THE EFFECT OF THE APPLICATION OF *THE PROJECT BASED LEARNING MODEL* ON THE CRITICAL THINKING SKILLS OF GRADE V STUDENTS IN ELEMENTARY SCHOOL AL-WASHLIYAH PERCUT

Eva Damailia, Indah Pratiwi
Elementary School Teacher Education Study
Program, University of Muhammadiyah North
Sumatra
Email : evadamailia6@gmail.com, indahpratiwi@umsu.ac.id

Abstract
This research is motivated by the lack of critical thinking skills of students, students tend to be passive in the learning process, and the lack of teachers in implementing learning models that can train students' critical thinking skills. This research aims to find out students' critical thinking skills. This research method is a quantitative research method. The population is 5th grade students of Al-Washliyah Percut Elementary School which consists of one class. Sampling was carried out with saturated samples. The independent variable is the *Project Based Learning* learning model, the bound variable is the student's critical thinking skills. Hypothesis testing uses *Paired T-Test samples* which are preceded by validity tests and reliability tests. The results of this study using a hypothesis test obtained a significance value of 0.001. It means 0.001 < 0.05, then Ha is accepted. It can be concluded that there is an effect of the application of *the Project Based Learning* model on the Critical Thinking Skills of Grade V Students at SD Al-Washliyah Percut".
Keywords: Project Based Learning *Model, Critical* Thinking Skills

1.   INTRODUCTION

Education provides the possibility for students to gain opportunities, hopes, and knowledge so that they can live better. The magnitude of opportunities and expectations depends largely on the quality of education pursued. Education can also be a force to make changes so that conditions become better. According to Sani (2019:1), quality education certainly involves students to be active in learning and directing the formation of values needed by students in life. In addition, students must also be equipped with adequate knowledge, attitudes, and skills to face challenges in the future.

The following are some of the skills that students need to have according to SCANS in Sani (2019:9) are 1) basic skills, including reading, writing, listening, speaking, basic arithmetic;
2) thinking skills, including creative thinking, problem-solving, making decisions, seeing the picture of ideas,

know how to learn, reason; 3) personality skills, namely responsibility, confidence, social attitude, self-management, integrity/honesty, 4) management skills including identifying, Manage and allocate; 5) Interpersonal Skills Including are participating, sharing knowledge and skills, practicing leadership, negotiating, working in diversity; 6) skills in obtaining and using information; 7) system comprehension skills, and; 8) skills in mastering and using technology.

Some of the skills above can lead to students' thinking abilities. Thinking skills directed through learning in elementary school are high-level thinking skills. One of the skills of *higher order thinking* is the ability to think critically (*critical thinking*). According to Yaumi in Wijayanti (2015), critical thinking is a cognitive ability in drawing conclusions based on reasoning

logical and empirical evidence. Then, according to Susanti (2019:55), the ability to think critically is the ability to analyze based on logical reasoning.

In principle, people who are able to think critically are people who do not just accept or reject something, they will observe, analyze and evaluate before determining whether they accept or reject information. From the various expert opinions above, it can be concluded that the ability to think critically is the ability of everyone to solve problems and make decisions (conclusions) from various aspects and points of view. Critical thinking skills are important intellectual capital for students to have when dealing with problems in their daily lives.

Based on the results of the initial observation carried out when the author participated in the 1st batch of teaching campus program at Al-Washliyah Elementary School, Percut Village, Percut Sei Tuan District, Deli Serdang Regency, the author saw that during the teaching and learning process, learning at Al-Washliyah Elementary School was still conventional, namely teachers did not distribute knowledge, but rather repetition or repetition and in its implementation was still dominated by teachers (*teacher-centered*) so that the student-centered learning approach has not been fully integrated in the implementation of learning at SD Al-Washliyah Percut. In addition, teachers have not used methods or models that require students' active critical thinking and still use the lecture method so that students get bored quickly in following the learning process. This has an impact on the activities displayed by students in the learning. Students also still tend to be passive in the learning process, causing the achievement of student learning outcomes to be less than optimal or below the minimum completeness criteria (KKM) with the KKM = 75 stipulation and triggering a lack of student thinking skills in the learning process.

For more details regarding the learning outcomes of students at the meeting, can be seen in the table below:

Table 1.1 Initial Observation of the Average Score of Theme 1 Subject Students of Class V of SD Al-Washiyah Percut

No	Value	Number of Students
1	50-54	-
2	55-59	9
3	60-64	3
4	65-69	2
5	70-74	2
6	75-79	2
7	80-84	1
8	85-89	1
9	90-94	1
10	95-99	-
Sum		21

During the learning process, the author saw that the questions asked by teachers were still oriented to low-level thinking skills, namely the realm of memory, comprehension, and application. Teachers have not been seen asking questions that aim to improve students' critical thinking skills in following the learning process, so that students are less active in solving problems when participating in learning, then in giving assignments, teachers only provide exercises in the form of working on questions in the package book.

