

Improving Student Cooperation Attitude Using Problem-Based Learning Models (PBL) in Class I Elementary School

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1. Abstract

This research is motivated by the lack of student cooperation in learning mathematics. The purpose of this study was to improve the cooperative attitude of students through the *Problem Based Learning* (PBL) model in the IB class of Annual Public Elementary Schools. This research is a classroom action research which consists of 2 cycles, each cycle consisting of 2 meetings. The research subjects were class IB students in mathematics with a total of 27 students. The object in this study is the increase in student cooperation in learning mathematics. Data collection techniques using observation and documentation. Data analysis used descriptive qualitative and quantitative analysis. The results of this study indicate that the problem-based learning model can improve the cooperation of students in class IB at SD Negeri Tahunan. This is evident from the results of observations made in each cycle there is a significant increase. The improvement of the learning process is seen from the liveliness and application of indicators of cooperative attitude according to the instrument. Improved results can be seen from the achievement of students on each indicator of the ability to cooperate in each cycle. This increase can be proven from the increase that occurs in each cycle, from cycle I where the average achievement increases to a very good category in cycle II. So it can be concluded that the PBL model can improve the cooperative attitude of students in class IB at SD Negeri Tahunan.

Keywords: *Collaboration, Mathematics, Problem Based Learning Models*

2. Introduction

Education has a very important role for the continuity of human life. Starting from success in the field of education, a nation becomes advanced. Through education, quality human resources are printed to become the driving force for the progress and prosperity of the nation. Based on the Law of the Republic of Indonesia Number 20 of 2003 Article 1 Paragraph 1 concerning the National Education System: Education is a conscious and planned effort to create a learning atmosphere and learning process so that students actively develop their potential to have religious spiritual strength, self-control, personality , intelligence, noble character, and skills needed by himself, society, nation and state. By paying attention to the contents of Law Number 20 of 2003 Article 1 paragraph 1, it is only natural that educators and prospective educators have a difficult task to realize the learning process which will later be felt the benefits in efforts to improve the quality of life and life in the nation and state. That is why it is necessary to have the nature, attitude and spirit of cooperation within the two individuals of the Indonesian nation in general and students in particular.

Increasing the quality of education can be seen from the learning outcomes of students. while student learning outcomes depend on the teaching and learning process. The results to be obtained in the learning process are knowledge and changes in the behavior of students. In line with the goals of national education, it is necessary to develop a learning and teaching climate that can foster self-confidence and establish student cooperation. According to Lewis Thomas and Elaine B. Johnson (2021: 55) collaboration is a coordinated effort among members of a group or community that is directed to achieve a common goal. It further states that cooperation is a form of social interaction in which the goals of one group member are closely related to the goals of other group members or the goals of the group as a whole so that an individual or group can

solve a problem.

Based on the results of observations made by researchers at SD Negeri Tahunan, it was found that students in class 1 B when given group assignments by the teacher there were still some students who did not want to discuss and cooperate with other students and chose to work on them independently. There is no division of equal tasks in study groups. The sense of responsibility of students towards their group is also still low. Students have not helped each other when experiencing difficulties in learning mathematics. This shows that the aspects of student cooperation are still low, namely positive attitudes towards group work, joint responsibility in solving problems, mutual contribution and maximum deployment of abilities. Based on the description of the problems that have been described, the authors are interested in conducting Classroom Action Research in learning in class IB of SD Negeri Tahunan to increase collaboration using the Problem-Based Learning model in learning mathematics. The PBL learning model emphasizes problem-oriented learning. PBL emphasizes learning that makes problems a context for students to learn critical thinking and problem solving skills, as well as to acquire knowledge. According to Wulandari, et al (2023: 860) the *Problem Based Learning (PBL)* learning model is a learning model that aims to improve students' critical, creative and collaborative thinking skills in solving problems. In the PBL model, students will be given a problem or situation that they must solve by working in groups.

3. Methods

3.1. Participants and context

This research was conducted in class 1 B of SD Negeri Tahunan which is located at Jalan Gajah No. 44, Tahunan, Umbulharjo District, Yogyakarta City with a total of 27 students.

This research was conducted in the even semester of the 2022/2023 school year. This study used a class action research (CAR) approach which was divided into 2 cycles. Each cycle consists of planning, action, observation and reflection. Termination of the cycle is carried out if the research results have reached the predetermined success indicators.

3.2. Material

The research design used was a classroom action research model by Kemmis and Mc. Taggart (1988). This model divides one cycle of classroom action research procedures into four stages, namely planning, acting, observing, and reflecting (Trianto, 2011: 223).

