanding of the material.

Based on this classroom action research, the researcher intends to apply the TaRL approach assisted by interactive quizzes as an effort to improve student learning outcomes in the subject of science in class V.C at SD Negeri 1 Palembang. P embeda This research is located in The media used as a tool for evaluating student learning outcomes uses interactive quizzes (snakes and ladders) . Based on the background and existing research studies, the objectives of this research are: aims to improve student learning outcomes using the TaRL approach with the help of interactive quiz media (snakes and ladders) in the subject of science . With this approach, it is expected that students can be more active in learning, gain learning experiences that are in accordance with their abilities, and improve understanding and overall learning outcomes.

2. RESEARCH METHODS

The method used in this study is the Classroom Action Research (CAR) method. Classroom action research is a research activity that is carried out reflectively based on actual problems that occur in the classroom to improve and enhance the quality of the learning process and outcomes (Asrori & Rusman, 2020). This study also uses a descriptive qualitative approach to describe in depth how the learning approach and media are implemented, and how the desired results can be achieved according to the established success indicators.

This Classroom Action Research was conducted in the subject of Science. Place of Implementation of this Classroom Action Research namely in elementary school N egeri 1 Palembang , in class V.C which consists of 27 students with details of 14 male students and 13 female students. Data collection techniques were carried out using observation and written tests . This research was conducted in the semester g odd school year 2024/2025 , precisely starting from July 15 to August 24, 2024. This research using *the Teaching at The Right Level* (TaRL) approach , the object of this research is the learning outcomes of students . Data collection techniques are carried out using observation and written tests . While the data technique is analyzed descriptively and presented in the form of tables and graphs.

Classroom action research aims to develop the most efficient learning strategies. and effective in natural situations (as opposed to experiments). Action research assumes that knowledge can be constructed from experience, especially experience gained through action. This Classroom Action Research aims to improve the quality of the learning process and outcomes. The implementation procedure for Classroom Action Research includes several stages, namely: planning, implementing actions, observation, and reflection which are always carried out in each cycle. According to Kemmis and Taggart, the action research procedure is divided into four stages of activities. one round (cycle) namely: planning – action and observation – reflection. Action research model is often referred to by action researchers.

In this study, several stages were passed including pre-cycle, first cycle, and second cycle, where each cycle involved the planning, implementation, observation, and reflection processes. In the pre-cycle, initial

data were collected and analysis was carried out to identify the causes of low student learning outcomes. In the first and second cycles, interactive quizzes (snakes and ladders) were used in learning, followed by reflection on the results obtained. Peers played an important role in helping researchers observe and assess the teaching and learning process (Arikunto, 2019) .

The planning stage includes several activities, including preparing temporary specifications for improve learning outcomes by using interactive quizzes (snakes and ladders) to compile evaluation questions related to the IPAS material to be studied , preparing an action implementation plan, developing Research tools, Compiling SD science teaching modules , and creating observation sheets for record the learning activities of teachers and students . The implementation stage of the action is carried out after get an overview of the class, the initial abilities of students and learning facilities. Actions are carried out by The *Teaching at The Right Level (TaRL)* approach utilizes interactive quizzes (snakes and ladders) as a medium evaluation to make it easier for students to understand the science material that will be studied . At this stage Researchers divide students into several study groups based on the students' initial abilities . low , medium , and high categories , students are divided into 7 study groups by grouping students who are low , medium , and high .

So that the learning process students learn with more friends understand, with this it is hoped that students will be able to improve their understanding and learning outcomes which will be obtained. The observation stage is carried out on the implementation of the action using a sheet. observations that have been prepared in advance to record the activities of class V.C students at SD Negeri 1 Palembang . At The reflection stage helps measure the success of a cycle and is carried out at the end of each cycle. This activity involves looking at the successes and weaknesses of previous planning. Reflection also becomes the basis for identifying improvements that need to be made. weaknesses in the implementation of the previous cycle to be applied in the next cycle.

The validity of the data obtained through the initial assessment is the learning outcomes of class V.C students of SD Negeri 1 Palembang in the subject of science on the material of light and its properties which is still very low. The average value of learning outcomes is only 60 , this value is still below the value the KKM standard that has been determined . With the percentage of students who got scores below the KKM of 46% or 13 students , while only 54% or 15 other students were declared to have completed. Qualitative and quantitative descriptive data analysis techniques to find out the average value, the value of each student from each cycle, with the completion value or KKM of SD Negeri 1 Palembang of > 75 with the criteria of > 85% percentage of student completion.