With this learning system, students are also not given the task of making a product from the results of their own thinking related to the material being studied, so that the learning process that has been carried out does not provide space for students to think critically, actively and creatively. Teachers should emphasize a learning model that focuses more on students' thinking skills, so that in the learning process of active students. *The Project Based Learning* learning model is a student-centered learning model. By applying this project-based learning model, students can be more active, creative and can encourage students to improve their thinking skills and the ability to work together in solving problems related to the material being studied, so as to produce a new idea or idea created by the students themselves.

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 in the core principles and concepts of a

discipline, involving students in problem-solving and other meaningful task activities, providing opportunities for students to work independently or in groups in constructing their own knowledge, and reach the peak to produce new ideas (Putri, 2019:3). This learning model is very suitable to be used to improve students' thinking skills so that students' interest in learning increases and learning outcomes are maximized. In addition, this project-based model can make the class atmosphere fun and students will be enthusiastic about learning because this learning model requires students to come up with a new idea.

The Project Based Learning *model* has been used in various studies in elementary schools including:

1) Endah Sriyani Ningsih 2015 with the title "Application of *Project Based Learning* Model with Experimental Methods to Improve Students' Science Process Skills on the Subject of Light Reflection" The results of this research were obtained that by using the *Project Based Learning learning model* with the experimental method, students' science process skills on the subject of light reflection have increased greatly and there are many changes when they have not the implementation of the learning model after the implementation of the learning model;

2) Abdi Rizka 2016 with the title "Application of *Project Based Learning Model* to Increase Creativity and Science Learning Outcomes in Grade 5 Elementary School Students" The results of this study can be determined by using this learning model to increase students' creativity in science learning;

3) Hafizhah Lukitasari 2015 with the title "The Application of *Project Based Learning* Assisted *by Mind Map* to Improve the Quality of Learning for Grade IV Students Sdn 01 Pekalongan, Bojongsari District, Purbalingga Regency" The result of the study is that the quality of learning has greatly increased after the implementation of the *Project Based Learning* learning model assisted *by Mind Map*.

From the description above, the author is interested in conducting research with the title **"The Influence of the Implementation of the *Project Model***

Based Learning **on Critical Thinking Skills of Grade V Students at SD Al-Washliyah Percut".**

2. RESEARCH METHODS

According to Sugiyono (2019:109), the experimental research method is a research method used to find the effect of certain treatments on others under controlled conditions. In this study, the author uses a type of *Pre-Experimental Designs* in the form of *One-Group Pretest-Posttest Design*. In this design, there is a pretest, before being treated. Thus, the results of the treatment can be known to be more accurate, because it can be compared with the situation before being given treatment. This design can be described as follows:

$$O_1 \ X \ O_2$$

Information:
O1 = Pre-test score (before being given PjBL) O_2 = Post-test value (after being given PjBL)
Influence PjBL towards Skills Critical Thinking = (O2– O1)

3. DISCUSSION AND RESULTS

This research was carried out at SD Al-Washliyah Percut, Percut Sei Tuan District, Deli Serdang Regency, North Sumatra on 21 students in grade V. 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 the application of the *Project Based Learning model* has an effect on students' critical thinking skills.

The data obtained in this study were taken from the results *Pre-test* and *post-test* students who are tested in the classroom. The first step is to provide a sheet *Pre-test* to the students who will be tested. Then, after getting the results from *Pre-test*, then

Researchers give *treatment*/ treatment in the form of teaching carried out by applying a learning model *Project Based Learnig*. After that, at the end of the lesson, the researcher gave a sheet *post-test* to find out the extent of students' critical thinking skills.

The data collection was carried out using test sheets. Before conducting the research, the researcher had conducted a validity test of the instrument

In the past, what was tested at SD Al-Washliyah Percut in grade VI students was one level higher than the students to be tested, which amounted to 20 students. After conducting a validity test, then followed by *a reliability* test, and then a hypothesis test.

1. Validity Test

The results of the validity test amounted to 20 items of description questions on the test sheet, each item had the highest score of 5 and the lowest score, namely

1. This test sheet has been tested on 20 grade VI students at Al-Washliyah Percut Elementary School. Then the results of the validity test conducted based on the results of the validity test output, it can be seen that there are 18 valid questions, while 2 questions are invalid. Next, the researcher chooses

10 valid questions to be questions in the research instrument.

