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Research Article

Implementation of Stad Cooperative Learning Model to Improve Science Learning Outcomes of Grade VI Students at Sd Negeri 37 Bengkulu City

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Try Kusuma*, Ria Apriani, Denny Hotnida

Abstract:
This study aims to improve the learning outcomes of grade VI students in Science learning through the STAD (Student Teams Achievement Divisions) model at SD Negeri 37 Bengkulu City. This research is a Classroom Action Research (CAR) conducted in four stages: planning, implementation, observation, and reflection. The subjects of the study were 32 students in grade VI. Data collection techniques included observation, documentation, and tests. The improvement in cognitive learning outcomes of grade VI students at SD Negeri 37 Bengkulu City was observed from the pre-cycle activity, where only 13 out of 32 students achieved mastery with a percentage of 40.63%. The average learning outcome achievement in Cycle I increased to a mastery rate of 71.88%, which further increased to 90.63% in Cycle II. The study met the success criteria set by the researchers at 80%, with a final achievement in Cycle II of 90.63%. Therefore, the research process with the implementation of the STAD cooperative learning model was successful and followed the expected procedure.
Keywords: Learning Outcomes, Science (IPAS), STAD Model

1. INTRODUCTION

Education has a crucial role in providing a positive impact on students while encouraging human development in various aspects of personality and areas of life (Sriana, 2022). Education has a direct and palpable impact on people's lives, communities, and countries (Amelia, 2019). People can maximise their potential and enhance their quality of life by getting an education (Siregar et al, 2024). Teachers in primary schools, especially those teaching grade VI, have a big job to do in terms of getting their students ready for college. One of the common problems is pupils' poor academic achievement, which is a result of fewer innovative teaching strategies. The widespread practice of lecture-based instruction, which falls short of actively involving students, frequently results in low student participation in the learning process and subpar learning outcomes (Azizah, 2019).

A teaching strategy that may raise student engagement and promote learning outcomes is required to comprehend and address social, economic, and environmental challenges. The Student Teams Achievement Divisions (STAD) cooperative learning paradigm is one example of such a model. According to Agustina (2020), the STAD cooperative learning paradigm places a strong emphasis on student participation in small groups. Under this paradigm, where students learn in groups but are assessed individually, there are aspects of both competitiveness and teamwork. When it is used, students are grouped according to their social and academic backgrounds and are expected to support one another in achieving learning objectives (Rakhman, 2015). Because students are more engaged in the learning process and driven to help one another understand the content, it is thought that the STAD cooperative learning approach improves learning outcomes (Aningsih, 2023).

Initial observations at SD Negeri 37 Bengkulu City show that grade VI students' learning outcomes in a number of disciplines are still low, especially when it comes to comprehending abstract science learning (IPAS). Kline (Runtukahu, J Tombokan dan Kandou, 2014), asserts that IPAS is understood as information that is helpful to others rather than knowledge that stands on its own (Sari, 2020). The average results of the daily assessments, which do not meet the Learning Completion Criteria (KKTP), make this clear. Boresome teaching strategies that don't actively involve pupils are one of the things causing poor

learning outcomes. Lectures make up the majority of instruction, which limits the chances for debate or group problem-solving among students (Yuliani, 2019).

It is anticipated that students will participate more actively in class discussions and group work presentations as a result of the STAD cooperative learning paradigm (Kudisiah, 2019). Furthermore, because assessments are given individually even in the face of group learning, the STAD approach empowers students to assume personal accountability for their comprehension of the subject matter (Wulandari, 2022). Students will be inspired to work harder in their studies in order to benefit their groups as a result. It is anticipated that the application of the STAD model will help improve students' social abilities, including cooperation, communication, and respect for the viewpoints of others (Pristiwanti, 2022).

These social skills are vital for children' growth, especially in the elementary education level, where they are learning to create good social relationships with their peers (Akhmad, 2020). Students learn socially and emotionally as well as academically through cooperative learning. Given this context, the purpose of this study is to enhance the learning outcomes of grade VI students at SD Negeri 37 Bengkulu by implementing the STAD cooperative learning paradigm. It is envisaged that by putting this concept into practice, low learning outcomes would be resolved and the calibre of the classroom learning process will also be improved.

