



Description of Implementation of Project Based Learning Model on Creativity Ability of Second Grade Students of SD Islam Ar-Rahiim Balikpapan

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Abstract. This research aims to describe the application of the Project Based Learning (PjBL) learning model on flat building materials. The type of research used is a qualitative research method which is descriptive analysis. This research was conducted at Ar-Rahiim Islamic Elementary School, Balikpapan. The subjects in this research were class II-A students who would make a flat building board project totaling 18 people who were divided into 2 groups. Subjects will be given a project assignment in the form of making a flat building board and then presented. The method used is a qualitative research method which is descriptive analysis. The subjects of this research were obtained using Purposive Sampling techniques. The data collection techniques used are observation and documentation. Observations were made during the learning process, project results, and student presentations. Observation of students' creative abilities is assessed using 4 aspects, namely flexibility, fluency, elaboration, originality. The results of the research can be concluded that the application. The Project Based Learning model can foster students' creative abilities and determine their level of creativity. This can be seen from the research results, group 1 is classified as high creativity with the criteria of aspects of less flexibility, good fluency, good elaboration, and good originality. Group 2 is also classified as high creativity, with the criteria being quite good flexibility, less fluency, good elaboration, and quite good originality.

Keywords: Project Based Learning, Creativity Ability, Qualitative.

1 Introduction

In learning mathematics, teachers need to teach how to solve mathematical problems correctly, so that when students face mathematical problems, they can solve them accurately and correctly [1]. This ability allows students to absorb learning well and requires several teaching models that teachers strive to be better and more creative. Teachers must be clever in adjusting the learning model to be used with learning materials and student learning styles. Dacholfany et al. [2] say that teachers are an important element in improving the quality of learning in the classroom, therefore the quality of teachers' teaching methods with good learning models must be directly proportional to

the quality of education shown by students in the form of changes in attitudes, thoughts, and students' knowledge from not understanding to understanding the content of the material. In line with this opinion, Sari et al. [3] stated that the learning process is carried out in an interactive, inspiring, fun, challenging manner, motivating students to further develop creativity according to experience and improve learning outcomes. This means that one of the goals of the learning model is to foster student learning creativity so that students' interest in learning increases and they can be more motivated in expressing their ideas.

Based on the results of observations in the field, mathematics learning at Ar-Rahiim Balikpapan Islamic Elementary School in class II A has not shown learning that leads to honing student creativity. The learning that is applied generally does not provide opportunities for students to play an active role in learning, some students seem busy playing alone, so they lack focus. In the end, students become passive and lack motivation to learn mathematics, which causes students' low creative abilities. According to researchers, a meaningful learning model is needed that actively involves students, facilitates students' creative abilities, and creates enjoyable learning.

Previous research conducted by Marselus [4] show that implementing learning using the Project Based Learning model in Simulation and Digital Communication subjects can increase student learning activity and motivation. This can be seen from student activity from cycle I of 71.87%, increasing in cycle II of 75.35% and increasing in cycle III to 76.77%. Student learning motivation in cycle I was 71.86%, increased in cycle II by 74.61% and increased in cycle III to 77.44%. Research Darmuki dan Hidayati [5] also shows that using the Project Based Learning model can improve students' high-level thinking skills from the HOTS thinking skills category when pre-cycle 30% increased to 50% in cycle 1 and to 88% in cycle 2, as well as for The student creativity category increased from pre-cycle 29% to 51% in cycle 1 and to 90% in cycle 2, so it can be seen that using this learning model can improve students' high-level thinking skills in the Management Study Program, Faculty of Business Economics, Muria Kudus University. Apart from that, research conducted by Yulaikah [6] and Rochim et al. [7] shows the effectiveness of student creativity in classes taught conventional STEM learning with the PjBL model because STEM learning with the PjBL model is designed to hone students' creative ideas and provide opportunities for students to learn through experience or the acquisition of concepts. which is built based on the final product produced in learning. The resulting product is in the form of an idea or device that can be seen.

Based on this background, researchers want to know a description of the application of the Project Based Learning model in terms of the creative abilities of class II-A students at Ar-Rahiim Islamic Elementary School, Balikpapan

2 Method

This research was carried out at Ar-Rahiim Islamic Elementary School in April-June, the Even semester of the 2022/2023 Academic Year, with the research subjects being class II-A elementary school students, totaling 18 students who were divided into 2

groups, and each group consisted of 9 students. Subjects will be given a project assignment in the form of making a flat building board and then presented. The method used is a qualitative research method which is descriptive analysis. The subjects of this research were obtained using Purposive Sampling techniques. The data collection techniques used are observation and documentation. Observations were made during the learning process, project results, and student presentations. Observations of students' creative abilities were assessed using 4 aspects, namely flexibility, fluency, elaboration and originality. The observation guidelines used in this research (Table 1) are as stated by Murniarti [8].