Table 4.1
Validity Results

NO	r_hitung	r_tabel	NILAI SIGNIFIKAN	KETERANGAN
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	TIDAK VALID
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	TIDAK VALID
18	0,,660	0,444	0,002	VALID
20	0,612	0,444	0,004	VALID

2. Uji Reliabilitas

Adapun hasil uji reliabilitas soal yang Telah dilakukan adalah sebagai berikut :

Tabel 4.2
Hasil Uji "Reliability Statistics"

Reliability Statistics	
Cronbach's Alpha	N of Items
.923	18

Dari tabel tersebut data dilihat bahwa *Cronbach's Alpha* adalah sebesar 0,917 . Value ini menunjukkkan bahwa nilai *Cronbach's* e of α > 0,60. Dengan ini dinyatakan soal Hal i uhan dikatakan reliabel atau konsisten.

Alph asil Pengumpulan Data Penelitian keselerikut hasil pengumpulan data

3. Penelitian :

Tabel 4.3
ta Penelitian (Pretest dan Posttest)

Nomor Da	Pre-test	Post-Test
1	55	70
2	75	85
3	65	80
4	80	90
5	75	85
6	65	75
7	70	82
8	68	80
9	75	80
10	67	85
11	78	90
12	68	70
13	55	78
14	58	80
15	60	65
16	65	85
17	75	90

Respond		

18	62	80
19	68	85
20	60	80
21	75	85
Jumlah	1419	1700
Rata-rata	67.57143	80.95238
Persentase	67%	80%

A. Uji Hipotesis

To test the hypothesis, the researcher used the analysis of the T-Test, namely the *Paired T-Test sample.* The analysis used to analyze the hypothesis test is with the help of SPSS version 28.0 *for windows.*

The basis for decision-making according to Zakiy (2021:128) for the *Paired test of the T-Test sample* is:
- The significance value is 5%
- If α < 0.05 then Ha is accepted
- If α ≥ 0.05 then Ha is

rejected Meaning:

1. If the significance value < 0.05 or tcal< table, then there is an effect of the application of the *Project Based Learning* model on critical thinking skills in grade V students of SD Al-Washliyah Percut.
2. If the significance value > 0.05 or tcal> ttable, then there is no The effect of model implementation *Project Based Learning* on critical thinking skills in grade V students of SD Al-Washliyah Percut.

The results of the hypothesis test are as follows:

Table 4.4
Hypothesis Test
Results

Paired Samples Test

		Paired Differences							Significance	
					95% Confidence Interval of the Difference					
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper	t	df	One-Sided p	Two-Sided p
Pair 1	Pre Test - Post Test	-13.38095	5.70505	1.24494	-15.97786	-10.78404	-10.748	20	<.001	<.001

Based on the hypothesis test table above, it can be seen that the significance value is 0.001, of which 0.001 < 0.05. This states that *the Project Based Learning* model has an influence on critical thinking skills in grade V students of SD Al-Washliyah Percut.

Discussion Results

This study aims to determine the effect of the application of *the Project Based Learning* model on students' critical thinking skills. In this study, the first researcher made observations first, then the researcher found the problem and raised the problem as a topic of discussion in this study. Before conducting the research, the researcher conducted a validity test and *reliability* test first. Of the 20 questions, there are 18 valid questions and the questions can be said to be reliable because the value *of Cronbach's Alpha* is 0.917. It is

shows that *Cronbach's Alpha* > 0.60. Hereby, it is stated that the overall problem is said to be reliable or consistent.

The data obtained in this study were taken from the results of *the pre-test* and *post-test* tested by grade V students of SD Al-Washliyah Percut. In the results of the pre-test and post-test, there is an increase or increase in scores in students. Then, to calculate the hypothesis in this study by looking at the significance value. From the data from the results of the T Test using *the Paired T-Test sample*, it was obtained that the *Project Based Learning* model had an influence on critical thinking skills in grade V students of SD Al-Washliyah Percut. It is said to be influential because of the significance value of 0.001, of which 0.001 < 0.05.

This research successfully applied *the Project Based Learning* learning model based on Trianto's study. In addition, this study was successful because

The researcher is able to design and implement the steps of *the Project Based Learning* learning model. This research was also successful because the students were enthusiastic in following the series of learning processes, easily adapted to the learning model used, and students paid attention to the explanations of teachers and peers.

This research is also influential because of the learning model *Project Based Learning* has advantages such as making students active, involving students in problem solving, increasing collaboration and being able to develop students' communication skills. This research is also in line with the research of Septiasih (2017), researching about the learning model *Project Based Learning* on student activities and learning outcomes. From the results of his research, it is stated that there is an influence of the learning model *Project Based Learning* on student activities and learning outcomes.

So, the conclusion of this study is that there is an influence on the application of *the Project Based Learning* learning model on the critical thinking skills of grade V students at SD Al-Washliyah Percut.