3. RESULTS AND DISCUSSION

Results

Based on the results of research carried out in the pre-cycle and 2 cycles, where each cycle... carried out in one meeting, but before implementing cycle 1, the researcher carried out pre-activity activities cycle first in order to find out the extent of the initial conditions and abilities of class V.C SD students . Negeri 1 Palembang . So, data has been obtained to support research on student learning outcomes . The results of the study showed that the learning outcomes of students in the content of the IPAS subject increased in each cycle. This increase in learning outcomes is known with the test results in each cycle. Determination of the minimum value or KKM in accordance with the provisions in the elementary school Negeri 1 Palembang , namely students are said to have not completed if they get a score of N < 75, and students are said to have completed in obtaining scores if they get a score of N > 75. The minimum completion of KKM can be seen in Table 1.

Table 1. Minimum Completion Criteria

Value	Description
Not Completed	N < 75
Completed	N >75

Based on the criteria in table 1, the number of students who meet the minimum completion criteria and students who do not meet the minimum completion criteria for pre-cycle, cycle 1, and cycle 2 scores can be shown in Figure 2.

Based on Figure 2, the researcher carried out pre-cycle activities to assess students' basic skills in the science subject of light and its properties before using *Teaching at the Right Level (TaRL)* approach during the learning process. At this stage, the researcher conducted initial testing with the aim of collecting comparative data on improving student learning outcomes, it was obtained that 12 students obtained scores above the KKM and 15 students obtained scores below the KKM. In cycle 1 using the Problem Based Learning model and media that varies and uses the *Teaching at the Right Level (TaRL) approach* during the learning process, obtained as much as 1 6 students obtained scores above the KKM and as many as 11 students obtained scores below KKM. In cycle 2 using the Problem Based Learning model and varied media as well using the *Teaching*

at the Right Level (TaRL) approach with the help of an interactive quiz platform (snakes and ladders) during the learning process, a total of 2 2 were obtained. students get the above grades KKM and as many as 5 students get scores below the KKM. There is an increase in the number of students who get a value above the KKM in each cycle.

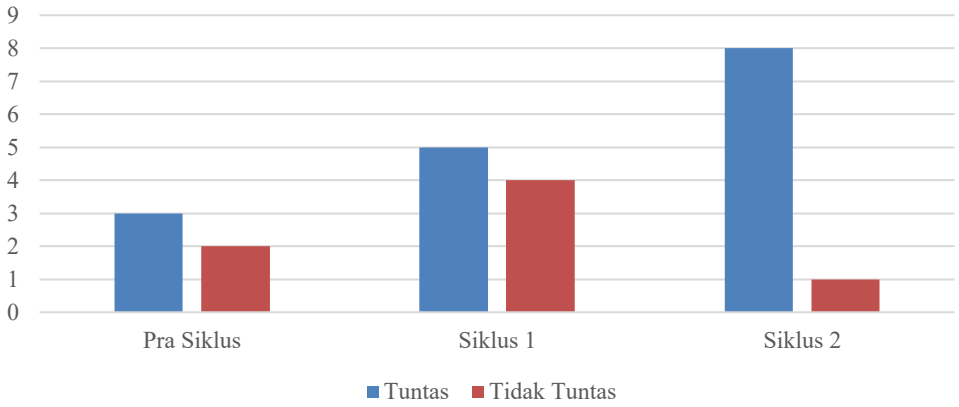

Figure 2. Histogram graph of the number of students who completed and did not complete

The results of the percentage of completion of class V.C students based on the school's minimum completion criteria can be seen in Table 2.

Table 2. Percentage of Learning Outcome Completion

Percentage Description
Pre cycle 45%
Cycle 1 55%
Cycle 2 85%

Based on table 2, the completion of pre-cycle student learning outcomes shows the percentage of completion results. by 45 %. Then in cycle 1 the results of the completion percentage were 55 %, that the standard learning completion is 75%. So it is expected that the success achieved is the success achieved is 75%. If it is not successful, the cycle is continued until it is 75% successful (Indrawati, 2015). In cycle 2 The percentage of completion obtained was 8.5 % . This shows a significant increase. significant. The average value obtained in each cycle can be seen in Figure 3 histogram graph as follows:

