

## IMPLEMENTATION OF PROBLEM-BASED LEARNING MODEL TO IMPROVE STUDENTS' LEARNING OUTCOMES ON THE MATERIAL OF GEOGRAPHICAL CONDITIONS OF INDONESIA

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### ABSTRACT

This study used a Classroom Action Research (PTK) approach with 28 students in class V/A SD Negeri 5 Banda Aceh. Data collection techniques are carried out by conducting tests and observations. The data analysis technique is done by knowing the level of classical completeness with a percentage score. Based on the research results in cycles I and II, data were obtained, namely the learning outcomes of students obtained in cycle I were the results of cycle I, the percentage of completeness was 71% (enough) and the results in cycle II, the percentage of completeness was 89% (very good). As well as the results of the first cycle of observing teacher activity got 87.5 (good) and the second cycle of observing teacher activity got 95 (very good). While the observation of student activity cycle I got a score of 76 (Enough) and in the second cycle the observation of student activity got a score of 90 (Very Good). This proves that there has been an increase in the activities of teachers and students in the first cycle of action to the second cycle of action by using the problem based learning model on the subject matter of the Geographical Conditions of the State of Indonesia can improve student learning outcomes.

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### INTRODUCTION

Education is very important and is one of the needs of every human being. Education in schools is a formal education that involves teachers and students. The interaction between teachers and students is called the learning process. The learning process has the aim that students can achieve the expected competencies. With the achievement of these competencies, it is hoped that the objectives of education can also be achieved, namely to lead students towards changes in behavior both intellectually, morally and socio-culturally.

Education is closely related to learning. Learning is an activity that can change a behavior, the process of seeking new knowledge and understanding the process of what

has been learned by the individual. In the learning process, teachers are required to create something fun and students must be active and independent in the learning process. So that the learning process can be carried out optimally and achieve the goals expected by both teachers and students.

One of the lessons taught to lead students towards changes in behavior both intellectually, morally and socio-culturally is pelajaran Social Studies (IPS). Social studies learning means the process of teaching all aspects of the phenomenon, development and problems of human social life in society. In its implementation should be created learning conditions that are active, creative, effective and fun for students so as to develop the mindset of students in order to solve a problem.

Social studies education is one of the educational programs that prepare students as good citizens and communities that are expected to be able to anticipate the various changes that occur in society, so that students have the provision of knowledge and skills in living life in society.

One of the learning strategies that are considered capable of improving the problem solving ability of learning social studies is to use the Problem Based Learning (PBL) learning model. PBL can build critical thinking skills, teachers can provide learning experiences by designing the learning process by providing problems that involve critical thinking skills and the process of analyzing based on actual problems. According to (Yuafian & Astuti, 2020) the implementation of this learning model can increase the creativity of students through teamwork, so that students can actively collaborate to solve problems by applying the skills of identifying, analyzing, making and creating products. So that satisfactory results can be obtained. Meanwhile, according to Udin (in Shilphy, 2020: 12) the learning model is a conceptual framework that describes systematic procedures in organizing learning experiences to achieve specific learning objectives. The learning model serves as a guide for learning designers and teachers in planning and implementing learning activities.

According to (Budianto, 2021) the Problem Based Learning learning model is designed to solve problems based on the knowledge and experience of students to form new experiences and knowledge. PBL involves students in an active, collaborative and learner-centered learning process, to develop problem-solving skills and independent learning skills needed to face challenges in everyday life.

The purpose of social studies is to enable students to deal with changing circumstances that are always evolving through practice acting on the basis of critical

thinking. Therefore, these demands cannot be achieved by learning mathematics which only emphasizes memorizing formulas. Problems in social studies learning can be presented in the form of story problems, depictions of phenomena or events as well as illustrations of images or puzzles, therefore problem solving is very important in the learning process and completion, students will gain experience using the knowledge and skills already owned so that problem solving is important to convey to students so that they are able to make decisions (Budianto, 2021).