1. Action planning (planning)

Action planning (planning) is a series of planned actions that can improve things that have happened and observed before. In preparing the action plan, it must emphasize the characteristics of a strategy that is able to answer the challenges or problems that arise so that the action plan must be forward-oriented. The things that are arranged in the action plan include those related to learning approaches, learning methods, learning techniques or strategies, learning media, learning materials and so on. This Action Planning is almost the same as the preparation that needs to be done when going to carry out teaching and learning activities.

2. Implementation of Action (acting)

Implementation of the action is the application of the action that has been planned which can include learning strategies, teaching materials, and so on. The implementation of the action needs to be carried out in a controlled and thorough

manner and is carried out with care, because it is a practical activity that is planned and assisted or refers to a rational and measurable plan.

3. Observations

Observation or observation is an act of documenting the implications of the action given to the research subject. Observations can be carried out by researchers alone or by collaborating. At the time of observation, the researcher recorded all the events or things that happened during the study. Observation or observation needs to be done carefully to overcome the limitations of the actions taken by the researchers. Good observation is observation that is flexible and open in observing things that happen in research.

4. reflection

The fourth step in classroom action research is reflection. Reflection is a means used to review the actions that have been carried out by researchers on research subjects that have been recorded through observation or observation. In the reflection activity the researcher tries to find a logical line of thought to solve the problems and obstacles that arise in planning and action. The results of reflection activities can give rise to the possibility that this will happen to the research subject, for example being terminated, modified or continued to the next level.

3.3. Data Collection and analysis

Data collection is done through observation and documentation. The following is an explanation of the data collection carried out:

1. Observations

Observations were made to observe student activity during learning by applying a problem-based learning model in class 1 B learning mathematics

2. documentation

Documentation data in the form of photos or pictures obtained when students carry out learning activities.

3.4. Ethical Considerations

The research instrument is an observation sheet used as a guide in collecting data. With the observation sheet, researchers will obtain data on student activities during the learning process and student behavior during collaborative learning activities. In addition, researchers obtain data through documentation techniques in the form of photos and videos that are used to visually describe the conditions that occur during the learning process and look in detail at the activities carried out by students during the learning process, namely when carrying out group activities in accordance with the syntax of the learning model, namely the learning model based problem.

3.5. Limitations to the Study

The research hypothesis is that the use of a problem-based learning model (PBL) can improve students' cooperative attitudes in first grade mathematics learning.

4. Results and Discussion

Based on the results of learning activities by applying a problem-based learning model with the aim of evaluating student collaboration through problem-based learning models in mathematics. Data from observations of students' attitudes towards learning mathematics

using a problem-based learning model are outlined in the following table:

**Table 1. Results of observations of cooperative attitudes
class I students cycle I**

Rentang Skor	SIKLUS 1				Kategori
	Pertemuan1		Pertemuan2		
	F	P(%)	F	P(%)	
00-04	0	0	0	0	Kurang
05-09	11	40,74	8	29,63	Cukup
10-14	12	44,44	8	29,63	Baik
15-20	4	14,81	11	40,74	Sangat baik
Jumlah	27	100	27	100	

The results of observations about the cooperative attitude of students in the first cycle of the first meeting showed that around 40.74% of students showed a fairly good cooperative attitude, around 44.44% showed a good cooperative attitude, and around 14.81% showed a very good cooperative attitude. Good. However, at the second meeting there was a decrease in the attitude of cooperation in most students. Even so, there was an increase in students who had previously shown a very good cooperative attitude. A comparison of the two cycles can be seen in Figure 1

