Increasing Student Cooperation Through A Project-Based Learning Model with the Theme of Ecosystems

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Article Info	ABSTRACT
	Purpose of the study: This research is based on the fact that there are still many students class VA elementary school less able to work well together and the creation of learning conditions that are less comfortable for some students. Students who are still not able to work well together, teachers put forward the cognitive aspects of students only, without improving the affective and psychomotor aspects. **Methodology:** This study is a classroom action research consisting of three cycles, where the data taken in the form of observation data through student collaboration observation sheet and teacher observation sheet conducted in each learning process using a project-based learning model. **Main Findings:** The results of this study indicate that the implementation of project-based learning model can improve the cooperation of VA elementary school students. Based on students' observation sheets, student cooperation showed an increase, as evident from the cycle I of student cooperation 59.4%, increased in cycle II to 72.8%, and increased again in cycle III 78.8% **Novelty/Originality of this study:** In this case it can be concluded that the project-based learning model can improve student cooperation on the theme of ecosystem in VA elementary school class.

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1. INTRODUCTION

Cooperation is one of the various social behaviors and elements of the personality of the Indonesian nation. This is very visible in the life of Indonesian society [1]. Cooperation is a form of social interaction, which is something that is commonly done in our society. Collaboration occurs when students are faced with issues of common interest [2]. Cooperation in a group is needed in the learning process. By working together, the tasks given by the teacher can be solved together so that it can be relieved.

In addition, by collaborating students can provide information on what experiences students have will definitely be different and this is where the advantage in collaborating can exchange ideas in groups with one student with another student so that students who don't know will know while students who don't know will tell [3]. Therefore, the process of cooperative learning in groups will make it easier for students to learn. In connection with the above, social interaction is needed in everyday life, by interacting students are able to communicate and collaborate with other students.

When the teaching and learning process takes place, collaboration is very important [4]. But in the learning process, teachers often forget the social aspect. In this study, researchers made observations at SD Negeri 13/I Sridadi from 1-10 December 2015, there were 26 students in class IVA. When the researcher made

observations, he found problems related to the lack of cooperation skills during the teaching and learning process [5]. The obstacles faced by students when working together in general are there is no match in the team, the distribution of tasks in the team is uneven, not respecting each other's opinions, not respecting friends when talking, friends talking to themselves when friends in a team are explaining, doubt and fear in expressing opinions, embarrassed to ask the teacher and unable to make decisions in the team [6] [7].

Many schools are still concerned only with cognitive development and children's social development is still not given enough attention [8]. In fact cooperation is one of the most important social behaviors to be developed in children from an early age. Increasing cooperation is important. It is intended that through student cooperation in teaching and learning activities, students will more easily interpret the lessons taught by the teacher.

In this study, researchers saw the cause of this problem, namely the teacher's lack of motivation and approach to students, both from the teacher and his friends [9]. Lack of guidance and direction from the teacher makes students often joke during group discussions. When children do assignments from the teacher and the teacher divides them into several groups, many students protest because they want to be in groups only with close friends, do not want to join the group that has been set by the teacher and disturb other group members, there are some students who still divide tasks to do it yourself, some don't participate in doing their assignments they are just busy playing pranks on their friends [10]. Therefore the role of the teacher is very important to understand the difficulties, weaknesses and obstacles in developing students' self. Based on the elaboration made, the research aims to; (1) observing how students cooperate in class, (2) looking at the effect of using problem based learning models in increasing student cooperation in class.

2.   RESEARCH METHOD

This classroom action research was conducted at SD Negeri 55/1 SRIDADI. This classroom action research was conducted in class V in Science subjects. The subjects in this classroom action research were fifth grade students at SD Negeri 55/1 Sridadi with a total of 26 students, consisting of 17 male students and 9 female students. This research is a classroom action research. This research is carried out in three cycles. In one cycle there are two learning cycles or two meetings. The action plan for each cycle in this classroom action research consists of four stages, namely planning, implementing, observing, reflecting [11].

Data collection techniques used in this study through observation and documentation. Observation is defined as systematically observing and recording the symptoms that appear on the object under study. Observations in this study were carried out to observe the collaboration skills shown by students during the learning process. Observations were made at each meeting. The data obtained from this observation is in the form of notes on students' collaboration abilities in observation sheets that have been prepared and carried out by students. Documentation is a data collection technique that is not directly aimed at research subjects, but through documents [12]. Data obtained through documents in the form of photographs of learning activities. Documentation was also carried out on documents related to classroom action research in the form of group investigation answer sheets and group lists [13].

