

## The Effect of Problem Based Learning Model on Students' Analytical Thinking Ability Based on Learning Outcomes of Islamic Cultural History Subject (SKI)

Siti Seituni<sup>1\*</sup>, Muhammad Rizal<sup>2</sup>, Anis Febriyanti<sup>3</sup>

STKIP PGRI Situbondo<sup>\*1</sup>

Universitas Almuslim<sup>2</sup>

STKIP PGRI Situbondo<sup>3</sup>

<sup>\*1</sup>*email: acikspdi82@gmail.com*

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### *Abstract*

This article describes the influence of the problem-based learning model on students' analytical thinking skills based on the learning outcomes of Islamic Cultural History (SKI) subjects. The modern concept of learning requires students to be creative, responsive and active in searching, selecting and finding, analysing, concluding and reporting learning outcomes. In this study the researcher aimed to find out whether there was an influence between the independent X-variable on the Y-variable. There was a significant effect between problem-based learning on analytical thinking of eighth grade students of MTs Sarji Ar-Rasyid. The results of the analysis obtained t count 0.501 with a significant value of 0.013 which is less than a significance level of 0.05 while the value of R square = 25.1%. The magnitude of the effect of problem-based learning on the analytical thinking of eighth grade students at MTs Sarji Ar-Rasyid is 25.1%, this is shows that 74.9% of the analytical thinking of students is influenced by other factors (internal factors or external factors) that require advanced research.

**Keywords:** Influence, Model, Ability, Learning Outcomes.

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### *Abstrak*

Artikel ini menjelaskan tentang pengaruh model pembelajaran berbasis masalah terhadap kemampuan berpikir analitis siswa berdasarkan hasil belajar mata pelajaran Sejarah Kebudayaan Islam (SKI). Konsep pembelajaran modern menuntut siswa untuk kreatif, tanggap dan aktif dalam mencari, memilih dan menemukan, menganalisis, menyimpulkan dan melaporkan hasil belajar. Dalam penelitian ini peneliti bertujuan untuk mengetahui apakah ada pengaruh antara variabel bebas X terhadap

variabel Y. Terdapat pengaruh yang signifikan antara pembelajaran berbasis masalah terhadap kemampuan berpikir analitis siswa kelas VIII MTs Sarji Ar-Rasyid. Hasil analisis diperoleh t hitung 0,501 dengan nilai signifikan 0,013 yang lebih kecil dari taraf signifikansi 0,05 sedangkan nilai R square = 25,1%. Besarnya pengaruh pembelajaran berbasis masalah terhadap berpikir analitis siswa kelas VIII di MTs Sarji Ar-Rasyid adalah 25,1%, hal ini menunjukkan bahwa 74,9% berpikir analitis siswa dipengaruhi oleh faktor lain (faktor internal atau faktor eksternal) yang memerlukan penelitian lanjutan.

**Kata Kunci:** Pengaruh, Model, Kemampuan, Hasil Belajar.

### A. Introduction

The modern approach to learning requires students to be creative, responsive and active in seeking, selecting and finding, analysing, inferring and reporting learning outcomes (Akrim & Setiawan, 2022). Such learning models can only be properly implemented if teachers are able to develop effective learning strategies. For this reason, teachers need to be creative in choosing effective learning methods (Nurmadiyah, 2014). Therefore, it is necessary to study the importance of using a variety of methods in learning because the method is very helpful in achieving the learning objectives. As an educator or teacher, it is necessary to design a variety of methods for conveying learning material, with the right variety of methods, students do not feel bored with the learning material to be

conveyed, so that learning objectives will be properly achieved. by educators or teachers as an ongoing effort to carry out the teaching and learning process, and to implement character formation in other learning practices, teachers are required to use strategies in conveying their scientific fields (Tanjung, 2021).

Learning theory relates to assumptions about knowledge, students, and teaching and learning processes (Efendi, 2017). The behaviourist stream assumes that learning is a change in behaviour that can be brought about by manipulating the environment that affects students (Mavianti & Setiawan, 2021). This stream emphasises the 'outcome' of the learning process, where a person is considered to have learned if they are able to demonstrate a change in behavior (Sani, 2013). Therefore, the initial focus

of this study was to identify the learning outcomes that support the teacher's success in making students good at analysing a situation.

The word "history" comes from the Arabic word "Syajarotun", which means "tree". If we look at it systematically, history is almost the same as a tree, which has branches and twigs, starts from a seed, then grows and develops, then withers and falls. The word history in Indonesian means "genealogy", "origin (heredity)" and "events and occurrences that actually happened in the past". Derived from this, the science of history can be interpreted as "knowledge or description of events and incidents that actually happened in the past" (Mudani, Abdullah, Azis, Research & Education, 2019). Therefore, in this case, the study of the influence of learning Islamic cultural history (SKI) in terms of learning outcomes is considered very important to be research material.