Table 1. Guidelines for Observing Students' Creativity Abilities

No	Observed aspects	Scale	Description (Indicator)	Score
1	Flexibility	Very good	The resulting project has high aesthetics, namely a combination of colors, harmony in object placement, and a neat project.	4
		Good	The resulting project has aesthetics, namely a sufficient color combination, harmony in object placement, and does not have project neatness.	3
		Pretty good	The resulting project lacks aesthetics, namely there is no color combination and harmony in the placement of objects, and the project does not have neatness.	2
		Not good	Has no aesthetics.	1
2	Smoothness	Very good	The writing of sides and angles is very precise and easy to understand	4
		Good	The writing of sides and angles is precise and easy to understand.	3
		Pretty good	The side writing is correct, but the corner writing is not correct.	2
		Not good	The writing of sides and angles is incorrect and cannot be understood.	1
3	Elaboration	Very good	Skilled in using materials and tools, creative in developing ideas.	4
		Good	Skilled in using materials and tools, less creative in developing ideas	3
		Pretty good	Skilled in using materials and tools, not creative in developing ideas	2
		Not good	Not skilled in using materials and tools, not creative in developing ideas	1
4	Authenticity	Very good	Understand the material, broad and clear explanations in your own language, fair distribution of tasks	4
		Good	Understand the material, broad and clear explanations in your own language, unfair distribution of tasks	3
		Pretty good	Lack of understanding of the material, explain by reading books, fair distribution of tasks	2

No	Observed aspects	Scale	Description (Indicator)	Score
		Not good	Not understanding the material, explaining by reading books, unfair distribution of tasks	1

To see the categories of students' creative abilities, the data is processed using the formula proposed by Hasanah et al. [9], as follows:

$$P = \frac{F}{N} \times 100\% \quad (1)$$

Information:

F = Frequency of creativity that appears

N = Number of creativities in all aspects

P = The percentage number sought

Category Description of Category Percentage Acquisition according to Ayuningsih et al. [10] (Table 2).

Table 2. Student Creativity Category

Percentage	Category
$75\% < x \leq 100\%$	high creativity
$50\% < x \leq 75\%$	moderate creativity
$25\% < x \leq 50\%$	low creativity
$0 \leq x \leq 25\%$	very low creativity

Then documentation in the form of photos of the learning process and student project results. The data obtained will then be analyzed based on the research problem formulation. The data analysis technique is qualitative data analysis. The qualitative data analysis process according to Wijaya et al. [11], namely data reduction, data presentation, and drawing conclusions.

3 Result and Discussion

This research focuses on students' creative abilities as seen from 3 stages, namely project work steps, project results, and project presentation. The first step in making a project is to draw a flat shape on origami paper. In this step, groups 1 and 2, students are skilled at using rulers, there are also students who use bottle caps and toys to make circles. The second step is cropping the image. In this step, group 1 was skilled at cutting, there were also students who folded the paper so that the cuts were neat and straight. Group 2 is also skilled at cutting, as seen in the neat flat cut results. The third step is to place the shape flat on paper. At this step, groups 1 and 2, there were some students who were neat in gluing, some still crossed the lines, some put too much glue, so the paper became wet, there were also those who pulled out the picture again because it didn't fit the size. The fourth step is to create letters for the names of flat shapes. In this step, the researcher gave an example by cutting a small piece of paper and then

writing one letter and then sticking it to the edges of a flat shape. Group 1 followed the researcher's example, group 2 used their own method by drawing rather large letters, then cutting them according to the shape of the letters, then sticking them on. The final step is to create the sides and angle names. In this step, group 1 was correct in writing the side and angle names, group 2 had not finished writing the angle names.

Table 3. Observation Results of Student Creativity

Aspect	Description	Score	Criteria	%	Category
Group I					
Flexibility	The resulting project lacks aesthetics, namely there is no color combination and harmony in the placement of objects, and the project does not have neatness	2	Not good	81.25	High creativity
Smoothness	The writing of sides and angles is very precise and easy to understand	4	Good		
Elaboration	Skilled in using materials and tools, less creative in developing ideas	3	Pretty good		
Authenticity	Understand the material, broad and clear explanations in your own language, fair distribution of tasks	4	Good		
Group II					
Flexibility	The resulting project lacks aesthetics, namely there is no color combination and harmony in the placement of objects, and the project does not have neatness	3	Pretty good	75.00	moderate creativity
Smoothness	The writing of sides and angles is very precise and easy to understand	2	Not good		
Elaboration	Skilled in using materials and tools, less creative in developing ideas	4	Good		
Authenticity	Understand the material, broad and clear explanations in your own language, fair distribution of tasks	3	Pretty good		

The results of the student projects can be seen in attachment 1. The project results for group 1 show that the flat shapes dominate in orange so they lack aesthetics, namely there is no color combination and there is a lack of neatness, you can see the placement of the flat shapes across the lines, there are also marks from tears and paper glue. Group 2 of the resulting projects already has an aesthetic, namely having a combination of

various colors but is still not neat because there are several flat shapes that are open at the edges and some of the letter placement is out of line.