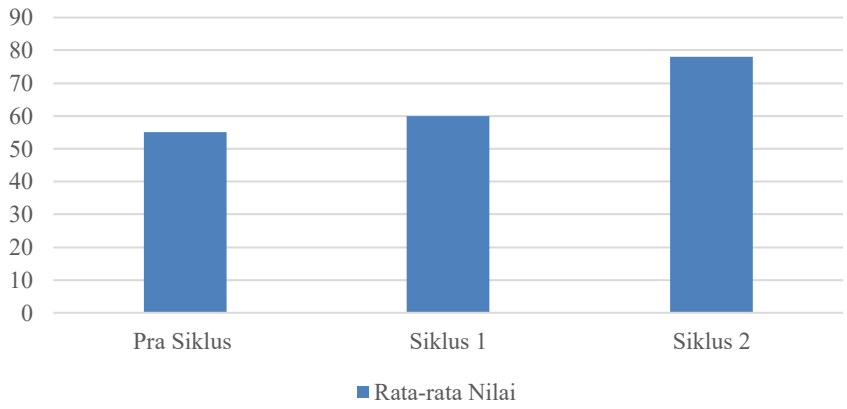

Figure 3. Histogram graph of the average value of each cycle.

Based on Figure 3, the information obtained in the pre-cycle was that the average score for class VC students was 55. In Cycle 1, the average score for class VC students was 60. In Cycle 2, the average score for class V.C students was 7.8 . So, in the implementation of the pre-cycle, cycle 1, and cycle 2, there was a significant increase in the average score of class V.C students.

Discussion

Based on the research results that have been presented, the improvements that occurred in all aspects of the assessment were due to improvements that were made as much as possible in cycle II. The application of the TaRL approach can help students be actively involved during the learning process, encourage students' self-confidence and learning motivation, and provide equal opportunities for students to develop themselves in equal groups. This is in line with research conducted by (Cahyono, 2022) which shows that the TaRL approach can increase students' learning motivation in the learning process. In addition, (Apriliani et al., 2024) in their research also showed that the application of the TaRL approach can have an effective influence on the Mathematics learning outcomes of grade IV students at SDN Pedurungan Kidul 01.

Outcome assessment Learning must be able to take into account all aspects of the learning domain (cognitive, affective, psychomotor). Students with good cognitive abilities tested in written exams are not necessarily able to apply knowledge. especially when facing everyday problems (Nasution, 2021). Classroom Action Research This is an effort to improve the learning outcomes of class V.C students in the subject of science using *the Teaching at The Right Level (TaRL) approach* assisted by interactive quizzes (snakes and ladders) at elementary school. Negeri 1 Palembang. Student learning outcomes are academic results achieved by students through exams and assignments, as well as question and answer activities that support the achievement of these learning outcomes (Dakhi, 2020; Widiastuti et al., 2021).

In the academic world, the idea often arises that educational success is not determined by achievement. students in obtaining a certificate or diploma, but that success can be measured in the cognitive domain. According to (Andriani & Rasto, 2019) the cognitive domain refers to intellectual learning outcomes and consists of six aspects: knowledge, understanding, application, analysis, synthesis, and evaluation. This emotional domain is related to with attitudes and values, the affective domain includes five levels of ability: receiving, responding or reacting, evaluate, organize, and characterize values or value complexes. Psychomotor domain includes motor skills, object manipulation, and neuromuscular coordination (connection, observation). Results learning can be used as a benchmark to identify and evaluate learning objectives (Nabillah & Abadi, 2019). As one of the criteria for measuring the success of the learning process, the results learning reflects the results of the learning process and shows the extent to which students , teachers, and the learning process learning, and educational institutions have achieved the educational goals that have been determined. Teaching at the Right Level (TarL) is a learning approach that discusses the level of student ability .

TaRL approach aims to improve literacy skills and knowledge. and students' numeracy . *The TaRL approach* aims to improve students' learning outcomes . The PBL or *Problem Based Learning model* is a learning model that uses problems as a trigger for learning. This model is centered on students and aims to explore the topics taught in depth . The results of the study using the classroom action research method, Classroom action research is collective and reflective research conducted by participants in a situation social to improve reasoning and justice in their educational and social activities, as well as their understanding of the activity and the situation in which the activity exists (Dista & Marta, 2022). In accordance with what Kemmis and Taggart put forward, action research procedures are divided into four stages of activity in one round (cycle), namely: planning - action and observation - reflection (Mulyatiningsih, 2021). So it is obtained with the *TaRL approach* to improving student learning outcomes that are very appropriate with the improvements made in each cycle so that they can achieve the indicators success that has been established. This study shows that the application of *the TaRL approach* can improve student learning outcomes .

