

Application of Project Based Learning Model for Class V Students Theme 5 Sub Theme 1 Ecosystem Material

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Article Info

Article history:

Accepted: 11 Oktober 2022

Publish: 31 Oktober 2022

Keywords:

Project Based Learning, science, ecosystem materials

ABSTRACT

The purpose of this study is to describe learning outcomes student cognitively through a project-based learning model for class V students on ecosystem material. The type of research conducted in this research is class action research (CAR), In CAR which in general there are four stages that are commonly passed, namely (1) planning, (2) implementation, (3) observation, and (4) reflection. Data collection techniques in this research consist of: observation, documentation, and tests. The subjects in this study were fifth grade students at UPT SDN Pasirharjo 1 Blitar. The research subjects were 23 students consisting of 9 male students and 14 female students. The type of data that will be collected in this study is data on science learning outcomes for fifth grade students of UPT SD Negeri Pasirharjo 1 Blitar. The results is showed that students' learning outcomes were cognitively improved. The implementation of science learning on ecosystem materials by applying the PjBL model in cycle I and cycle II were 78.48 with good criteria and 81.95 with very good criteria.

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1. INTRODUCTION

The learning process involves several components that support the creation of a conducive and meaningful learning climate. The learning objectives that are arranged focus on exploration students' abilities consistently and continuously. Achievement indicator become an important point so that students can develop themselves optimally. Learning is a conscious process to gain an understanding of an object. This process can be done by continuous and continuous. As the discovery of a concept continues to be directly studied and developed. Learning can be said to be good if it involves students actively active in learning to acquire their own knowledge and relate it to the real context of students' daily lives (Fitri et al., 2018). Learning is also a process that requires learning resources as a support for successful learning (Wahdan Wilsa, 2019). Constructivist learning supported by the right models and media will produce learning with maximum results (Suprianti et al., 2021).

Students as students in learning are expected to be willing and able to carry out educational learning activities. The intended learning activities are students intend to learn, carry out learning activities, and evaluate themselves. With the activities carried out by students in learning. Of course these students can do the acquisition of concepts optimally both individually and classically. The acquisition of student concepts can be obtained through a constructivist and contextual learning process. So that the memory of learning will last a long time because students carry out real learning activities and students are present materially and non-materially in the learning.

Constructivistic learning is carried out in accordance with constructivist learning theory, namely: 1) learning emphasizes what is obtained but builds concepts through learning, 2) good learning for children is by resolving cognitive conflicts, 3) learning is a construction process for an idea and explore it so find something meaningful, 4) learn not only individually but can be done by interactions social good with peers, parents, teachers and other people who can help in developing knowledge, 5) as educators teachers need to master the theory of learning and child development, 6) learning is done by link connection Among knowledge possessed by the existing real context, 7) students learn as a whole by exploring and reflecting (Dadang Supardan, 2016). Constructivist learning requires the active role of students and teachers. Both of them carry out meaningful interactions so as to produce the acquisition of concepts relevant to the expected learning objectives. The advantages of constructivism theory are: 1) teachers are not the only source of learning, 2) learning is more effective because liveliness students, 3) learning meaningfulness is achieved because students connect the knowledge they know through relationships social done, 4) students do learning freely, 5) Students get the same treatment according to their abilities, 6) the teacher's role as mentor, while students process problem solving and decision makers (Suparlan, 2019).

The application is something that needs to be underlined. This is because the application of the model can be used to manage learning activities more effectively. The use of learning models needs to pay attention to several things, including the objectives to be achieved, learning materials to be discussed, student characteristics, and other aspects that can affect the selection of a learning model. The learning models used in the 2013 curriculum are discovery-based learning models (Inquiry and discovery), project-based learning, and problem-based learning (problem solving). Each learning model has a flow, procedure, and step or can be called a syntax which is a characteristic of a model. The syntax of the selected learning model is usually carried out during core activities in the learning process. The use of the model is expected to create learning in a pleasant atmosphere, students can develop creativity according to their talents and interests, and students obtain optimal learning outcomes (Yuliani, Kanzunudin, & Rahayu, 2018)

