



## THE INFLUENCE OF IMPLEMENTING THE PROJECT BASED LEARNING MODEL ON THE CRITICAL THINKING SKILLS OF CLASS IV STUDENTS AT STATE PRIMARY SCHOOL 173642 HASAHATAN

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### Abstract

This research is motivated by the lack of students' critical thinking skills, students tend to be passive in the learning process, and teachers are less precise in implementing learning models that can train students' critical thinking skills. This research aims to determine students' critical thinking skills. This research method is a quantitative research method. The population is class IV students at SD Negeri 173642 Hasahatan which consists of one class. Sampling was carried out with saturated samples. The independent variable is the Project Based Learning learning model, the dependent variable is students' critical thinking skills. Hypothesis testing uses Paired sample T-Test which is preceded by a validity test and a reliability test. The results of this research using hypothesis testing obtained a significance value of .000. Means  $0.000 < 0.05$ , then  $H_a$  is accepted. It can be concluded that there is an influence of the application of the Project Based Learning model on the Critical Thinking Skills of Class IV Students at SD Negeri 173642 Hasahatan".

**Keywords:** *Project Based Learning Model, Critical Thinking Skills*

### 1. INTRODUCTION

Law Number 20 of 2003 concerning education means that education is a basic and planned effort to realize and produce human beings as students in a learning atmosphere so that students actively develop their potential so that they have religious spiritual strength, personality, intelligence, skills, and noble morals. beneficial to society, nation and state. Learning is a process that will cause changes in a person's personal self. Learning changes in a person's personality can be in the form of character that is caused through training or experience. Education gives students the possibility to gain opportunities, hope and knowledge in order to live a better life. The amount of opportunity and hope really depends on the quality of education pursued.

Education can also be a force to make changes so that conditions

(2019:1) pendidikan yang berkualitas become better. According to Sani of course, involving students to be active in learning and directing the formation of the values that students need in life. Apart from that, students must also be equipped with adequate knowledge, attitudes and skills to face future challenges.

The following are some of the skills that students need to have according to SCANS in Sani (2019:9) namely 1) basic skills, including reading, writing, listening, speaking, basic arithmetic; 2) thinking skills, including creative thinking, solving problems, making decisions, seeing ideas, knowing how to learn, reasoning; 3) personality skills, namely responsibility, self-confidence, social behavior, self-management, integrity/honesty, 4) management skills including identifying, managing and allocating; 5) interpersonal skills include participating, sharing knowledge and skills, practicing leadership,

negotiating, working with diversity; 6) skills in obtaining and using information; 7) system understanding skills, and; 8) skills in mastering and using technology. Some of the skills above can lead to students' thinking abilities. The thinking abilities that are directed through learning in elementary school are high-level thinking abilities. One of the higher order thinking abilities is the ability to think critically.

According to Yaumi in Wijayanti (2015), critical thinking is the cognitive ability to draw conclusions based on logical reasons and empirical evidence. In principle, people who are able to think critically are people who do not simply accept or reject something, they will examine, analyze and evaluate before determining whether they accept or reject the information. From the various expert opinions above, it can be concluded that critical thinking ability is everyone's ability to solve problems and make decisions (conclusions) from various aspects and points of view. The ability to think critically is an important intellectual capital for students to have when dealing with problems in their daily lives.

By conducting this research, it is hoped that students will have good critical thinking skills in learning. The aim of this research is to improve students' critical thinking skills regarding learning, especially science learning. Through a learning method, students can improve critical thinking. To overcome this problem, a learning method is needed that can activate students and change the way students view science learning.

Thus, based on these problems, the research carried out was conducting research with **"The effect of implementing the Project Based Learning model on the critical thinking skills of class IV students at SD N 173642 Hasahatan T.A 2022/2023."**

## 2. RESEARCH METHODS

For this type of research model used in this research is Project Based Learning (PjBl). The Project Based Learning learning model is a learning model that involves students in problem solving activities through their thinking skills. The focus of learning lies on the core principles and concepts of a scientific discipline, involves students in problem solving and other meaningful tasks, gives students the opportunity to work independently or in groups in constructing their own knowledge, and reaches the peak of generating new ideas. (Putri, 2019:3). This learning model is very suitable for improving

students' thinking skills so that students' interest in learning increases and learning outcomes are maximized.