4. CONCLUSIONS AND SUGGESTIONS

Based on the results of the research conducted by the researcher, it can be concluded that the critical thinking ability of grade V students at SD Al-Washliyah Percut Village before implementing the *Project Based Learning learning model* is still relatively low. This is evidenced by the average pre-test score of class V students is 67.57 or if rounded up, the average student score is 68.

Then, after the implementation of the *Project Based Learning* learning model, the critical thinking skills of grade V students at SD Al-Washliyah Percut Village have improved. This is evident from the results *of the post-test* conducted by the researcher on grade V students at SD Al-Washliyah Percut Village after the implementation of the *Project Based Learning* learning model and the average *post-test* score of grade V students is 80.95 or if rounded up, the average student score is 81 so that it has increased.

Therefore, judging from the results of the hypothesis test in this study, the significance value is 0.001, of which 0.001 < 0.05. So that the results of the hypothesis test in this study are influenced by the application of *the Project learning model*

Based Learning on the critical thinking skills of grade V students at SD Al-Washliyah Percut Village.

BIBLIOGRAPHY

Afandi, Muhamad et al. 2013. *Learning Models and Methods in Schools*. Semarang: Unissula Press.

Fitriani, Lisna and Istianti, Tuti. 2017. Application of *Project Based Learning Model* to Improve Students' Critical Thinking Skills in Social Studies Elementary School Learning. *UPI Anthology Journal*. Volume.5, No. 1.

Isrok'atun and Rosmala, Amelia. 2018. Model-*type Mathematics Learning*. Jakarta: P.T Bumi Aksara Jaya.

Kristanti, Yulita dyah. 2016. Learning Model Based Project Based Learning Model on Disma Physics Learning. *Journal of Physics Learning*. Volume.5, No. 1. Mawardi. 2019. Pengaruh Model Project Based Learning Against the ability Think Critical IPA Grade V elementary school students. *Indonesian Journal of Elementary Education*. Volume.1, No. 1.

Melinda, Neva and Zainil, Melva. 2020. Application of Learning Model *Project Based Learning* To Improve Mathematical Communication Skills of Elementary School Students (Literature Studies). *Tambusai Education Journal*. Volume.4, No. 2.

Pamungkas, Dewi et al. 2019. Improving Critical Thinking Skills and Mathematics Learning Outcomes in Grade IV Students Through the Application of *the Problem Based Learning* Model. *Elementary School Scientific Journal*. Volume.3, No. 2.

Ramdhani, Rahmi. 2021.*Educational Research Statistics (Mathematical Computational Analysis and SPSS application)*. Jakarta :Kencana.

Salim and Haidir. 2019. *Educational Research (Methods, Approaches, and Types)*. Jakarta : Kencana.

Sani, Ridwan Abdullah. 2019. *Scientific Learning for the Implementation of the 2013 Curriculum*. Jakarta: P.T Bumi Aksara Jaya.

Saputri. 2020. Application of *Problem Based Learning* Model to Improve

Critical Thinking Skills of Grade V Elementary School Students. *Journal of Education and* Counseling. Volume.2, No. 1.

Septiasih, et al. 2016. The Application of Video-Assisted Project-Based Learning to Improve Science Learning Activities and Outcomes in Elementary Schools. *PGSD Journal*. Volume.4, No. 1.

Suciani, Tititri et al.2018.Understanding the Learning Model as Readiness for Student Field Experience Practice Program Culinary Education Studies.*Journal of Educational Media Nutrient and Culinary*. Volume.7, No. 1.

Sugiyono. 2018. Educational Research Methods. Bandung: Alfabeta.

Sugiyono. 2020. Educational Research Methods (Quantitative, Qualitative, and R&D Approaches). Bandung: Alfabeta.

Sujana, Dr. H. Atep & Sopandi, Dr. Paed. H Wahyu. 2020. *Innovative Learning Models of Depok* : Rajawali Press.

Susanti, Evi et al.2019.Critical Thinking Skills of Students of SDN Margorejo VI Surabaya Through Type *Jigsaw.Biodusiana Journal*. Volume.4, No. 1.

Titu, M.A. 2015. *The application of the Project-Based Learning (PjBL) learning model to increase students' creativity in economic problem concept material*. Surabaya: State University of Surabaya.

Wayudi, Mauliana et al. 2020. A Study of Critical Thinking Skills Analysis of High School Students. Journal of Office Management Education. Volume.5, No. 1.

Wijanarko, Yudi. 2017. *Make A Match* Learning Model for Fun Science Learning. *Journal of Scholar Park*. Volume.1, No. 1

Wijayanti, et al. 2015. Analysis of Critical Thinking Skills of Grade V Students in Science Learning at 3 Elementary Schools Cluster X, Buleleng District. *E-Journal PGSD University Ganesha Education*. Volume.3, No. 1.

Zakiy, Muhammad. 2021. *SPSS Behavior Research*. Jakarta : Kencana.