The problem with carrying out this project is that there are still students who are busy playing alone and do not help their group. The division of tasks in group 2 doesn't seem fair because many of the projects are carried out by the group leader.

At the presentation stage, students already understand the material and can explain it in their own language with sentences such as: "There are 4 sides of this large rectangle, this side EF, this side FG, this side HG, this side EH" while showing image and side. Apart from that, there are students who explain angles with the sentence "there are three angles at the ends of a triangle, namely angle A, angle B, angle O". Group 2 students already understand the material and can explain it in their own language with sentences like: "the small square is URTI, this is the IT side, the IR side, the UT side, the RU side." Apart from that, "circle, small circle with one side, side B, large circle with side, side C" while showing the picture. And even though they haven't written down the name of the corner point, they can already say it themselves while pointing to the picture. The results of observations of student creativity can be seen in Table 3.

From this Table 3, using the PjBL learning model, the creativity of students in group 1 obtained a percentage of 81.25 and the creativity of students in group II obtained a percentage of 75.00. This is because in the first stage, students were given a stimulus to creatively create several questions related to the flat board assignment and answer the questions. This is in accordance with research by Anggraini and Wulandari [12] which states that with PjBL teaching the teaching method emphasizes stimulation in the form of problems in the system with the aim of making it easier for students to understand and absorb the theory provided.

Next, students are faced with the problem of making flat shapes that they know which makes them hone their creative ideas to solve the problem. At the project planning stage, students discuss to produce their best design to solve the challenge. This requires creative thinking in determining success criteria and completion strategies. At the project work stage, it starts with arranging a flat building surface on a flat building board, where this requires creative ideas or thinking, both practical ideas for making and conceptual ideas. The process of working on a project will inevitably encounter obstacles that also require creative thinking to resolve. The results assessment stage is carried out by testing the results of student projects according to the criteria set initially. This assessment is carried out by students in their own groups and between groups by presenting them. This process also requires a creative process, in providing assessments and providing comments and suggestions on the results of the project. According to Dana et al. [13], the key to creating a PjBL learning model lies in productive and enjoyable learning experiences between members in the study group, apart from that, this learning really helps students find the best point that balances competing themes for social learning, research experiences, and group communication. Experience evaluation is carried out by reflecting on the activities that students have carried out from the beginning to the end of the project assessment. Students' creative ideas are also sharpened by asking them to identify strengths and weaknesses in the learning they have done as well as things that need to be done to make the next learning better [14]. All these processes are supported by learning activities in groups, so that there is mutual

interaction to express their creative ideas. The series using the PjBL model provides students with experiences to hone their creativity. The form of student creativity in flat building materials shown in Table 1 based on the process of working and presenting student project results using the PjBL model shows high creativity. This can be seen in the four main aspects of creativity, namely, flexibility, fluency, elaboration, and originality.

In the flexibility aspect, students could think of various ideas, namely the ability to try various approaches to solving problems. It can be seen from the results of the group 2 project that it already has an aesthetic, namely having a combination of various colors on the flat building boards made by the students. Combining colors in making flat shapes from origami paper is something that is not easy, this requires very good creativity so that the flat shapes made and attached to the flat shape board look better. Teachers as facilitators must continuously stimulate students to instill and develop students' skills and creativity in solving problems, both in providing suggestions for color combinations in flat building board projects [15,16]. In the fluency aspect, the results obtained were that two groups of students were able to provide information about corner points and sides of flat shapes which was very easy for other students to understand. This indicator wants to see the ability of two groups of students to convey ideas to solve problems given by the teacher [17]. Teachers ensure that students think smoothly and are not hampered in providing information to other students.

The next aspect, namely the elaboration aspect and the authenticity aspect. In the elaboration aspect, students were creative in developing ideas by writing block letters on origami paper and then cutting them according to the shape of the letters. Add accessories to the ends of the flat board to make it look more attractive. The form of elaboration activity carried out by students is an effort by students to develop ideas and creativity in expressing cognitive concepts through various means, both verbally and in writing, so that high self-confidence arises about their abilities and existence [18], [3]. Meanwhile, in the aspect of authenticity, students present their work on a flat board in a different way compared to other groups, and in explaining to other students the names of the flat shapes are different. This means that students present their original work as well as possible and seek information through various books or references with the aim of building students' understanding to be more meaningful which will have a direct impact on their learning outcomes in class Mustika [19].

4 Conclusion

From the results of this research, the researcher concluded that the Project Based Learning model can foster students' creative abilities and determine their level of creativity. This can be seen from the research results, group 1 is classified as high creativity with the criteria of aspects of less flexibility, good fluency, good elaboration, and good originality. Group 2 is also classified as high creativity, with the criteria being quite good flexibility, less fluency, good elaboration, and quite good originality.

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