A good learning process will produce something that is the result of learning itself. According to Gagne and Driscoll in (Sutrisno, 2021), learning outcomes are abilities that students have as a result of learning actions and can be observed through the performance of students. Learning outcomes are closely related to learning and the learning process. Learning outcomes will be maximized when learning and the learning process goes well. Learners can be said to have achieved learning outcomes when these learners have changed behavior through the learning process. Behavior changes are obtained by students when they have completed their learning program through interaction with various learning resources and the learning environment.

According to Dick and Reiser in (Sutrisno, 2021), learning outcomes are the abilities that students have as a result of learning activities, which consist of four types, namely knowledge, intellectual skills, motor skills and attitudes. Thus, it can be concluded that learning outcomes are changes in overall behavior not just one aspect of human potential.

According to Slameto (Yudha, 2018) states that the factors that influence learning can be classified into two, namely internal factors (body, psychology, and fatigue) and external (environment, school and society).

From the results of observations made in social studies lessons conducted on 28 fifth grade students at SD Negeri 5 Banda Aceh, data collected through observations of students by utilizing field notes are 11 students who are complete and 17 students who are not complete. From the results of observations made at SD Negeri 5 Banda Aceh, several problems were found including low student learning outcomes. This was obtained from the social studies classical average score of 65 which means that the score is still below the Minimum Completion Criteria (KKM) as applied by the school concerned which is 75.

This fact shows that the social studies learning outcomes in the class are still low. This is influenced by several factors including: (1) Students have not been able to understand well the concept of material taught by the teacher, (2) students are less

actively involved in learning, (3) lack of communication and group discussions in fifth grade students of SD Negeri 5 Banda Aceh in social studies learning.

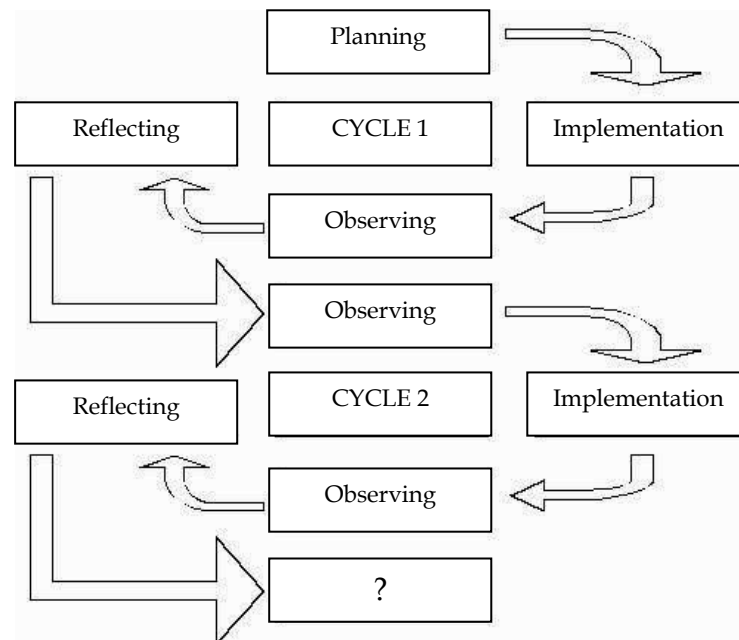
Based on these problems, the researcher is interested in conducting research on "Application of Problem Based Learning Model to Improve Students' Learning Outcomes on the Material of Geographical Conditions of the State of Indonesia Class V SD Negeri 5 Banda Aceh" through Classroom Action Research (PTK).

### RESEARCH METHODOLOGY

This research was conducted at sd negeri 5 banda aceh which is located at jl. Sultan alaidin johansyah, seutui, kec. Baiturrahman, banda aceh city, aceh 23116. This research was conducted in class v odd semester of the 2023/2024 school year. The research time was adjusted to the existing social studies lesson schedule at sd negeri 5 banda aceh.

