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Application Of The Project-Based Learning Model To Increase VA Students' Creativity In Natural Science Learning At Sdn 66/IV Jambi

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Penerapan Model Pembelajaran Berbasis Proyek untuk Meningkatkan Kreativitas Siswa Kelas Va Pada Pembelajaran IPA Kelas VA Sdn 66/IV Kota Jambi

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ABSTRACT

Classroom Action Research on VA SDN class students in natural science learning was based on initial observations, which show the students' low creativity when the teacher was still dominant in explaining the material and many students were still sitting silently. The average student's activity level is only 50%. This shows that students' creativity is still low. Therefore, the learning model that can increase students' creativity, especially in natural science learning, is Project-based Learning (PJBL). This research is Classroom Action Research to determine the effect of the PJBL model on increasing VA elementary students' creativity. This research was conducted at SD Negeri 66/IV Jambi in April 2023. The research data was collected by observing student creativity in the learning process, teacher interviews, and documentation. The research data were analyzed qualitatively and quantitatively. The research results indicate that using the PJBL model in the learning process can increase student creativity. This improvement can be seen in data analysis for each meeting cycle. The first meeting in cycle I was 35% and the second meeting was 65% with an increase of 30%. In cycle II, the first meeting was 85% with an increase of 20% and the second meeting was 100% with an increase of 15%.

Keywords: PJBL, student creativity, natural science learning, elementary school

Penelitian Tindakan Kelas pada siswa kelas VA SDN pada pembelajaran IPA yang dilatarbelakangi observasi awal yang menunjukkan rendahnya daya kreativitas siswa, dimana pembelajaran masih dominan guru menjelaskan materi dan siswa masih banyak yang duduk diam. Rata-rata siswa yang memiliki keativitas hanya 50%. Hal ini menunjukkan masih rendahnya kreativitas siswa. Oleh karena itu, model pembelajaran yang dapat meningkatkan daya kreativitas siswa khususnya pada pembelajaran IPA adalah *Project Based Learning* (PJBL). Penelitian ini merupakan Penelitian Tindakan Kelas dan bertujuan untuk mengetahui pengaruh model PJBL untuk meningkatkan kreativitas siswa pada kelas VA SDN. Penelitian ini dilakukan di SD Negeri 66/IV Kota Jambi pada April 2023. Data penelitian dilakukan dengan cara melakukan observasi kreativitas siswa dalam proses pembelajaran, wawancara guru, dan dokumentasi. Data pada penelitian dianalisis secara kualitatif dan kuantitatif. Hasil penelitian menunjukkan bahwa dengan penggunaan model PJBL pada proses pembelajaran dapat meningkatkan kreativitas siswa. Peningkatan tersebut dapat terlihat pada analisis data setiap siklus pertemuan. Siklus I pertemuan pertama sebanyak 35%, siklus I pertemuan kedua 65% dengan peningkatan sebanyak 30%. Pada siklus II pertemuan pertama 85% dengan peningkatan 20% dan pertemuan kedua sebanyak 100% mengalami peningkatan sebanyak 15%.

Kata Kunci: ***PJBL, kreativitas siswa, pembelajaran IPA, sekolah dasar***

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INTRODUCTION

Efforts to achieve educational goals are carried out through the learning process. Learning is a process that involves a series of actions carried out by teachers and students on the basis of reciprocal relationships in educational situations in order to achieve the desired learning goals. One of the learning processes in elementary schools is learning Natural Sciences. In elementary schools, science learning is a process that emphasizes providing direct experience to develop competencies to understand the natural environment scientifically. Aryanto (2016:134) said "Science learning is learning that wants students to be involved directly in systematic stages and produce new discoveries about nature in order to achieve effective learning goals.".

In reality, the science learning process in the VA class of SD Negeri 66/IV Jambi City appears to be that learning is still centered on the teacher. It appears that the teacher's learning activities involve more talking, explaining material, and giving assignments where students just sit, listen, take notes and memorize. This causes a lack of student creativity in learning, with the emergence of feelings of laziness and boredom, when the teacher explains that students are not paying enough attention, students are less willing to ask the teacher about the ongoing lesson material, and students are more silent and only focus on the teacher.