One of the learning models that are expected to assist students in obtaining optimal results in learning is project-based learning. According to Wena, Made (2009: 1441) the PjBL model is a learning model that provides opportunities for teachers to manage learning in the classroom by involving project work. The PjBL model is a learning model that allows students to learn independently in a project to produce their own realistic work (Yani & Taufik, 2020). Project learning not only improves children's skills but also improves collaboration skills with other students thereby increasing and broadening students' horizons. (Mayuni et al., 2019) Project-based learning can facilitate meaningful learning to students, accommodate students' intelligence and learning styles, have a variety of activities, increase motivation according to their talents and interests (Flemming, 2000). Project-based learning models allow students to increase creativity in bringing up project problems and find their own solutions to problems in creating meaningful learning (Surya, Relmasira, & Hardini, 2018)

Based on the results of observations made on September 19, 2022, it can be seen that: 1) Students do conventional learning, namely listening to the teacher's explanation then doing practice questions, 2) students' daily scores have not reached the minimum expected learning completeness criteria, which is only 65% of students who have fulfilled the classical KBM, 3) Students have difficulty discussing and studying in groups because of the communication aspect that has not been effective, 4) there are students who play and talk alone during learning, 5) Students are not confident in conveying the results of their work in front of the class.

Based on the results of interviews conducted on September 19, 2022, it can be seen that: 1) teachers still use the lecture method as much as 80% when learning, 2) teachers still prioritize values on cognitive aspects during learning, 3) learning activities are mostly done classically and minimal activities in groups and discussions, 4) Teachers talk more in front of the class than students, 5) Teachers dominate learning so that learning is more teacher-centered.

Selection of learning models that can activate students in the learning process can be conducted by identifying the learning needs of students in achieving the learning objectives to be achieved. The learning model allows students to carry out learning activities and learning will be student centered (student center). Learning models can be divided into various types, for example contextual, cooperative, problem-based, and discovery-based learning models.

The selection of learning models to be applied to learning activities is expected to stimulate students to be more active. The syntax attached to the model will be organized to students to carry out learning procedures in a systematic and directed manner. Several studies also show the effect of using learning models when applied to learning. The results of research that show the usefulness of the learning model are: learning using the PjBL model can improve student learning achievement (Putra, 2018), there are differences in students' mathematical understanding abilities before and after learning using contextual learning models (Santoso, 2017), methods or blended learning learning model can improve effectiveness learning to improve student learning outcomes (Wahyudin, 2020). Based on study what has been done can be seen that the use of learning models can improve student achievement in terms of attitudes, knowledge, and skills.

Based on the presentation of the data presented, the researcher will design a study with the title "Application of Project Based Learning Models for Class V Students for Theme 5 Sub-Theme 1 Material for Ecosystems"

2. METODE PENELITIAN

This type of research is class action research or class action research. Classroom Action Research (CAR) is a controlled investigation process to find and solve learning problems in class, the problem solving process is carried out cyclically, with the aim of improving the quality of learning in certain classes (Akbar, 2010:26). The design of this research is Classroom Action Research (CAR) is research that focuses on improving or improving learning in the classroom. Broadly speaking, there are four stages that are commonly passed, namely (1) planning, (2) implementation, (3) observation, and (4) reflection as proposed by Kemmis and Mc Taggart (1982) as shown in Figure 3.1 below.