This research uses a qualitative approach. Because this research views the object as something dynamic, the result of the construction of thoughts and interpretations of the symptoms observed, and whole (holistic) because every aspect of the object has a unity that cannot be separated (sugiyono 2011: 17).

The following is the flow of ptk which has been designed by arikunto (2010: 16).



**Figure 1 Classroom Action Research Flow**

The stages of Classroom Action Research can be described as follows: 1. planning, 2. implementation of action, 3. observing, 4. reflecting.

Data collection in research is one of the research procedures for collecting data.

Therefore, a valid data collection technique is needed to achieve good results. The data collection techniques used in this study are tests and observations.

To observe the action of this study, observers used teacher observation sheets and student observation sheets on decimal number learning material using problem-based learning models. Here the target of the observer is to see how the learning process takes place when using the problem-based learning model and how the activities of teachers and students when learning takes place.

### Data Analysis

Data analysis is one of the most important steps in research to obtain data and in concluding problems. This data analysis was carried out to determine the success or failure of the actions taken in this study. The technique used for data analysis in this study is quantitative descriptive technique.

#### 1. Teacher Activity Data

The data obtained will then be analyzed based on the formulation of research problems, namely as follows:

$$P = \frac{f}{n} \times 100$$

Description:

P = Percentage level achieved

f = Number of activity scores obtained by students

n = Total score

Based on the above calculations, the criteria for classical student learning activities are as follows:

Table 1. Teacher activity criteria

Score Range	Criteria
91 – 100	Very good
81 – 90	Good
71 – 80	Fair
60 – 70	Less
<60	Not Good

#### 2. Student activity data

As for calculating the percentage of student activity as follows:

$$P = \frac{f}{n} \times 100$$

Description:

P = Percentage level achieved

f = Number of activity scores obtained by students

n = Total score

Based on the above calculations, the criteria for classical student learning activities are as follows:

Table 2. Criteria for student learning activity

Score Range	Criteria
91 – 100	Very good
81 – 90	Good
71 – 80	Fair
60 – 70	Less
<60	Not Good

### 3. Learning Outcome Data

Data related to student learning outcomes are taken from the cognitive abilities of students in solving problems and analyzed in the form of an average of learning completeness.

#### a. Calculating the average

To calculate the average, the formula is used:

$$\bar{x} = \frac{\sum x}{N}$$

Description:

x = Average value

$\sum x$  = Total class score

N = Number of students who took the test

Students can be said to have completed learning if they have reached the minimum completeness criteria (KKM) according to what has been determined in social studies subjects at SD Negeri 5 Banda Aceh.

Table 3. Class average criteria

Score Range	Criteria
90 – 100	Very good
80 – 89	Good
65 – 79	Fair
55 – 64	Less
<55	Not Good

b. Calculating learning completeness

Data obtained from student learning outcomes can be determined by classical learning completeness using descriptive percentage analysis with calculations:

$$P = \frac{f}{n} \times 100$$

Description:

P = Class learning completeness score

f = Number of scores of students who have completed learning

n = Number of students

Based on the above calculations, the criteria for classical student learning outcomes are as follows.

Table 4. Criteria for student learning outcomes

Score Range	Criteria
90 – 100	Very good
80 – 89	Good
65 – 79	Fair
55 – 64	Less
<55	Not Good

## RESULTS AND DISCUSSION

### Result

This study was conducted to improve student learning outcomes through the problem based learning (pbl) learning model. This research was carried out through 2 cycles, namely the first cycle and the second cycle. Each cycle consists of four stages, namely planning, acting, observing and reflecting. This study used the problem based learning (pbl) model on grade v students of sd negeri 5 banda aceh which amounted to 28 students, consisting of 16 male students and 12 female students. For the presentation of data in this study, researchers grouped into three (3) stages, namely the pre-cycle, cycle i and cycle ii stages. The following is a description of the results of the research stages in each cycle carried out in learning, namely:

#### 1. Pre-cycle

Before carrying out the action, the teacher conducted a pre-cycle stage to students. This action is taken as a benchmark for comparison before and after class action, namely by applying the Problem Based Learning (PBL) learning model. The student learning outcomes at this pre-cycle stage are the highest score achieved by students is 90 and the

lowest score is 20 and it can be concluded that of the total number of students, those who are complete are fewer than those who are not complete. There are 11 students who are complete with a percentage of 39% while there are 17 students who are not complete with a percentage of 61%. The following is the calculation information. Based on the percentage of student completeness, there are still 17 students who have not reached the Minimum Completion Criteria (KKM) on data preparation material in class V determined by the school. The results of the data that has been obtained show that there is a need for corrective action in learning so that student learning outcomes increase.

## 2. Cycle I

Cycle I has 4 stages, namely planning, acting, observing, and reflecting which will be described as follows:

### a) Teacher Activity Observation Results

The results of the implementation of teacher activity observations in cycle I using the Problem Based Learning (PBL) model approach obtained a total score of 87.5 from a maximum score of 88. From the calculation of these scores, it can be seen that the teacher's activity value is 89 which is included in the Good category. The data above also shows that there are still some teacher abilities that are still low and need to be improved.

### b) Student Activity Observation Results

The results of the implementation of student activity observations in cycle I, using the Problem Based Learning (PBL) model obtained a total score of 67 from a maximum score of 88. From the calculation of these scores, it can be seen that the value of student activity is 76 which is included in the sufficient category. There are several aspects in the student observation sheet that have not been implemented optimally, namely students are less orderly during the group discussion process, students still lack a response to questions given by the teacher, students do not listen carefully to the explanation from the teacher. So that there needs to be improvement in the next cycle.

### c) Cycle I Test Results

Based on the results of the first cycle test, it can be seen that as many as 20 students were complete out of 28 students with a percentage of completeness of 71% and 8 students who were not complete with a percentage of 29% /. Based on the percentage of student completeness there are still 8 students who have not



reached the Minimum Completion Criteria (KKM). The results of the data that has been obtained show that there is still a need for improvement in the next cycle of learning so that student learning outcomes will increase.

### 3. Cycle II

The results of the reflection in cycle I showed several obstacles that caused the learning to take place less than optimal. Therefore, improvement steps will be taken to the learning process that will be carried out in cycle II. The implementation of the research to be carried out in cycle II is the same as the previous cycle, which consists of four stages which include, planning, action implementation, observation and reflection.

#### 1) Teacher Activity Observation Results

The results of the implementation of teacher activity observations in cycle II using the Problem Based Learning (PBL) model approach obtained a total score of 84 from a maximum score of 88. From the calculation of these scores, it can be seen that the teacher's activity value is 95 which is included in the Very Good category.

#### 2) Student Activity Observation Results

The results of the implementation of student activity observations in cycle II, using the Problem Based Learning (PBL) model obtained a total score of 80 out of a maximum score of 88. From the calculation of these scores, it can be seen that the value of student activity is 90 which is included in the very good category.

#### 3) Cycle II Test Results

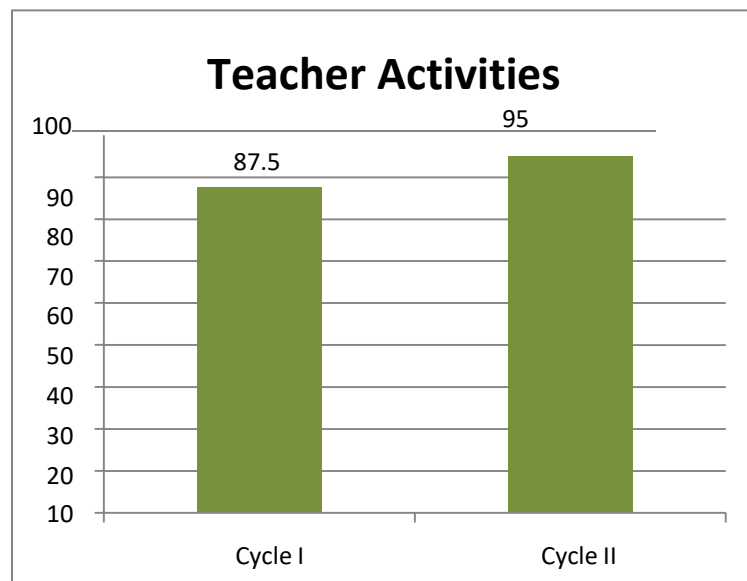
Based on table 4, it can be seen that as many as 25 students were complete out of 28 students with a percentage of completeness of 89% and 3 students who were not complete with a percentage of 11%.