Culture has at least three forms: (1) an ideal form, namely a form of culture as a complexity of ideas, beliefs, values, norms, rules, etc., (2) a form of behaviour, namely a form of culture as a complex patterned behavioural activity of human beings in society, and (3) the form

of objects, namely the form of culture as objects of work (Muhaimin, 2009). Thus, the subject of Islamic cultural history is a teaching material used in PAI learning that discusses the stories of human past both in terms of the results of thoughts, the totality of thoughts and works of people who live and are under the auspices of Islam, which is based on people's understanding of Islam (Riffiyanti, 2019).

As the results of previous research, the application of appropriate learning methods is something that really needs to be considered in order to improve and be able to know the students' understanding of what is conveyed by the teacher. Problem based learning model or problem based learning is a learning model that focuses on students or student centres (Seituni, 2019).

## **B. Research Methodology**

The learning process of Problem Based Learning requires a system of mutual cooperation in groups. Group members need to work together to solve a problem. In order to create an active working group, educators need to guide each member of the group to complete their own tasks in order to achieve their goals (Nurvitasari, 2022). Therefore, this

study used the appropriate method, the quantitative method, to determine the effect of the PBL method through the value obtained as an objective measure of the success of a method.

This type of research used a quantitative non-experimental ex post facto approach. According to (Isnaini BA in Atminangsih's 2019 research) (Sugiyono, 2015), ex post facto research is research conducted to investigate events that have occurred and were not treated by researchers as evidenced by data. Meanwhile, according to Sugiyono, (2017) "Expose facto research more formally as that in which the independent variables have already happened and in which the researcher starts with the observation of variable" (research expose facto is research in which the independent variables) when the researcher began to observe the dependent variable in a study (Arikunto, 2014). In this research, the author investigated the problem by looking at the independent variable X, which was Problem Based Learning, and the dependent variable Y, which was the ability to think analytically. In this study, the researcher wanted to know if there was an influence between the independent variable X on the variable Y.

The researcher determined the research site using the purposive sampling area method. The purposive sampling method is a deliberate choice of research sites with certain considerations. The population in this study were all class VIII students of MTs. Sarji Ar-Rashid consisting of 24 students.

This research requires a data collection technique in the form of a questionnaire to obtain data on the problem based learning model and the ability to think analytically. The guidelines for preparing the questionnaire in this study used a Likert scale with a range of statement scores. The Likert scale is used to measure the attitudes, perceptions and opinions of a person or group about a natural phenomenon specifically identified by researchers, hereafter referred to as variables. The variables to be measured by the Likert scale are translated into variable indicators. These indicators are then used as benchmarks for compiling instruments, which may take the form of questions or statement (Setiawan & Abrianto, 2019).

There are several indicators that a person has good analytical thinking skills, including 1) giving reasons why an

answer or approach to a problem makes sense; 2) making and evaluating general conclusions based on investigation or research; 3) predicting or describing conclusions or decisions from appropriate information; 4) considering the validity of the argument using deductive and inductive reasoning; 5) using supporting data to explain why the method used in the answer is correct (Ruseffendi, 1991) in (Yuwono et al., 2020). This research was to produce good changes from various indicators.

In variable X the researcher gave 6 items from a questionnaire statement regarding the use of problem based learning models and the ability to think analytically to determine the weight of the students' fluency scale scores in the results of this study, respondents who answered SS (Strongly Agree) had a score of 5 (five), respondents who answered S (Agree) had a value of 4 (four), respondents who answered N (Neutral) had a value of 3 (three), respondents who answered TS (Disagree) had a value of 2 (two), and respondents who answered STS (Strongly Disagree) had a value of 1 (one), as shown in the table below.

**Table B.1. The weight of the PBL model questionnaire scale and analytical thinking:**

Answer	Score
SS (Strongly Agree)	5
S (Agree)	4
N (Neutral)	3
TS (Disagree)	2
STS (Strongly Disagree)	1

The next technique is unstructured observation, as the researcher uses the observation method to collect data on the state of the school, an overview of the research site, and respondent data. Documentation according to Sugiyono (2015) is a method used to obtain data and information in the form of books, archives, documents, written numbers and pictures in the form of reports and information that can support research. Documentation is used to collect data and then to examine it. Data can be obtained from the school principal or the school administration. The document in this study is a collection of letters or written statements that serve as evidence and have a history. Such as report cards, learning outcomes, master books and school data.

The data analysis technique used is descriptive statistical analysis, which is the most basic analysis used to describe the general state of the data for each

variable. Descriptive analysis is a form of research data analysis used to test the generalisability of research findings based on a sample. This descriptive analysis was carried out through descriptive hypothesis testing. The result of the analysis is whether or not the research hypothesis can be generalised. If the null hypothesis (H0) is accepted, it means that the research findings can be generalized (Coleman & Fuoss, 1955). This descriptive analysis uses one or more variables but is independent, therefore this analysis is not in the form of a comparison or relationship. This is followed by data processing with editing, scoring and tabulation.