Learning using the Project Based Learning model consists of several stages or steps that must be implemented so that the learning objectives can be achieved. The stages of the Project Based Learning model according to Abidin in Fitriani (2017:524) are 1) pre-project; 2) identify problems; 3) create a design and project implementation schedule; 4) carry out research, 5) prepare a product draft/prototype; 6) measure; 7) assess and improve products; 8) product finalization, and finally; 9) post-project. It is believed that learning stages using the project based learning model can help improve students' critical thinking abilities.

Time This research was carried out in the even semester of the 2022/2023 academic year between February and April 2023.

### 1. Population

According to Sugiyono (2020:80) Population is a generalized area consisting of: objects/subjects that have certain qualities and characteristics determined by researchers to be studied and then conclusions drawn. So the population in this study were 26 students at SD Negeri 173642 Hasahatan, Parmaksian District.

### 2. Sample

The sampling technique in this research is saturated sampling. Saturated sampling is a sample determination technique when all members of the population are used as samples. This was done because the population was relatively small, less than 30 people or research who want to make generalizations with very small errors. Another term for a saturated sample is a census, where all members of the population are sampled (Sugiono, 2020:85). So the number of samples in this study was all 26 class IV students.

The data collection technique used in research activities is that the instrument used in this research is a test instrument (Pre-Test and Post-test).

In this research, the author used the Pre-Experimental Designs research type in the form of One-Group Pretest-Posttest Design. In this design there is a pretest, before being given treatment. In this way, the results of the treatment can be known more accurately, because it can be compared with the situation before the treatment was given. This design can be described as follows:

$$O_1 \times O_2$$

Information :

O1 = Pre-test value (before being given PjBL)  
O2 = Value

post-test (after being given PjBL)

The influence of PjBL on critical thinking skills

= (O2- O1)

### 1) Validity Test

According to Arifin (2014:246), this empirical validity technique usually uses statistical techniques, namely correlation analysis. This is due to empirical validity looking for a relationship between test scores and a certain criterion which is a benchmark outside the test in question. However, the criteria must be relevant to what is being measured. This validity test uses SPSS version 25.0 for Windows.

### 2) Reliability Test

According to Sugiyono (2018:174) that instrument reliability is a requirement for instrument validation testing. An instrument can be said to be reliable if the instrument is consistent or steady in its measurement results so that it can be trusted. In this research, researchers used Internal Reliability which was obtained by analyzing data from only one test result. As for This reliability test uses the SPSS version 25.0 for Windows application.

The data analysis technique in looking for influence is quantitative. Quantitative data in the form of numbers obtained from expert validation scores and practicality scores by teachers and students, which are used as a measure of the effectiveness of the influence that has been produced.

### 1) Hypothesis Testing

Hypothesis testing is carried out to find out or prove whether the truth is acceptable or not. By carrying out a hypothesis test, it can be seen whether there is an influence of the independent variable on the dependent variable. In this research, the author used Paired sample T-Test. In the Paired sample T-Test test, it starts with formulate a statistical hypothesis, namely:

a)  $H_a$  : There is a difference in the

average grades of fourth grade students at SD Negeri 173642 Hasahatan, Parmaksian District when researchers use the *Project Based Learning model*.

b)  $H_0$  : There was no difference in the average grades of class IV at SD Negeri 173642 Hasahatan, Parmaksian District when researchers used the *Project Based Learning model*.

This hypothesis testing uses the SPSS application version 25.0 for windows.

## 2. DISCUSSION AND RESULTS

This research was carried out at SD Negeri 173642 Hasahatan, Parmaksian District, Toba Regency, North Sumatra on 26 grade IV students. This research aims to determine students' critical thinking skills through the application of the Project based Learning model. After the data is collected, the next step is to analyze the data to find out whether or not there is an influence of implementing the Project Based Learning model on students' critical thinking skills.

The data obtained in this research was taken from the results of students' pre-test and post-test which were tested in class. The first step taken is to provide a pre-test sheet to the students who will be tested. Then, after getting the results from the pre-test, the researcher provided treatment in the form of teaching carried out by applying the Project Based Learning learning model. After that it's the end learning, the researcher gave a post-test sheet to determine the extent of students' critical thinking skills.

Data collection was carried out using test sheets. Before conducting the research, the researcher had first tested the validity of the instrument which was tested at SD Negeri 173642 Hasahatan on class V students, which was one level higher than the 20 students to be tested. After carrying out the validity test, then proceed with the reliability test, and then hypothesis testing.