Based on observations carried out on 1-2 November 2022 in the VA class of SD Negeri 66/IV Jambi City, it can be seen that out of 34 students, only 12 were able to answer the questions given by the teacher when explaining the material. When the teacher gives assignments to students, there are 9 people who can answer questions in different ways, such as when one student has answered correctly and then he answers again with a different answer. Another learning activity that was observed was when the teacher asked students to present the results of discussions from their respective groups, it was seen that only 6 people were able to express opinions or new ideas. This was seen when they responded to the group presenting in front of the class. When collecting assignments from teachers, students also do not write them neatly and correctly.

The low level of student creativity is a problem that needs to be corrected. This is because creativity can make students have great curiosity, create various ideas to solve problems, often express opinions, dare to take risks, and like to try new things. To increase student creativity, one of the ways is that teachers must apply the Project Based Learning model in learning. According to Surya et al (2018) explain that "the project-based learning model (Project Based Learning) allows students to design a problem and find their own solution, so that it can increase students' creativity to come up with their own solutions, making learning activities more meaningful so they are remembered." This learning model will invite students to create a project that produces products from students' independent thinking.

METHOD

Based on the question formulation above, the aim of this research is to describe the application of the Project Based Learning model to increase student creativity in science learning class VA at SD Negeri 66/IV Jambi City. The research carried out was classroom action research (PTK). The series of activities in this Classroom Action Research refers to the PTK guidelines from Kemmis and Robin MC Taggart. The aim of carrying out PTK is to increase and improve the practices that should be carried out by teachers, so that teachers will practice more in applying various alternative actions as an effort to improve learning services rather than acquiring general knowledge in the field of education that can be generalized.

This classroom action research is research intended to improve learning. This classroom action research is planned to be carried out in two cycles, where each cycle consists of four stages, including;

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1) planning stage, 2) implementation stage, 3) evaluation/observation stage, and 4) reflection stage. The flow of implementation of the actions in question is as follows:

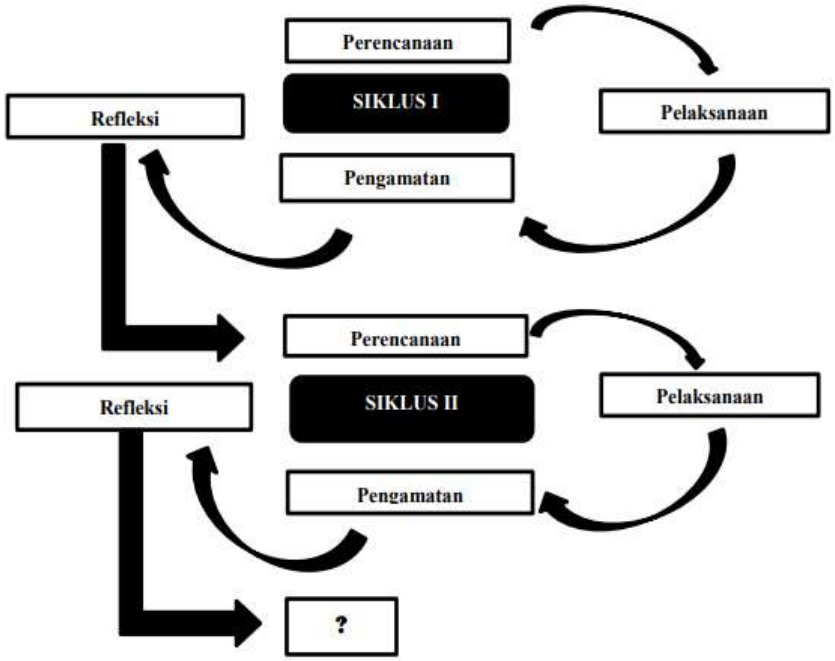

Figure 1. Research Design according to Kemmis & Me Taggart

This research was carried out at SD Negeri 66/IV Jambi City. The research was carried out from March to April 2023. The sample in this research was all 34 students in class VA of SD Negeri 66/IV Jambi City, consisting of 15 male students and 19 female students. The sampling technique is the Purposive Sampling Technique, which means that all 34 students in class VA are the sample. The types of data obtained in this research are: Qualitative data, namely data resulting from observations of teacher activities and student activities in science learning using the Project Based Learning model. Quantitative data is data obtained from the results of students' final assessments. Teacher observation data, data obtained from observations during learning. Student observation data, data obtained from observations of student activities. Observations were carried out during cycle 1 and cycle 2 learning activities. Carrying out observations both on teachers/researchers and on research subjects is carried out by filling in the observation format that has been prepared by the researcher with the aim of knowing student activities and teacher activities during learning activities.

An indicator of the success of classroom action research is if the results of the data obtained have shown an increase in the creativity of class VA students at SDN 66/IV Jambi City during learning activities. The research is said to be successful if the percentage has experienced an increase in student creativity in the learning process from the initial condition to 70% or up to the good category.

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RESULTS AND DISCUSSION

Before conducting the research, the researcher made observations on November 1-2 2022 regarding the learning process in the class. Researchers collaborate with class teachers to determine the problem to be researched. The result of the researcher's collaboration with the class teacher was the discovery of problems regarding student creativity in the classroom during the learning process. Student creativity at that time was still relatively low. This can be seen when the teacher talks more during the learning process, explains the material and gives assignments. When giving questions to 34 students, only 12 people could answer the questions given by the teacher when explaining the material. When the teacher gives an assignment, there are 9 people who can answer the question in different ways, such as when one student has answered correctly and then he answers again with a different answer. Apart from that, teachers have not used varied learning models in learning discussions.

Furthermore, after finding problems from the results of pre-cycle observations, researchers conducted research using the PTK method with II cycles. In cycle I it consists of 2 meetings. Based on the results of observations of teacher activities in cycle I, the implementation of learning carried out by teachers in cycle I had shortcomings, namely that the teacher did not link the learning material with students' daily activities and when explaining the learning material the teacher paid less attention to the students sitting in the back row so that those who listened to the teacher when explaining material only for students sitting in the front seats. The teacher is not visible in guiding students to prepare a project implementation schedule, so students do not know how long the project assignment will take to be completed. Teachers are less able to manage groups when making projects, so students are too relaxed and slow in doing the project assignments. Teachers do not guide students enough to collaborate, so that during the project creation process many students do not help and are indifferent to their group assignments. Closing activities and teacher strengthening are still not optimal. Teachers do not motivate students to be enthusiastic about doing project assignments and teachers do not guide students enough to conclude learning activities. Overall, teacher skills using the Project Based Learning model have not reached the expected criteria in an effort to increase student creativity.

Meanwhile, the results of observations of student activities in cycle 1, meeting 1, based on the scores of students' creativity attitudes that have been presented, show that in each indicator of student creativity, many students got a score of 1. This is because in cycle 1, meeting 1, the teacher was only at the stage of explaining the material and asking questions. regarding changes in the form of objects and at this meeting we were still discussing projects that would be implemented at the next meeting so that student creativity was not yet visible and only students who understood the learning material were able to answer and ask questions about the learning material. The results of student creativity in the first cycle of meeting 1 classically only reached 35%. The scores obtained were categorized as poor because only 12 of the 34 students were able to show good creativity according to the student creativity indicators. Weaknesses that are still visible include students not being able to solve questions with more than one answer and not being able to come up with richer, more interesting and more complete ideas. In cycle I, meeting 2, the achievement of students' creativity attitude scores in cycle I, meeting 2, classically reached 65%, which can be categorized as quite good. The scores obtained were categorized as quite good because 22 of the 34 students were able to show good creativity according to the indicators of students' creative attitudes. Even so, many students get a score of 2, so this learning process needs improvement to achieve a good learning process and student creativity. The following is a graph from the results of student observations:

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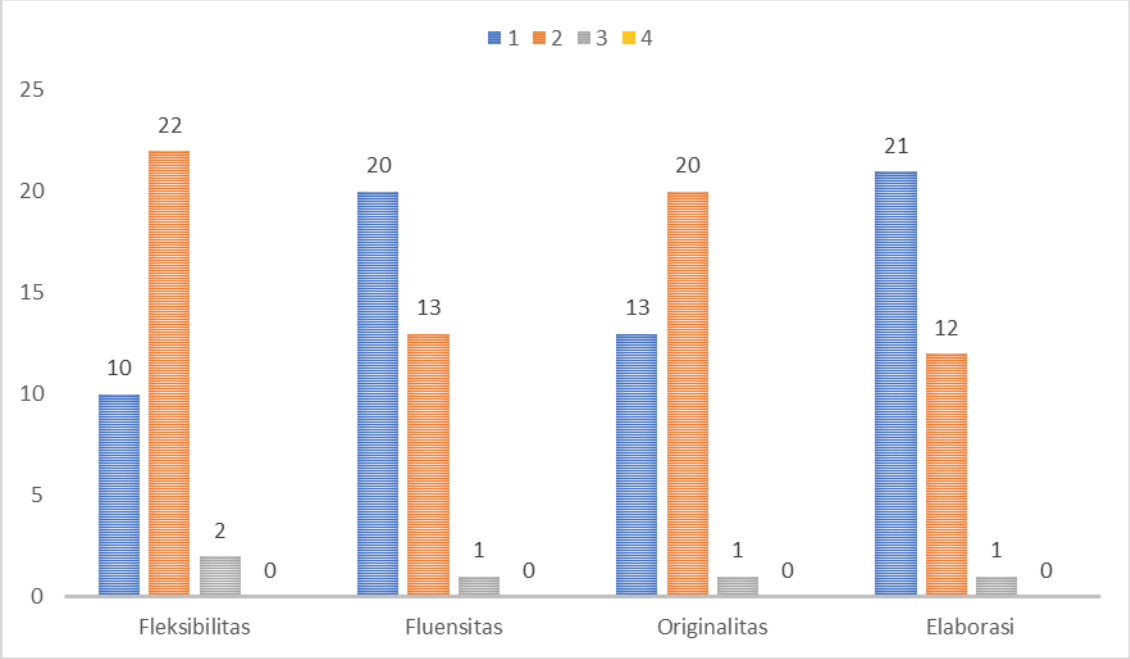

