



## Efforts to Increase Student Activity and Learning Outcomes with Flat Building Materials Using the Problem-Based Learning (PBL) Learning Model

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### Abstract

This research aims to increase students' activeness and learning outcomes regarding flat shapes by using the problem-based learning model in class III of SD N Ploso. This research is classroom action research. The data analysis technique uses qualitative and quantitative descriptive analysis. The subjects of this research were 4 students in class III of SD N Ploso. The research results show an increase in student activity and learning outcomes in each cycle. During the pre-cycle the average student learning activity was 25%, then in cycle I the average increased to 50% and in cycle II the average increased by 75%. Furthermore, the average value of student learning outcomes also increased in each cycle starting from the pre-cycle of 62.5. Furthermore, in cycle I it increased by 70, and in cycle II it increased again to 82.5. Based on the results of the research, it can be concluded that the use of the problem-based learning model can increase the activity and learning outcomes of class III students at SD N Ploso in the shape material.

Keywords : Activeness, Learning Results, Problem Based Learning

### Abtrak

Penelitian ini bertujuan untuk meningkatkan keaktifan dan hasil belajar siswa pada materi bangun datar dengan menggunakan model pembelajaran berbasis masalah di kelas III SD N Ploso. Penelitian ini merupakan penelitian tindakan kelas. Teknik analisis data menggunakan analisis deskriptif kualitatif dan kuantitatif. Subjek penelitian ini adalah 4 siswa kelas III SD N Ploso. Hasil penelitian menunjukkan adanya peningkatan aktivitas dan hasil belajar siswa pada setiap siklusnya. Pada saat pra siklus rata-rata aktivitas belajar siswa sebesar 25%, kemudian pada siklus I rata-rata meningkat menjadi 50% dan pada siklus II rata-rata meningkat sebesar 75%. Selanjutnya nilai rata-rata hasil belajar siswa juga mengalami peningkatan pada setiap siklusnya mulai dari pra siklus sebesar 62,5 . Selanjutnya pada siklus I meningkat sebesar 70, dan pada siklus II meningkat lagi menjadi 82,5. Berdasarkan hasil penelitian tersebut, dapat disimpulkan bahwa penggunaan model pembelajaran berbasis masalah dapat meningkatkan aktivitas dan hasil belajar siswa kelas III SD N Ploso pada materi bangun ruang.

Kata Kunci : Keaktifan, Hasil Belajar: Keaktifan, Hasil Belajar, Pembelajaran Berbasis Masalah

## Introduction

Education plays an important role in human life, especially in advancing competence, skills, and personality. Education is an important means of preparing a quality next generation. Today's human resources are not only able to develop in terms of intellect but also in terms of attitudes and skills. To encourage these three aspects in students, it is necessary to form students' characters who are active in every learning activity. In the Big Indonesian Dictionary, active means being active in work or business. The work and effort activities carried out by students in the learning process are by the lesson material presented by the teacher. Sudirman (2001:98) states that activeness is an activity that is both physical and mental, namely doing and thinking as a series that cannot be separated. Then, according to Ulun (2013: 12), active learning is the activity or busyness of students in teaching and learning activities at school and outside school that supports student success. So it can be concluded that student activity is a student's efforts both physically and mentally to develop his or her potential in every ongoing learning process activity.

Indicators of learning activeness according to (Sudjana, 2016: 61) can be seen from several things, namely: (1) When teaching and learning activities take place students participate in carrying out their learning tasks, (2) Students want to be involved in solving problems in learning activities, (3) Students want to ask friends or the teacher if they don't understand the material or encounter difficulties, (4) Students are willing to try to find information that is needed to solve the problems they are facing, (5) Students carry out group discussions according to the teacher's instructions, (6) Students are able assess their abilities and the results they obtain, (7) Students practice solving questions or

problems, and (7) Students have the opportunity to use or apply what they have obtained in solving the tasks or problems they face.

From the results of observations made in class III of SD N Ploso, the students still appear to be less active in participating in every learning activity in class and outside of class. The students tend to be passive when asked by the teacher and it can also be seen from their faces that they look sleepy. Apart from that, students also seem to lack initiative when solving problems, so when they are faced with questions they often answer that they don't know. When students do group activities, only 1 person does the work while other group members do not participate in the work and carry out activities outside of learning. As a result of this incident, students tend to be less active, which ultimately results in their learning outcomes being less than optimal.

Learning outcomes will of course be good and satisfying if the learning process runs optimally. The learning process can be said to be optimal if students are enthusiastic and active in participating in every learning activity that takes place. Learning outcomes are the fruit of the efforts (activities) carried out by students. According to Yuwono et al (2020: 107-108), learning outcomes are a reference to the learning process that has been carried out which is known through assessment activities. In Bloom's taxonomy, learning outcomes can be divided into three domains, namely cognitive (knowledge), affective (attitudes), and psychomotor (skills) (Sampurno, 2017: 62). However, in this research, learning outcomes in the cognitive domain will be discussed. Aspects of success in learning activities can be seen from the learning outcomes obtained by students. For this reason, it is necessary to carry out follow-up activities in the form of assessments to determine

student learning outcomes (Laksono et al., 2017: 101).