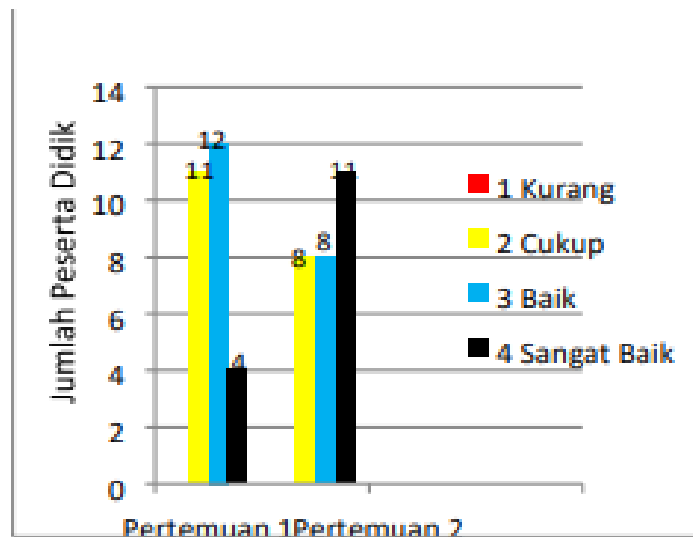


Figure 1 Graph of the comparison of elbows 1 meeting 1
and meeting 2

In cycle II the first meeting, there were 13 students or around 48.15% who showed good cooperative attitude, while 14 students or around 51.85% showed very good cooperative attitude in the score range of 15-20. At the second meeting, as many as 10 students or around 37.04% showed good cooperative attitude in the score range 10-14, while 17 students or around 62.96% showed very good cooperative attitude in the score range 15-20. Comparison of the two meetings can be seen in Figure 2.

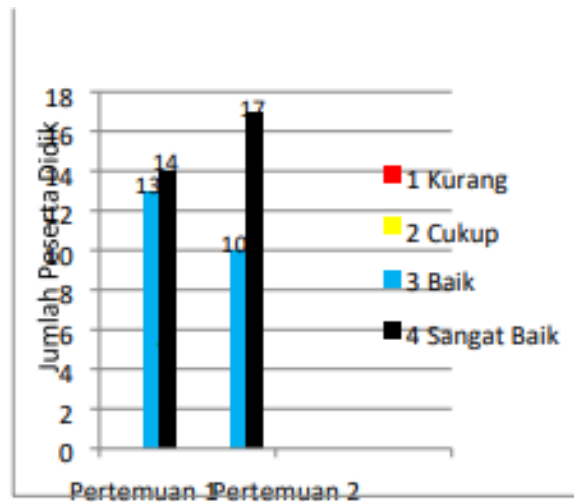


Figure 2 Graph comparison of cycle II meeting 1 and meeting 2

the results of observing students' cooperative attitudes from cycle I and cycle II using a problem-based learning model can be seen in the following diagram.

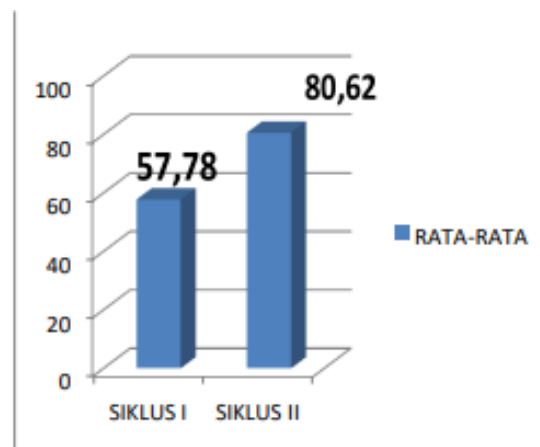


Figure 3 Graph of the average cooperative attitude of students cycle I and cycle II

From the analysis of Figure 3 on the observation of students' cooperative attitudes, it can be concluded that there was an increase in the classical percentage values from cycle I to cycle II. In cycle I, the percentage that reached the good category was 57.78%, while in cycle II it increased to 80.62% in the very good category.

From the analysis using observation sheets, the average result of observing the cooperative attitude of class IB students from cycle I to cycle II increased by 57.78% to 80.62%. There was an increase of 22.84% from cycle I to cycle II.

At the first meeting of cycle I, of the 27 students observed, there were 4 students who showed a cooperative attitude in the very good category, with a percentage of 14.81%. These four students followed the learning process very well and seriously. During group activities, they are obedient and careful in following the instructions and directions from the teacher. When participating in group discussions, they show a very good cooperative attitude in communicating, contributing ideas, appreciating the help of friends, appreciating participation, and allowing space for other friends to contribute to the group.

At the second meeting of cycle II, there were 17 students who showed an attitude of cooperation in the very good category, with a percentage of 62.96%. All students experienced an increase in the value of the attitude of cooperation. This increase was due to efforts to improve cooperative attitudes, especially in terms of communicating, contributing ideas, appreciating the help of friends, appreciating participation, and providing opportunities for other friends to contribute to the group. Therefore, research using the Problem Based Learning model applied by researchers succeeded in increasing the cooperative attitude of class I B students.

5. Conclusion

The results of the classroom action research conducted on class IB students in elementary schools show that the use of the Problem Based Learning model succeeded in increasing their cooperative attitude in mathematics during the 2022/2023 school year. Therefore, it is suggested to students to take learning with this model seriously, in order to improve the attitude of cooperation in group activities.

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