From the results of the cycle II test, it can be explained that the learning outcomes of students who completed reached 89% or 25 students have reached completeness. These results show that the efforts of the Problem Based Learning (PBL) learning model have improved learning outcomes better than learning activities in cycle 1. From the test results, it can be concluded that the learning outcomes on learning the topic of data preparation through the Problem Based Learning (PBL) learning model that has been followed by fifth grade students of SD Negeri 5 Banda Aceh are declared in the complete category.

## Discussion

Researchers conducted a learning process on the material of the Geographical Conditions of the State of Indonesia using the Problem Based Learning (PBL) model from cycle I and cycle II so that it can be concluded that the use of the Problem Based Learning (PBL) model is appropriate to be applied to the material of the Geographical Conditions of the State of Indonesia Class V Sd Negeri 5 Banda Aceh for 2 cycles. This is because this learning model makes students more actively involved, independent and creative in solving problems. So that students are enthusiastic about learning because it is supported by a fun approach. The Problem Based Learning (PBL) model has been proven to have increased from cycle I to cycle II.

In teacher activity observations and student activity observations for two cycles experienced an increase in cycle II. The value of teacher activity observations in cycle II increased to 95 and student activity observations in cycle II increased to 90. The increase in teacher and student activity observations in cycle I and cycle II can be seen in figures 2 and 3 as follows:



**Figure 2. Teacher Activity Observation graph**

Based on the bar chart above, it is known that the results of observations of teacher activity increased from cycle I obtained a score of 87.5 and in cycle II obtained a score of 95. Thus the teacher's activity is included in the Very Good category.

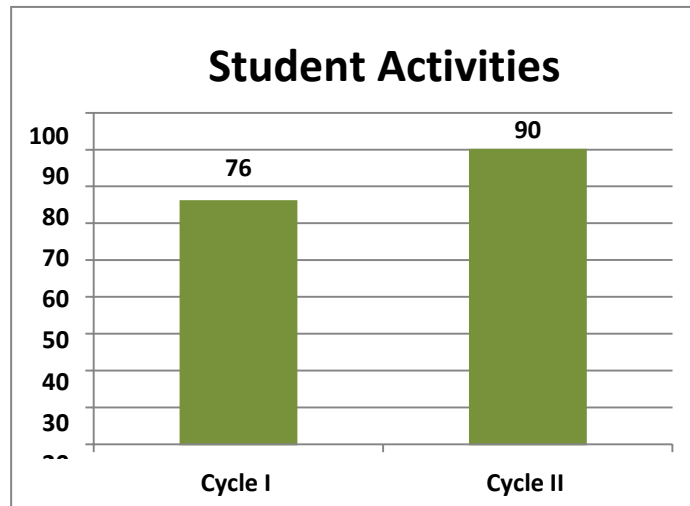


Figure 3. Graph of Student Activity Observation

Based on the bar chart above, it is known that the results of observations of student activity increased from cycle I obtained a score of 76 and in cycle II obtained a score of 90. In cycle I and cycle II student activity has reached the success indicator so that no further improvement needs to be made.