In this study, the data taken was in the form of research results on increasing student collaboration in each cycle. The data analysis was carried out with the following steps: (1) recapitulating the scores obtained by students, (2) calculating the cumulative score, (3) converting the total score to an absolute standard using the formula: (4) calculating the class average value by using the formula:

$$\frac{Total\ score}{Highest\ score} \times 100 = final\ score$$

(4) calculate the class average value using the formula: $x = \frac{\sum x_i}{n}$

Description: x = Average value
                    $\sum x_i$ = Cumulative Value
                    n = Number of students

The calculation results for each cycle are then compared. These results were then used as the basis for knowing the percentage of increased student collaboration using a project-based learning model for fifth grade students at SD Negeri 55/I Sridadi.

3.   RESULTS AND DISCUSSION

Data obtained through observation and assessment of students in this first cycle, students who have a sense of cooperation reach a percentage of 59.4%. Cycle I is used as an improvement in the next cycle, in this

case there are several obstacles that must be fixed in cycle II, namely there are still some students who are still joking during group discussions, students are less interested and happy in working because the materials used in making products are limited , and students also lack attention and focus so that the time provided is less [14] [15]. Based on some of these obstacles, researchers and collaborative teachers made improvements in cycle II.

The data obtained from the observation and assessment of students in this second cycle, students have a sense of student cooperation reaching a percentage of 72.8%, an increase from cycle I which only got 59.4%. The increase in student collaboration was 13.4%, this research was not successful because it had not reached the success criteria set by the researchers, namely 75%. There were still a number of obstacles encountered at the meeting in cycle II, including students who sat at the back still seemed to pay less attention when the teacher was explaining the material and students' activeness in the learning process was still not optimal [16] [17]. It can be seen that only a few students dare to ask and answer questions from the teacher.

After obtaining the constraints that occurred during the research at each cycle II meeting, the researchers and teacher collaborators planned improvements in the next cycle.

In cycle III, the data obtained from observation and assessment of students who have a sense of cooperation reached a percentage of 78.8%, an increase of 6% from cycle II. Even though there are still some obstacles, some of these obstacles are that the media used is considered not optimal in helping teachers in learning and also from the students themselves who are not all active during meetings. But at least the learning that is done makes students more sensitive to their friends than at the first meeting.

Table 1.Comparison of Teacher Observation Results in Cycles I, II, III

Phase	Total score	Completeness of teaching activities	Category
Cycle I meeting I	13	48%	Enough
Cycle I meeting II	15	52%	Enough
Cycle II meeting I	17	68%	Enough
Cycle II meeting II	19	76%	Good
Cycle III meeting I	21	84 %	Good
Cycle III meeting II	22	88 %	Very Good

Based on the results of these observations in cycle III which was held for 2 meetings, there was an increase in teachers at each meeting, meeting I got 84% and meeting II with 88%. The teaching and learning activities using the project-based learning model carried out by the teacher were good after improvements were made to the learning activities in cycle II.

In the preliminary stage, the teacher does apperception and motivation well, the teacher also conveys the learning objectives clearly [18] [19]. The teacher has also carried out the core activities well, the distribution of groups to students according to the expected time, supported by students who can be managed properly [20] [21]. In closing activities the teacher is getting better from cycle II, the teacher is more open in question and answer and more interactive with all students [22] [23].

Based on the results of observations that students' interest has increased from each cycle [24] [25]. This can be seen from the score of student cooperation in each cycle [25] [26]. This project-based learning model makes student learning experiences meaningful, students not only learn concepts but can create projects or products to facilitate these concepts [27] [28]. This is in accordance with the opinion of Jean Piaget who stated that individual intellectual development in elementary school students is at the concrete operational level [29] [30]. The following presents the results of student interest scores during classroom action research conducted by researchers in the following table:

Table 2. Results of Student Collaboration Recapitulation

Phase	Percentage	Increasing
Cycle 1	59.4	-
Cycle 2	72.8	13.4
Cycle 3	78.8	6

4. CONCLUSION

Based on the results of the research conducted, it can be concluded that the project-based learning model can improve student collaboration. Improving the cooperation of class VA students at SDN 55/I Sridadi was carried out in the following steps: (1) the project planning stage (2) the implementation stage and (3) the evaluation stage; where these stages are carried out by providing more flexible leeway in selecting materials for making products and providing intensive guidance at each stage. The increase in student cooperation in this study was shown from the average achievement of the results of observations of student cooperation in cycle I,

which obtained a total of 59.4%. After that, cycle II was carried out with a result of 72.8% with these results apparently having not reached the criteria of success so that improvements were made in the reflection of cycle II, the results of observations in cycle III increased rapidly to reach 78.8%. From the results of this study, it is proven that applying a project-based learning model can increase the cooperation of class VA students at SD Negeri 55/I Sridadi.

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