Based on the results of the assessment at SD N Ploso, student learning outcomes in mathematics learning about flat shapes are less than satisfactory. This is proven by the results of student evaluations with a completion percentage of 50% or an average score of 66.25. This problem seems to be motivated by the lack of student learning activities that demonstrate analytical thinking skills in learning. The results of these observations and interviews show that students' analytical thinking skills still need to be improved.

Students' ability to think analytically can be developed by using appropriate learning strategies. Developing students' analytical thinking skills can be done by designing a learning process

optimize students' ability to explain existing relationships, combine several elements into one, and find alternative solutions to a problem (Handayani & Dewanti, n.d. 2020: 204). According to Minister of Education and Culture Regulation No. 22 of 2016, one of the learning models recommended for teachers is problem-solving-based learning. The problem-based learning (PBL) learning model is learning that focuses on problem-solving activities. (Dasa Ismailmuza, n.d. 2010). This means that students are actively able to find answers to the problems given by the teacher. In this case, educators act more as mediators and facilitators to help students actively construct knowledge. (Siregar, 2016).

According to Dutch in M. Taufik Amar (1994) states that PBL is an instructional method that challenges students to "learn and learn", working together with groups to find solutions to real problems. This problem is used to link students' curiosity analytical skills and initiative regarding

learning material. PBL prepares students to think critically and analytically and to search for and use appropriate learning resources. The syntax of the problem-solving-based learning model is (1) Student orientation to the problem. (2) Organizing students, (3) Guiding individual and group investigations, (4) Developing and presenting work results, and (5) Analyzing and evaluating processes (Sofyan et al., 2017: 58).

This research aims to increase students' activeness and learning outcomes regarding flat shapes by using the problem-based learning model in class III of SD N Ploso.

## Method

This research was conducted in the eighth semester of the 2022/2023 academic year. The research method used in this research is classroom action research (PTK). The subjects in this research were class III students at SD N Ploso with a total of 4 students. This research was carried out in two cycles with a total of four meetings consisting of (1) planning activities, (1) implementation activities, (3) observation activities, and (4) reflection activities. The variables in this research are dependent variables and independent variables. The independent variable in this research is the Problem-Based Learning (PBL) learning model.

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The variables in this research include the dependent variable and the independent variable. The dependent variables in this

research are activeness and mathematics learning outcomes. Meanwhile, the independent variable in this research is the problem-based learning model. Data collection in this research used test techniques (directly giving questions) and non-tests (observation activities in learning). Test techniques are used to determine student learning outcomes through evaluation question instruments at the end of each lesson. Meanwhile, non-test techniques are used to determine student activity during learning and determine student activity through observation sheets. The data analysis techniques in this research are qualitative and quantitative.

## Result

Based on the learning that has been carried out from the beginning of cycle I to cycle II, student activity during learning activities has increased significantly. The results of classroom action research concluded that learning actions using the problem-based learning (PBL) model can increase student learning activity. Furthermore, the table below is the result of a comparison of research on students' active learning in mathematics subjects on flat shapes using the problem-based learning (PBL) model.

Table 1. Hasil Keaktifan Belajar Siswa

No	Kategori Keaktifan Belajar Siswa	Pra Siklus		Siklus I		Siklus II	
		F	%	F	%	F	%
1	Tinggi	1	25%	2	50%	3	75%
2	Sedang	2	50%	1	25%	-	0%
3	Rendah	1	25%	1	25%	1	25%

In Table 1 above, the results of student learning activity are known. In the pre-cycle, it was discovered that out of a total of 4 students who received the "High" activity category, 1 student had a percentage of 25%, then in the "Medium" activity results there were 2 students with a percentage of 50%. Furthermore, in the "Low" activity category there was 1 student with a percentage of 25%. After carrying out cycle I in the "High" activity category there were 2 students with a percentage of 50%, then in the "Medium" activity category, there were 1 student with a percentage of 25%. Furthermore, in the "Low" activity category there was 1 student with a percentage of 25%. After

carrying out cycle II, it was discovered that the results of students' active learning were in the "High" category with as many as 3 students with a percentage of 75%, then in the "Medium" activeness results there were 0 students with a percentage of 0%. Furthermore, in the "Low" activity category there was 1 student with a percentage of 25%.

Researchers also obtained data related to the results of students' daily evaluations at the end of class III learning at SD N Ploso. The evaluation is carried out for 20 minutes at the end of the learning activity. The questions given by the teacher are 5 essay questions.