Based on the results of research from pre-cycle, cycle I and cycle II data in class V, it is known that each action has increased. The results of pre-cycle data can be seen previously from 28 students only 12 students whose scores reached the KKM. So it can be concluded that with a percentage of completeness of 40% so that it is included in the category of less than complete learning outcomes obtained by students. The results of the pre-cycle data on data preparation material obtained are still arguably low, therefore the researcher takes action so that student learning outcomes increase. It is known that there is an increase in learning outcomes in the material of the Geographical Conditions of the State of Indonesia after applying the Problem Based Learning (PBL) model, which can be seen in Figure 4.3 the percentage of student completeness below as follows:

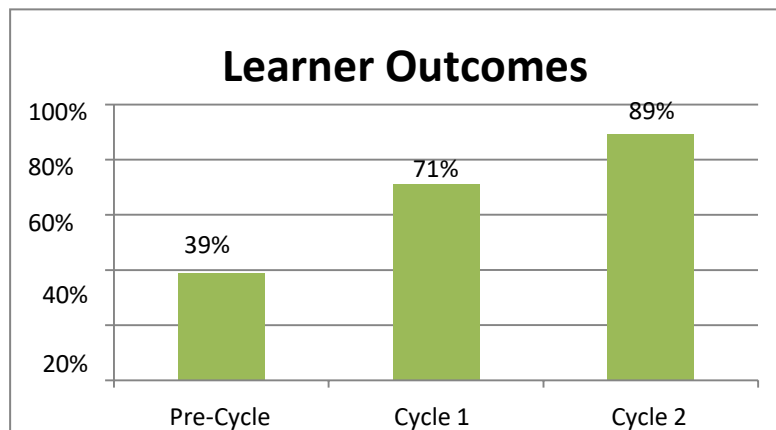


Figure 4. Percentage of Student Learning Outcomes

Based on the picture above, it can be seen that the results obtained there is a percentage of student completeness has increased every cycle. This is supported by the reflection of each cycle and the results of interviews with class teachers. The results of the pre-cycle data values are still relatively low, this is because students are still having difficulty with the material on the Geographical Conditions of the State of Indonesia. Conducting follow-up to cycle I has increased from 28 students, 20 students who are complete and 8 students who are still said to be unfinished with a percentage of 71%. This is because there is still a lack of reinforcement of data preparation material and students are still confused in solving problems related to data preparation material. So that researchers returned to follow-up to cycle II.

The percentage level of learning outcomes in cycle II has increased from cycle I by 18% with the acquisition of a percentage in cycle II of 89% which is included in the excellent category. This is due to the improvements made both from teacher activities and student activities as well as the application of the Problem Based Learning (PBL) model well. Therefore, the actions of cycle II carried out can improve learning outcomes on the material of the Geographical Conditions of the State of Indonesia in class V SD Negeri 5 Banda Aceh by applying the Problem Based Learning (PBL) model has successfully achieved performance indicators and researchers do not need to do the next cycle.

## **CONCLUSION**

Based on the results of research and discussion that has been carried out in PTK regarding improving learning outcomes on the material of the Geographical Conditions of the State of Indonesia using the Problem Based Learning (PBL) model for fifth grade students of SD Negeri 5 Banda Aceh, it can be concluded as follows:

1. The use of the Problem Based Learning (PBL) model on data preparation material in class V SD Negeri 5 Banda Aceh has been implemented well. This is evident in the results of cycle I observation of teacher activity getting 87.5 (Good) and cycle II observation of teacher activity getting 95 (very good). While the observation of student activity in cycle I received a score of 76 (Fair) and in cycle II observation of student activity received a score of 90 (Very Good).
2. The learning outcomes of students in class V/A SD Negeri 5 Banda Aceh on the material of the Geographical Conditions of the State of Indonesia have increased after using the Problem Based Learning (PBL) model. This is evident from the

results of cycle I, the percentage of completeness is 71% (sufficient) and the results of cycle II, the percentage of completeness is 89% (very good).

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