### 1. Validity Test

The results of the validity test consist of 20 multiple choice questions in the test sheet, each item has the highest value, namely 5 and the lowest value, namely 0. This test sheet has been tested on 20 class V students at SD Negeri 173642 Hasahatan. Then, as for the results of the validity test which was carried out based on the results of the validity test output, it can be seen that there were 18 valid questions, while 2 questions were invalid. Next, the researcher chose 10 valid questions to be questions in the research instrument.

NO	$r_{hitung}$	$r_{tabel}$	MARK SIGNIFICANT	INFORMATION
1	0,769	0,444	<0,001	VALID
2	0,557	0,444	0,008	VALID
3	0,678	0,444	0,001	VALID
4	0,630	0,444	0,003	VALID
5	0,660	0,444	0,002	VALID
6	0,612	0,444	0,004	VALID
7	0,679	0,444	0,001	VALID
8	0,684	0,444	<0,001	VALID
9	0,413	0,444	0,070	INVALID
10	0,769	0,444	<0,001	VALID
11	0,577	0,444	0,008	VALID
12	0,678	0,444	0,001	VALID
13	0,630	0,444	0,003	VALID
14	0,660	0,444	0,002	VALID
15	0,612	0,444	0,004	VALID
16	0,679	0,444	0,001	VALID
17	0,684	0,444	<0,001	VALID
18	0,413	0,444	0,070	INVALID
19	0,660	0,444	0,002	VALID
20	0,612	0,444	0,004	VALID

Table. Validity Results

## 2. Reliability Test

The results of the reliability test questions that have been carried out are as follows:

Table.  
Test Results "Reliability Statistics"

Reliability Statistics

Cronbach's Alpha	N of Items
.923	18

From the data table, it can be seen that the Cronbach's Alpha value is 0.917. This shows that the Cronbach's Alpha value is  $> 0.50$ . This means that the overall problem is said to be reliable or consistent.

## 3. Hypothesis Testing

To test the hypothesis, researchers used T test analysis (T-Test), namely Paired sample T-Test. The analysis used to analyze hypothesis testing is with the help of SPSS version 25.0 for Windows.

The basis for decision making according to Zakiy (2021:128) for the Paired T-Test sample test is:

- The significance value is 5%
- If  $\alpha < 0.05$  then  $H_a$  is accepted
- If  $\alpha \geq 0.05$  then  $H_a$  is rejected

The results of hypothesis testing are as follows:

Independent Samples Test										
Levene's Test for Equality of Variances		t-test for Equality of Means								
F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference			
							Lower	Upper		
Equal variances assumed		18,276	0,000	5,265	50,000	21,538	4,091	29,755	13,322	
Equal variances not assumed				5,265	33,463	21,538	4,091	29,857	13,220	

Table. Hypothesis Test Results

It means :

- 1) If the significance value is  $< 0.05$  or  $t_{count} < t_{table}$ , then there is an influence of the application of the Project Based Learning model on critical thinking skills in class IV students at SD Negeri 173642 Hasahatan.
- 2) If the significance value is  $> 0.05$  or  $t_{count} > t_{table}$ , then there is no effect of applying the Project Based Learning model on critical thinking skills in class IV students at SD Negeri 173642 Hasahatan.

## 4. CONCLUSION

Based on the results of research conducted by researchers, it can be concluded that the critical thinking abilities of class IV students at SD Negeri 173642 Hasahatan before implementing the Project Based Learning learning model were still relatively low. This is proven by the average pre-test score for class IV students which is 52.3 or if rounded up the average student score is 52.

Then, after implementing the Project Based Learning learning model, the critical thinking skills of class IV students at SD Negeri 173642 Hasahatan experienced an improvement. This is evident from the results of the post-test conducted by researchers on class IV students at SD Negeri 173642 Hasahatan after implementing the Project Based Learning learning model and the average post-test score for class IV students was 73.8 or if rounded up the average student score is 74 so it has increased.

Therefore, it can be seen from the results of the hypothesis test in this study that the significance value is 0.000, where  $0.000 < 0.05$ . So the results of the hypothesis test in this research

are that there is an influence of the application of the Project Based Learning learning model on the critical thinking skills of class IV students at SD Negeri 173642 Hasahatan.

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