In the pre-cycle, material about light and its properties is given . This learning is carried out to determine the initial abilities of students in science learning . The initial assessment uses a cognitive test with 10 questions in ABCD format. The pre-cycle results were obtained to assess students' basic skills in the science subject regarding the material of light and its properties before using the *Teaching at the... Right Level (TaRL)* during the learning process. At this stage, the researcher conducted initial testing with The aim is to collect comparative data on improving student learning outcomes , obtained as many as 1 2 students obtained scores above the KKM and as many as 1 5 students get scores below KKM. P recentage student learning outcomes in pre-cycle activities.

In cycle I, the material on seeing through light was given and in cycle II, the material on sound and its properties was given , then what is the solution for this? to overcome these problems which are packaged with games that require each group to work together and work in groups in completing LKPD. At the end of each cycle, an evaluation test is given to measuring the success of the Teaching at The Right Level approach assisted by interactive quizzes (interactive quizzes) . Observation on the results of students ' science learning in implementing *the Teaching at The School approach. Right Level* is assisted by interactive quizzes (snakes and ladders) and uses instrument guidelines that have been adjusted to indicators of student learning outcomes. In cycle 1 using the Problem Based Learning model and media that varies and uses the *Teaching at the Right Level (TaRL) approach* and evaluation during the process learning using a question sheet consisting of 5

different questions , obtained 1.6 students obtained the value is above the KKM and as many as 11 students get a value below the KKM. per percentage of learning outcomes of participants students in pre-cycle activities , as many as 35% of students fall into the less than criteria, as many as 8% of students students get less criteria. As many as 35% of students fall into the good criteria. As many as 22% students are included in the very good criteria. With this, there are no students who get the very good criteria. less, this is good, this percentage shows an increase from pre-cycle activities.

In cycle 2, the *Problem Based Learning model* and various media were used, as well as using... *Teaching at the Right Level (TaRL)* approach with the help of interactive quizzes (snakes and ladders) . Better student learning outcomes can be created through application of interesting learning materials. One of the interesting learning materials such as using interactive quiz games . Its use in learning materials is still very low. This interactive quiz game usually uses a laptop or *smartphone* and can be played anytime and anywhere. anywhere. During the learning process , 2 2 were obtained students get the above grades KKM and as many as 5 students get scores below the KKM. the percentage of student learning outcomes is 57% of students get very good criteria. As many as 18% of students get good criteria. As many as 14% of students received sufficient criteria. As many as 11% received insufficient criteria. There was an increase in the use of the Teaching at The Right Level approach assisted by interactive quizzes as an effort to improve student learning outcomes. There was an increase in the number of students who received values above KKM in each cycle.

The results of this study showed that before using *TaRL ,* many students were lacking paying attention to the learning process, there are still many students who lack focus so that the learning outcomes are low. what they get is not optimal. After applying the TaRL approach in learning with combining interactive quizzes as a more interesting evaluation tool and creating a new nuance fun for students is one of the learning media that makes things possible said. Student learning activities are activities a student- driven learning process that involves emotional skills, enhances student creativity , improves skills, and achieves creative students who are able to master concepts. With implementing collaborative learning by combining approaches, models, methods and media interactive has been proven to make students more active in implementing the overall learning process. The results of the study showed that the completion of the learning outcomes of students in the pre-cycle was obtained by the percentage of completion results. by 45 %. Then in cycle 1 the results of the completion percentage were 55 %, that the standard learning completion is 75 %. So it is expected that the success achieved is the success achieved is 75 %. If it is not successful, the cycle is continued until it is 75 % successful (Indrawati, 2015). In cycle 2 The percentage of completion obtained was 8.5 % . This shows a significant increase. in each cycle carried out, and the learning completion can be achieved. This research has an impact in the development of interactive learning processes, with an approach that is able to accommodate all the different characteristics of students so that learning objectives can be achieved and learning outcomes can achieve maximum results.

4. CONCLUSION

Based on the results of the research that has been conducted in two cycles, it can be concluded that the application of the TaRL approach assisted by interactive quizzes (snakes and ladders) can improve the learning outcomes of class VC students of SD Negeri 1 Palembang in the subject of Science. The improvement in student learning outcomes occurs gradually in each cycle, where in the pre-cycle only 45% of students have completed it while 65% have not completed it. After cycle I, the percentage of student completion increased to 55% while 45% have not completed it until in cycle II, the percentage of student completion increased significantly to 85% and 15% have not completed it. For further research, it is better to conducting research by utilizing digital media or *platforms* as a more supportive tool interesting in the learning process so that the expected results will be in accordance with the desired goals.

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