2. MATERIAL AND METHOD

The goal of this Classroom Action Research (CAR) project is to use the STAD (Student Teams Achievement Divisions) cooperative learning approach to enhance the learning outcomes of grade VI students at SD Negeri 37 Bengkulu City . Thirty-three sixth-grade pupils from SD Negeri 37 Bengkulu City are the study's subjects. The subjects chosen were chosen in response to issues with students' low learning outcomes in the IPAS course, namely with regard to the subjects of the nervous system, skeleton, joints, and muscles. From July to August, the research was carried out at SD Negeri 37 Bengkulu City. Two rounds of preparation, action, observation, and reflection comprised the research process.

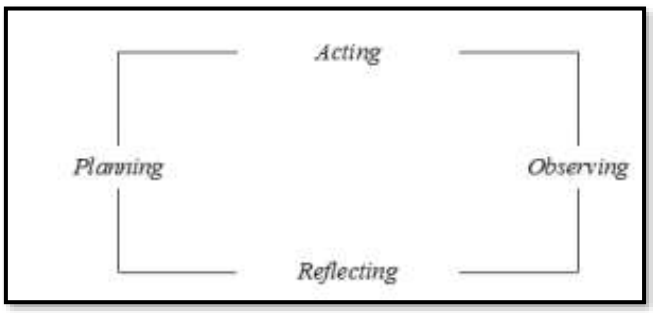

Figure 1. Action Research Cycle

Tests, documentation and observation are the main methods used in this research to collect data. The test results were analyzed by comparing the scores before and after implementing the Student Teams Achievement Division (STAD) learning model to measure improvements in student learning outcomes. At the end of each learning cycle, a test is given to evaluate the level of student learning achievement. In addition, observation notes were used to assess student participation in the learning process, which was carried out collaboratively by researchers and classroom teachers. Observations include aspects of cooperation between students in groups, interactions between students, and students' understanding of the material being taught.

Other supporting data includes documentation in the form of photographs of educational activities as well as additional notes documenting the implementation of actions during the research. The instruments used include learning outcome test sheets, which are designed based on the basic skills taught in each cycle, as well as observation reports that cover aspects such as individual accountability, participation in group discussions, and problem solving skills to assess student activities during the learning process. All data was analyzed using qualitative and quantitative approaches, where the results of observations and reflections were used as the basis for qualitative analysis to describe student participation and the learning process in depth.

In the meantime, the improvement in learning outcomes was ascertained using quantitative analysis, which involved computing the average scores of the students' learning outcome assessments for each

cycle. The percentage approach from the Ministry of Education and Culture (Mutmainnah&Ningsih,2023):

$$\text{Final Score} = \frac{Score\ Obtained}{Total\ Score} \times 100$$

The formula used to calculate the average learning outcomes of students is stated by Aqib (Gultom et al, 2023).

$$\mathcal{X} = \frac{\Sigma \mathcal{X}}{n}$$

Information:
$\mathcal{X}$ = Average value
$\Sigma\mathcal{X}$ = Total value of all students
ΣN = Total number of students

Student learning completeness percentage can be calculated using the following formula:.

$$\text{Average Score} = \frac{\sum \text{Student who complated the learning}}{\sum \text{All Students}}\ X\ 100\%$$

The learning outcomes of students in Cycle I attain an 80% success rate from the total number of students, which serves as the success indicator.

3. RESULT AND DISCUSSION

Pre-Cycle

Based on the results of the research that has been conducted, the following section explains the Classroom Action Research carried out by the researcher to improve the learning outcomes of students in the Science (IPAS) subject. This classroom action research was conducted in 2 cycles, namely Cycle I and Cycle II. Before the actions were implemented, the researcher conducted a pre-cycle. This was done to determine the initial condition of the research subjects. The researcher implemented conventional learning with teaching materials and textbooks. The pre-cycle was conducted on July 26, 2024, with a duration of 2 × 35 minutes. The results of the pre-cycle can be seen in the table below:

Table 1. Pre-Cycle Learning Outcomes

No.	Score	Frequency	Total Score	Percentage	Remarks
1.	>70	13	1100	40,63 %	Pass
2.	<70	19	870	59,37 %.	Fail
Total		32	1.970	100%.	
Average				**61, 56**	

Based on Table 1, the results obtained in the pre-cycle show that only 13 out of 32 students scored above the Minimum Competency Standards (KKTP), representing 40,63%. Meanwhile, 19 students scored below the KKTP, accounting for 59,37%. In this pre-cycle, the total score of all students was 1.970, with an average of 61,56.