Figure 2. Results of student observations in cycle I, meeting 1

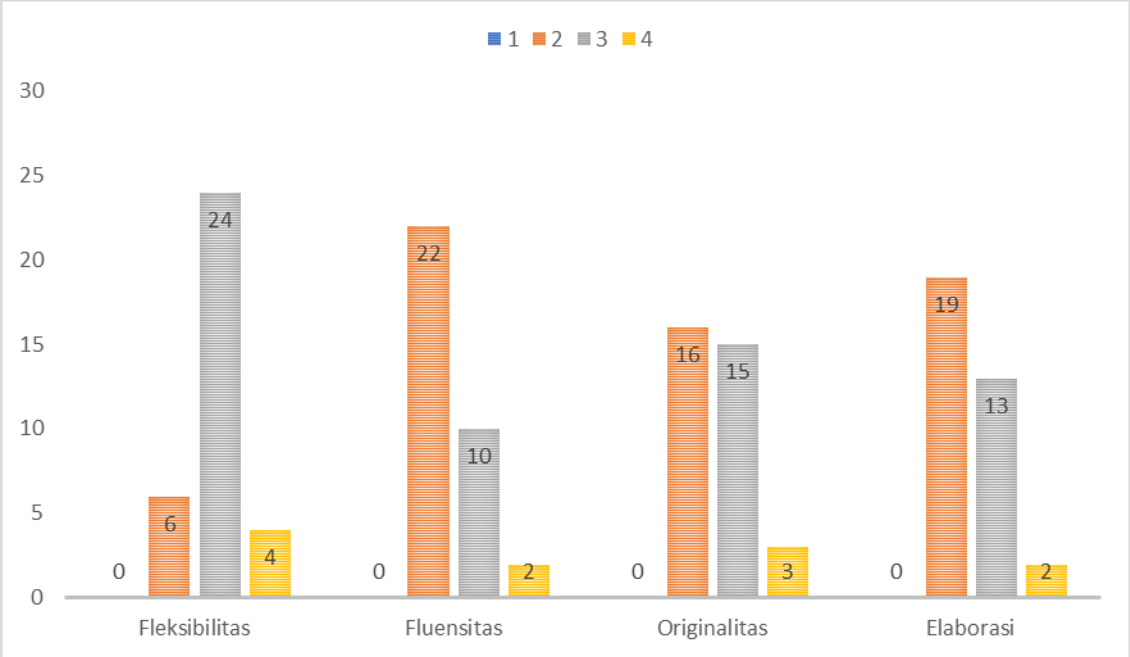

Figure 3. Results of student observations in cycle I, meeting 2

Based on the results of observing teacher activities in cycle II, the teacher linked learning material to students' daily activities, explaining material that was difficult for students to understand

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using language that was easy for students to understand. The teacher has paid attention to all students when delivering the material so that all students pay attention and listen to the teacher's explanation. The teacher guides students to prepare a project implementation schedule, namely the project tasks must be completed in two meetings, if the first meeting is not finished then it will be continued at the second meeting. The teacher always reminds the group of the remaining time during the project creation process, so that students do not relax and are not slow in working on the project assignments. The teacher guides students to collaborate by going around the class and supervising students, and informs students that groups that help each other, are serious, work together, and complete project assignments on time will be given awards to that group at the end of the lesson. The closing activities and teacher reinforcement were good, the teacher motivated students to be enthusiastic in carrying out project assignments and the teacher guided students and together in concluding learning activities. Overall, the teacher's skills in using the Project Based Learning model have reached the desired criteria in an effort to increase students' creative attitudes.

Meanwhile, the results of student observations in cycle II meeting 1 showed that student creativity in cycle II meeting 1 had seen an increase. The improvements made in cycle II, meeting 1, obtained a score of 85% which can be categorized as good. The scores obtained were categorized in the good category because 29 of the 34 students were able to show good creativity according to the indicators of students' creative attitudes. Even so, there are still many students whose creative attitudes are still relatively low. Furthermore, in cycle II, meeting 2, there was an increase in each indicator of student creativity. On average, students have obtained very good scores for each indicator of student creativity. The results of student creativity at meeting 2 reached 100% which can be categorized as good. The scores obtained were categorized in the very good category because 34 out of 34 students were able to show very good creativity according to the indicators of students' creative attitudes. It can be seen from the results of observations that student creativity has increased. This is shown by an increase in cycle II, namely reaching a score of 80%, so the conclusion can be drawn from cycle II, namely that part of the desired score has been achieved in the learning process. All indicators in cycle II have reached the target of success, so the research in cycle II is considered successful. The following is a graph from the results of student observations:

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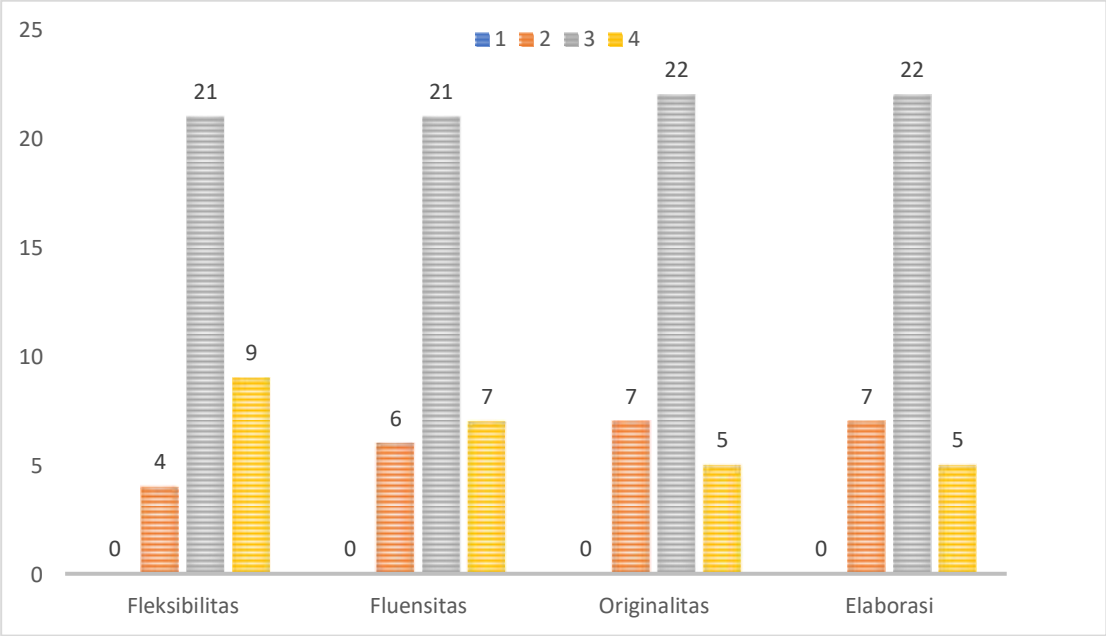

Figure 4. Results of student observations in cycle II meeting 1

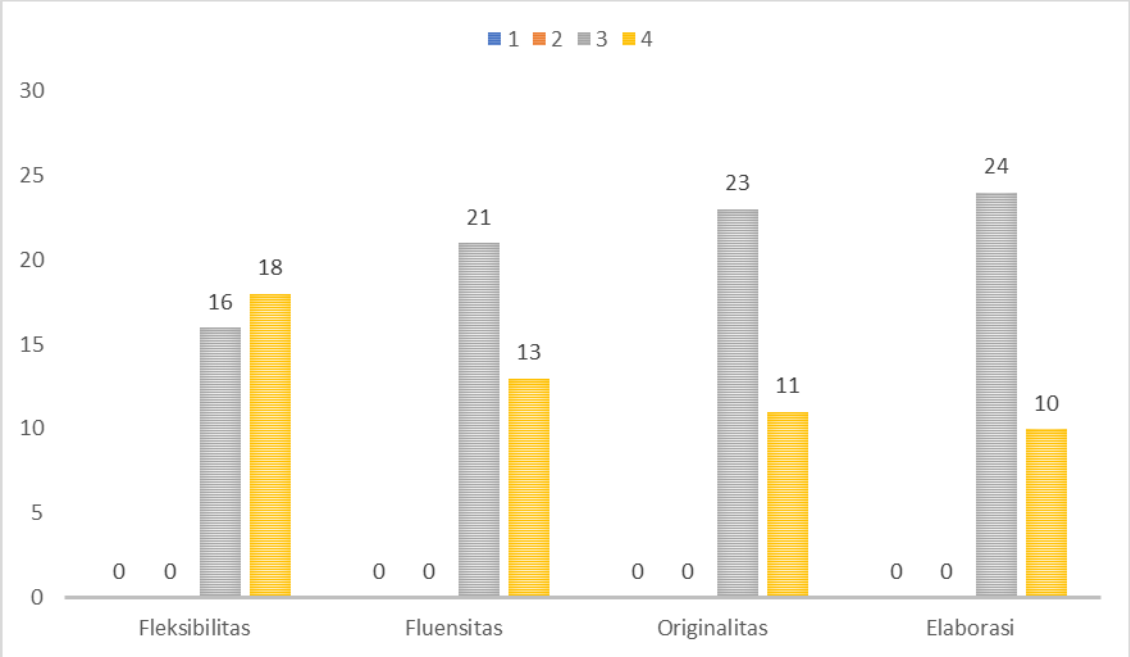

Figure 5. Results of student observations in cycle II meeting 2

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Discussion

Learning using the Project Based Learning model is appropriate for students in class V of elementary school, because in the upper grades of elementary school the characteristics include attention being focused on concrete operational life. This is in accordance with the characteristics or features of development according to Piaget's cognitive theory (Bujuri 2018-41) "primary school age children think concrete operationally, where children are able to use their minds to think logically about something that is concrete or real". This ability is the ability to unite memories, experiences and objects experienced. Learning with the Project Based Learning model is in accordance with the characteristics of elementary school children because they can remember the concepts learned through the experience of making a concrete project.