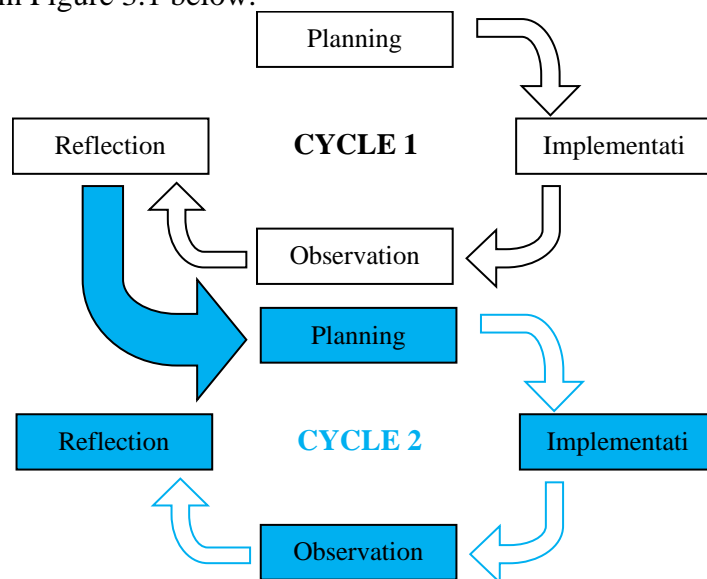


Figure 1. CAR Cycle According to Kemmis and Mc Taggart

The subjects in this study were fifth grade students at UPT SD Negeri Pasirharjo 1 Blitar. The research subjects were 23 students consisting of 9 male students and 14 female students. The type of data that will be collected in this study is data on science learning outcomes for fifth grade students of UPT SD Negeri Pasirharjo 1 Blitar. The type of data that will be collected in this study is data on science learning outcomes for fifth grade students of UPT SD Negeri Pasirharjo 1 Blitar. The type of data to be collected in this study is data about student learning outcomes cognitively.

Data collection techniques in this research consist of: observation, documentation, tests. The data that has been collected will be analyzed descriptively, both descriptive qualitative and descriptive quantitative. Qualitative data in the form of learning observations will be analyzed by qualitative analysis with the following stages: data exposure, data reduction-simplification, data categorization-data grouping according to the focus of the problem, reflection and discussion. The class is said to be successful or complete learning if 75% of the students have a test score of 70.

For this reason, the formula used to determine the percentage of student learning outcomes is intended as follows:

$$P = \frac{f}{N} \times 100\% \text{ (Nana Sudjana, 2008: 133)}$$

Information :

f : Frequency of raw score being searched percentage

N : Amountnumber of individuals

P : Percentage figure

The percentage that goes through the calculation is then interpreted using standards or using assessment criteria to determine the quality or qualifications of students' abilities in the learning process and student achievement.

Table 1 Quality standards for achieving success

Quantitative	Qualitative	Criteria
81 – 100	Very good	A
61 – 80	Well	B
41 – 60	Enough	C
21 – 40	Not enough	D
0 - 20	Very less	E

Adapted from Arifin (2009)

The results of the assessment regarding the successful achievement of student learning outcomes, conclusions are made regarding the improvement of student learning achievement with reference to the objectives of this study. The standard score of this assessment is to give the score weight to the student's test results. The standard score for the assessment is presented in the following table:

Tabel 2. Skor Penilaian Terhadap Jawaban

Jawaban	Skor
Jawaban sesuai dengan yang diharapkan atau sesuai dengan kunci jawaban	10
Skor maksimum	10

Diadaptasi dari Arifin (2009:227)

Skor nilai mewakili setiap bobot satu soal. Bila soalnya ada 5 maka skor maksimum tiap soal adalah 20. Kemudian nilai siswa diperoleh dengan rumus sebagai berikut :

$$Ns = \sum \text{ skor tiap nomor} \times 10$$

Ns : Nilai yang diperoleh siswa

3. RESULTS AND DISSCUSION

Prior to conducting learning activities with the implementation of PjBL in improving Science Learning Outcomes for Class V Odd Semester Students in 2022/2023, UPT SD Negeri Pasirharjo 1 Blitar. Students are observed and observed for one month. The results of the test, it can be seen that the average value of the daily test results of 3 KD conducted by the fifth grade teacher was recorded only reaching an average of 73.86 out of 23 students, only 13 students (56.52% of students) were able to achieve completeness, while 10 students (43.47% of students)

are still below KKM that have been determined by the UPT SD Negeri Pasirharjo 1 Blitar, which is 75 to improve student learning outcomes on ecosystem materials.