Table 2. Hasil Belajar Siswa

No	Hasil Evaluasi Siswa	Pra Siklus	Siklus I	Siklus II
1	Rerata Nilai	62,5	70	82,5
2	Siswa Tuntas	1	2	3
3	Siswa Belum Tuntas	3	2	1
4	Presentase Tuntas	25%	50%	75%

Based on the table of student learning outcomes, it can be seen that students' grades in each cycle increase. During the pre-cycle, it was discovered that 3 students scored below 75 (KKM) with an average score of 62.5. The percentage of student completion in the pre-cycle was 25% or only one student completed it. Then the results of student evaluations in cycle I showed that half of the students had scored above the KKM, but the researchers felt they had to make improvements by carrying out cycle II. This is because 2 students have not finished or got a score below the KKM with a percentage of 50%. Two students whose scores did not meet the KKM were due to the implementation of learning which required students to think that the analysis of a problem had not been carried out for too long and required continuous habituation carried out by the teacher using appropriate learning models. This is the opinion of Handayani & Dewanti, n.d. (2020: 204) that students' abilities to think analytically can be developed by using appropriate learning strategies.

Based on data obtained in cycle II, the average student evaluation score was 82.5. In cycle II there were still students with scores that were not above the KKM, but the percentage of student completion had reached 75% with 1 student who did not complete. This indicates that most students are getting used to the problem-based learning model. The success achieved by

students by increasing learning outcomes in each cycle cannot be separated from the use of the problem-based learning model. Learning activities that apply the problem-based learning model require students to be able to analyze real problems in everyday life. After knowing what problems they are facing, students are required to connect the problems with theories or experiences that they already understand. At the end of the analytical thinking stage, students must make conclusions and find an optimal, effective, and efficient solution. This is the opinion of Handayani & Dewanti, n.d. (2020: 204) that developing students' analytical thinking skills can be done by designing a learning process that optimizes students' abilities in explaining existing relationships, combining several elements into one, and finding alternative solutions to a problem.

### Conclusion

Based on the research results, it can be concluded that the use of the problem-based learning model can increase the activeness and learning outcomes of class III students at SD N Ploso in the shape material. This can be proven by the increase in students' average learning activity in each cycle. In the pre-cycle it was 25%, then in cycle I the average increased to 50% and in cycle II the average increased by 75%. Furthermore,

the average value of student learning outcomes also increased in each cycle starting from the pre-cycle of 62.5. Furthermore, in cycle I it increased by 70, and in cycle II it increased again to 82.5

## Reference

- Dasa ismaimuza. (n.d.). pengaruh pembelajaran berbasis masalah dengan strategi konflik kognitif terhadap kemampuan berpikir kritis matematis dan sikap siswa smp. jurnal pendidikan matematika, vol.4(no.1), h.2
- Handayani, S. L., & Dewanti, M. A. (n.d.). Peningkatan Kemampuan Analisis Melalui Strategi PQ4R (Preview, Question, Read, Recite, Reflect, Review) Pada Pembelajaran IPA Sekolah Dasar. Jurnal Pemikiran, Penelitian dan Pengabdian Masyarakat Bidang Pendidikan. 10, 2020. <http://ojs.unm.ac.id/index.php/>
- Laksono, E. W., Rohaeti, E., & Irwanto, dan. (n.d.). Instrumen Penilaian Kemampuan Berpikir Analitis Dan Keterampilan Proses Sains Kimia
- M Taufik amir. (2015). inovasi pendidikan melalui problem based learning. jakarta: prenadamedia group.
- Sampurno. (2017). Meningkatkan Hasil Belajar Siswa Pada Materi Kedauletan Dengan Menggunakan Model Jigsaw Di Kelas Viii Smp Negeri 4 Bati Bati. Jurnal Pendidikan Kewarganegaraan, 7(1)
- Sardiman. (2001). Interaksi dan Motivasi belajar Mengajar. Jakarta: Raja Grafindo Persada
- Siregar, purwanto dan seri. (2016). pengaruh model pembelajaran problem based learning (pbl) terhadap belajar siswa pada materi pokok suhu dan kalor di kelas x semester ii sma negeri 11 medan t.p 2014/2015. jurnal ikatan alumni fisika universitas negeri malang, vol.2(no.1), h.26.
- Sudjana, N., 2016. Penilaian Hasil Proses Belajar Mengajar. Bandung:Rosdikarya.
- Sofyan, H., Kokom, W., & Triwiyono, K. E. (2017). PROBLEM BASED LEARNING dalam Kurikulum 2013.
- Ulun, 2013. Pembelajaran Aktif: Teori Dan Asesmen. Bandung: Remaja Rosdakarya.
- Yuwono, G. R., Sunarno, W., & Aminah, N. S. (2020). Pengaruh Kemampuan Berpikir Analisis Pada Pembelajaran Berbasis Masalah (Pbl) Terhadap Hasil Belajar Ranah Pengetahuan. EDUSAINS, 12(1).<https://doi.org/10.15408/es.v12i1.1165>