There are four stages carried out in each cycle, namely the planning, implementation, observation and reflection stages. In the planning stage, the teacher prepares everything needed, such as a learning implementation plan (RPP), learning media, and teacher and student observation sheets. Next, in the implementation stage, the teacher carries out learning activities using steps from the Project Based Learning model which is used to increase student creativity. Then, at the observation stage, the teacher sees the extent of student creativity by filling in observation sheets according to the student creativity indicators.

Through the observation stage, the teacher will find out the percentage of student creativity in each cycle, whether in each cycle it has increased and achieved the success criteria set by the researcher. The final stage is reflection, namely analyzing the results of observations and identifying actions that must be maintained, improved or repaired, eliminated or renovated. The reflection results from cycle I are used to determine actions in the next cycle.

The results obtained through student observation and assessment in cycle I, namely student creativity reached 51%. Obtaining this value cannot be separated from the weaknesses that existed during the implementation of learning in cycle I. These weaknesses included that there were still students who were not serious in doing the assignments given by their friends in the group, were still playing around while doing the assignments, students were indifferent. indifferent to group assignments and carrying out activities outside of group assignments. Lack of creative ideas or lack of input put forward by students in making group assignments. There are still many students who do their assignments because the teacher asks them to. Students are relaxed and slow when doing group assignments, this is because the teacher does not guide students enough in completing group assignments.

Apart from the weaknesses found in cycle I, there was also success in the implementation of learning in cycle I. These strengths include the teacher being very good at dividing groups, namely heterogeneously as seen from the students' abilities or the students' gender. Teachers are very good at evaluating the results of projects carried out by students, so that students can express their opinions regarding their feelings during the process of making the project.

Weaknesses found in cycle I were corrected in cycle II. The implementation of learning in cycle II is that the teacher will give punishment in the form of additional assignments for students who do not help in doing group assignments. The teacher will give awards to groups who help each other, are serious, cooperate with each other, and complete group assignments on time. The teacher always reminds the group of the remaining time during the project creation process, so that students do not relax and are not slow in working on the project assignment.

The value of each indicator of student creativity increases per cycle. This increase was obtained from the scores obtained by students at two meetings in each cycle. The percentage of students' creative attitudes increased in cycle II by 29%, namely cycle I 51% and cycle II 80%. The students' creativity scores in cycle II exceeded the success criteria, namely 70%, so this research ended

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in cycle II. Increasing student creativity using the Project Based Learning model cannot be separated from the guidance and motivation provided by the teacher during learning.

CONCLUSIONS AND RECOMMENDATIONS

Based on the results of research data analysis, it can be concluded that the PJBL model (in its steps) plays a very important role in the growth of elementary school students' creativity. The PJBL model appears to have an important role in generating 4 indicators of creativity. This can be seen from each stage of the PJBL model in project 1 and project 2, which has given rise to the four indicators of creativity. The project work contained in the PJBL model of learning requires students to develop their ideas and thoughts in planning, compiling, designing and working on and completing projects optimally.

This can also be seen from the analysis of data presentation during the implementation of cycle I and cycle II actions. In cycle I, students' creativity presentation was 51%, while in cycle II it was 80%. The increase in the percentage of creativity from cycle I to cycle II was 29%. So it can be concluded that using the Project Based Learning model in grade V elementary school science learning can increase student creativity.

Suggestions that can be given regarding fostering creativity using the PJBL model are that schools need to develop teachers' pedagogical competence in learning using the PJBL model so that the expected learning outcomes are met. And in using the PJBL model, teachers must implement it in accordance with the PJBL steps so that they can stimulate students' creativity.

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