Table 4. hasil Belajar Siswa Pada Siklus I Pertemuan 1

Absen	Siklus I pert 1	Siklus I pert 2	Rata-rata	Kategori Ketuntasan
1	70	80	75	tuntas
2	80	90	85	tuntas
3	80	100	90	tuntas
4	90	100	95	tuntas
5	80	80	80	tuntas
6	50	80	65	Belum tuntas
7	80	80	80	tuntas
8	80	80	80	tuntas
9	80	100	90	tuntas
10	80	80	80	tuntas
11	50	80	65	Belum tuntas
12	70	80	75	tuntas
13	70	80	75	tuntas
14	80	80	80	tuntas
15	80	80	80	tuntas
16	60	80	70	Belum tuntas
17	50	80	65	Belum tuntas
18	30	80	55	Belum tuntas
19	90	80	85	tuntas
20	90	90	90	tuntas
21	80	80	80	tuntas
22	90	100	95	tuntas
23	60	80	70	Belum tuntas
	1670	1940	1805	Belum tuntas
	72,61	84,35	78,48	Belum tuntas

The average value of the first cycle class is 78, 48 with good value criteria. The overall score obtained by students is 1805. Positive findings during learning are: 1) students can follow well-implemented learning steps, 2) students begin to study in groups, 3) students are able to present their work in the form of products. The negative findings are: 1) students who are not active in learning in groups 2) presentations require more time if all students appear, 3) students have not completed activities on time, 4) there are still students who have not finished learning.

Table 5 Student Learning Outcomes in Cycle II

Student absence	Cycle II Pert I	Cycle II Pert II	Average	Value Category	Complete Category
1	80	80	80	Well	B
2	80	90	85	Very good	A
3	100	100	100	Very good	A
4	80	80	80	Very good	A
5	80	90	85	Well	B
6	100	100	100	Well	B
7	90	100	95	Very good	A
8	80	80	80	Well	B
9	80	80	80	Very good	A
10	80	90	85	Well	B
11	80	80	80	Well	B
12	90	100	95	Well	B
13	80	80	80	Well	B
14	80	80	80	Very good	A

15	70	70	70	Well	B
16	80	80	80	Well	B
17	80	90	85	Well	B
18	70	80	75	Well	B
19	70	70	70	Very good	A
20	70	70	70	Very good	A
21	70	70	70	Well	B
22	80	90	85	Very good	B
23	80	90	85	Well	B
Amount	1840	1930	1885		
4. Average 5. 80 6. 83.913 7. 81.95 8. 9.					

The table states that the average value of the class in the second cycle is 81.95 with a good category. in cycle 2, 23 students (100%) completed, 9 students (39%) completed with very good score category and completeness category A, 14 students (61%) with good grade category and completeness category B. Cycle II almost all students are happy and enthusiastic in participating in learning. The positive things found are as follows. First, the teacher has according to the lesson plan although some aspects have not yet emerged. Second, Student learning outcomes have shown an increase above the KKM that has been determined by the school, although there are still some students who have not finished studying, which can be overcome by correcting some of the weaknesses that have been found by researchers for further learning activities with other materials and subjects. This is because students' learning abilities are different. Third, the success indicators specified in this study have been achieved, so the researcher stops the cycle because the researcher feels that the target to be achieved has been achieved according to the specified KD.

9.2.DISCUSSION

The application PjBL in science learning for Class V Odd Semesters 2022/2023 UPT SD Negeri Pasirharjo 1 Blitar shows the implementation of student-centered learning activities. Learning by applying the PjBL model can make students active to carry out activities in solving these problems. Students can apply their knowledge to conduct experiments in solving problems. The advantage of this learning is that the teacher does not dominate the course of learning, through projects directing students to real learning and students getting real learning resources. This is different from the implementation of pre-action learning activities that are teacher centered. Students only listen to the explanation of the learning material from the teacher without conducting related experiments to find out their knowledge about the learning material. Whereas science learning should be done through various student activities to find their own knowledge. PjBL learning model can make students more interested and confident in displaying or presenting the results of the assigned project. PjBL model used increases student interest in learning, in this case student interest is clearly visible and can be seen from the attention of students focused on the ongoing learning process, resulting in an increase in learning outcomes. Whereas science learning should be done through various student activities to find their own knowledge. PjBL model can make students more interested and confident in displaying or presenting the results of the assigned project. The PjBL model used increases student interest in learning, in this case student interest is clearly visible and can be seen from the attention of students focused on the ongoing learning process, resulting in an increase in learning outcomes. Whereas science learning should be done through various student activities to find their own knowledge. PjBL model can make students more interested and confident in displaying or presenting the results of the assigned project. The project-based learning model used increases student interest in learning, in this case