Cycle I

Cycle I was conducted on July 30, 2024, with a time allocation of 2 × 35 minutes. A total of 24 students participated in this learning session. During Cycle I, the researcher followed a systematic flow from action planning, implementation, data collection, to reflection. Before carrying out the action, the researcher consulted with the teacher to discuss the STAD model that would be applied and proceeded to create learning materials. During the implementation, the students showed considerable enthusiasm for the ongoing learning activities. The use of the STAD learning model made the students more motivated and active in their learning. However, there were still some shortcomings during the learning activities in Cycle I, indicating that the learning process was not yet fully optimal.

Table 2. Learning Outcomes of Cycle I

No.	Score	Frequency	Total Score	Percentage	Remarks
1.	>70	23	1.980	71,88 %	Pass
2.	<70	9	500	28,12 %.	Fail
	Total	32	2.480	100%.	
	Average			**77,5**	

Based on Table 2 above, the results obtained in Cycle I show that 23 out of 32 students scored above the Minimum Competency Standards (KKTP), representing 71,88%, while 9 students scored below the KKTP, accounting for 28,12%. The total score of student learning outcomes in Cycle I was 2.480, with an average score of 77,5.

Cycle II

Cycle II was conducted on August 6, 2024. The steps taken in Cycle II were the same as those in Cycle I; however, the difference between the two cycles lies in the planning and implementation stages. The planning in Cycle II was based on the results of the reflection from Cycle I, ensuring that the shortcomings from Cycle I were not repeated. Based on the learning outcomes achieved in Cycle II, the indicators of success set by the researcher, which was 80%, were successfully met, with 29 students achieving completeness and 3 students not achieving completeness. The improvements made in this cycle were successful, eliminating the need for further research in subsequent cycles. Below is the table of results obtained in Cycle II:

Table 3. Learning Outcomes of Cycle II

No.	Score	Frequency	Total Score	Percentage	Remarks
1.	>70	29	2.620	90,63 %	Pass
2.	<70	3	180	9,37 %.	Fail
	Total	32	2.800	100%.	
	Average			**87,50**	

Based on the table, it can be seen that the percentage of students who scored above the Minimum Competency Standards (KKTP) or were deemed complete is 90,63%, with a total of 29 students. In contrast, the percentage of students who did not achieve completeness or did not reach the KKTP is 9,37%, totaling 3 students. Therefore, the completeness percentage obtained in Cycle II is 90,63%. This indicates that the implementation of learning in this cycle using the STAD model was successful. This is in line with research conducted by (Pardiyana, 2020), which states that the use of the STAD type cooperative learning model can increase teacher activity in managing learning, student activity during the learning process, and student learning outcomes.

4. CONCLUSION

The implementation of the STAD cooperative learning approach in grade VI at Bengkulu City's SD 37 has greatly enhanced the academic performance of the students. This technique works well for encouraging student cooperation, encouraging active learning, and improving academic performance. To maximise learning even further, it is advised that teachers stick with this model and adapt it to the demands of the classroom. It is clear that grade VI students at SD Negeri 37 in Bengkulu City have improved in their cognitive learning outcomes because only 13 out of 32 students (40.63%) attained completeness in the pre-cycle. In Cycle I, the average learning outcomes increased to 71.88%, and in Cycle II, they reached 90.63%. The research has obtained a final percentage of 90.63% in Cycle II, meeting the researcher's performance indicator of 80%. As a result, the research process involving the use of the STAD cooperative learning model is considered successful and has gone smoothly in accordance with the planned course of events.

The findings support a number of recommendations, including the suggestion that educators encourage group collaboration among their pupils by regularly implementing the STAD model. Infrastructure and facilities that encourage cooperative learning activities are needed for schools. For example, classroom layouts that allow for more flexibility in group work are needed. Similar experiments with

additional variables in different classrooms or schools can be carried out by other researchers to evaluate the efficacy of this model in different scenarios with different student characteristics.

AUTHOR INFORMATION

Corresponding Authors

Try Kusuma, Universitas Bengkulu, Indonesia
https://orcid.org/0009-0009-3428-8771
Email: kusumatry99@gmail.com

Authors

Ria Apriani, SD Negeri 37 Kota Bengkulu, Indonesia
https://orcid.org/0009-0007-8110-5582
Email: riaapriani04admin.sd.belajar.id

Denny Hotnida, SD Negeri 37 Kota Bengkulu, Indonesia
https://orcid.org/0009-0009-3003-0343
Email: dennytampubolon12@guru.sd.belajar.id

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