student interest is clearly visible and can be seen from the attention of students focused on the ongoing learning process, resulting in an increase in learning outcomes. PjBL model can make students more interested and confident in displaying or presenting the results of the assigned project. The project-based learning model used increases student interest in learning, in this case student interest is clearly visible and can be seen from the attention of students focused on the ongoing learning process, resulting in an increase in learning outcomes. PjBL model can make students more interested and confident in displaying or presenting the results of the assigned project. PjBL model used increases student interest in learning, in this case student interest is clearly visible and can be seen from the attention of students focused on the ongoing learning process, resulting in an increase in learning outcomes.

Based on the understanding of science, learning science by applying the PjBL model can create learning that trains students to carry out various activities in solving problems. This is because the PjBL model consists of steps to solve problems. The advantages and disadvantages will be explained as follows: The advantages in every research activity basically have advantages and disadvantages. The need for data analysis in research is very helpful for researchers in this regard. The data analysis model in this study is a qualitative data analysis model by collecting data using observation, interviews, and documentation results. The advantages and disadvantages of using project based learning to improve thematic learning outcomes are as follows: The advantages of applying the project based learning learning model. project based learning makes it easier for students to learn. The disadvantage is that new students try this model, so it takes extra time for them to understand how to use this learning model. This is also proven in the first cycle interview with the Class 5 teacher, he said that this model can make it easier for students to take notes that are not too long. However, with the use of this new model the results are also not optimal.

The results showed that 1) Before the action, the student's average score was 73.86 in the first cycle, the learning outcomes had increased, namely the average student became 78.48 students and in the second cycle and the average student learning outcome was 81.95. The conclusion of this study is that the application of the Project Based Learning Model to Class V students can improve student learning outcomes cognitively. Theme 5 Sub Theme 1 Material Ecosystem. Along with research conducted by (Surya et al., 2018) stated that the application of the model can increase student activity and learning. In addition, the Project Based Learning learning model can improve psychomotor competence (Eliza, Suriyadi, & Yanto, 2019). The connection ability of elementary school students also increases with the application of the model (Kiswanto & Nelliarti, 2019). Project-based learning motivates students to work together, train critical thinking, and improve the ability to analyze, synthesize, evaluate, and create (Insyasiska, Zubaidah, Susilo, Negeri, & Agus Salim, 2017),

The increase in student learning in the following table.

Table 6. Table Percentage Pre-Action Learning outcomes and Cycle I

Pre Action	Average value of Cycle I	Score Improvement	Percentage Increase
73.86	78,48	4,632	6.25%

From the table above, it can be seen that student learning outcomes have increased by 4.63 (6.25%). Therefore, the next cycle of action is carried out which is expected to further improve student learning outcomes.

The following is a comparison of student learning outcomes between cycle I and cycle II.

Table 7. Table of Percentage of Learning Outcomes Cycle I and Cycle II

Average score Cycle I	Average score Cycle II	Score Improvement	Percentage Increase
78,48	81.95	3.47	4.42%

From the table above it is concluded that the science concept of ecosystems through student learning outcomes has increased by 3.47 (4.42%) This means that the application of the Project Based Learning Model to Class V students can improve student learning outcomes cognitively Theme 5 Sub Theme 1 Material Ecosystem.

4. CONCLUSION

The results of the CAR have been carried out, the following conclusions can be obtained. The application of the PjBL for Class V Students can improve student learning outcomes cognitively. Theme 5 Sub Theme 1 Material Ecosystem. Learning is carried out properly and according to the planned research procedures. Learning activities that are teacher centered become student centered. Teachers can apply the PjBL to science learning according to the syntax. The implementation of science learning on ecosystem materials by applying the PjBL model in cycle I and cycle II were 78.48 with good criteria and 81.95 with very good criteria.

SUGGESTION

Based on the results of this CAR, the researcher provides the following suggestions.

1. To improve students' cognitive learning outcomes, PjBL model can be applied.
2. The application of the PjBL model can be applied to students with different titles, content, and materials.
- 3.

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