The data analysis method used by this researcher is quantitative data. The technique for testing the validity and reliability tests of this study uses the help of IBM SPSS version 24 software. The correlation significance test aims to determine the degree of closeness of the relationship between variables expressed by the correlation coefficient (r). The correlation test is used to determine whether the x variable has an effect on the y variable and whether the relationship is strong, moderate or weak.

**Table B.2. Guidelines for Interpreting the Correlation Coefficient**

	Relationship Level
0.00 – 0.199	Very weak
0.20 – 0.399	Weak
0.40 – 0.599	Currently
0.60 – 0.799	Strong
0.80 – 1.000	Very strong

In this study, correlation tests were performed using IBM SPSS Version 24 software to determine whether there is a significant influence between the independent variable and the dependent variable. If the significance value is less than the 0.05 significance level, then there is a significant influence between the independent variable and the dependent variable.

Testing all questionnaire items in one variable can be done by looking for differentiating scores for each item from groups that give high and low answers (Sugiyono, 2016). According to Sugiyono in his book *Statistics for Research* (2019), states that simple linear regression is based on the relationship between one independent variable and one dependent variable. Simple linear regression is functionally related to correlation as a tool for analysis.

$$\hat{Y} = a + bX$$

(Sugiyono, 2019)

Information:

$\hat{Y}$  = Predicted value

$a$  = price Y when price X = 0 (constant price)

$b$  = Regression coefficient

X = Independent variable value

Based on the above formula,  $b$  is the regression coefficient, which indicates the magnitude of the influence of variable X on variable Y. If the coefficient  $b$  is positive, it means that the independent variable and the dependent variable have a positive or unidirectional influence. If the coefficient  $b$  is negative, it means that the independent variable and the dependent variable have a negative or different effect.

**C. Results and Discussion**

The validity test was used to determine the validity of the results of the problem-based learning questionnaire and students' analytical thinking. The validity test in this study used IBM SPSS Version 24 software. From the results of the validity test, it was found that all of the 6 items in the problem based learning and analytical thinking questionnaire were declared valid. Results can be known by comparing the values  $t_{hitung}$

with  $t_{tabel}$  based on a significant test of 0.05. If  $t_{hitung} >$  of  $t_{tabel}$  then the instrument is said to be valid and vice versa if  $t_{hitung} <$  of  $t_{tabel}$  then the instrument is said to be invalid. From the calculation of the validity test using IBM SPSS Software Version 24, the results are as shown in Table C.1.

**Table C.1. The validity test of the results of the questionnaire Problem-based learning**

No	r table	r count	Information
1	0.4044	0.5139	Valid
2	0.4044	0.6961	Valid
3	0.4044	0.5700	Valid
4	0.4044	0.7287	Valid
5	0.4044	0.6983	Valid
6	0.4044	0.6086	Valid

Source: Data that has been processed

**Table C.2. The Validity Test of Analytical Thinking Questionnaire Results**

No	r table	r count	Information
1	0.4044	0.6436	Valid
2	0.4044	0.6307	Valid
3	0.4044	0.6552	Valid
4	0.4044	0.6740	Valid
5	0.4044	0.5317	Valid
6	0.4044	0.7118	Valid

Source: Data that has been processed

**Questionnaire Reliability Test Analysis**

Reliability test is used to test whether the data is reliable or not. Reliability testing in this study was also

tested using the help of IBM SPSS Version 24 software with the acquisition of calculations as shown in Table D. 3 and Table D.4.

**Table D.3. Problem Based Learning Questionnaire Reliability Test Results**

Reliability Statistics	
Cronbach's Alpha	N of Items
.704	6

**Table D.4. Analytical Thinking Questionnaire Reliability Test Results**

Reliability Statistics	
Cronbach's Alpha	N of Items
.706	6

Based on the calculations in Tables 9 and 10, the reliability calculation values are 70.4% and 70.6%. These two values are already greater than the criteria put forward by Riki Wahyudi (2016) in his research which suggests that the reliability testing criteria are said to be reliable if the results of the alpha coefficient are greater than the 60% significance level.

From the results of the reliability test above, it can be seen that all item scores from the problem-based learning questionnaire and the ability to think analytically are reliable and can be used to measure student learning outcomes.

### Correlation Significance Test

Based on the results of the calculation of the correlation significance test, it shows that the t-count is 0.501 with a significance value of 0.013, the significance value is smaller than the significance level of 0.05, so it can be said that there is a significant influence between variable x and variable y. Judging from the results of the Pearson correlation, which is based on the table of guidelines for interpreting the correlation coefficient, it can be said that there is a moderate level of influence between the variables x and y (Sugiyono, 2016). The results of the correlation significance test using the help of IBM SPSS Version 24 software obtained results as Table D.5:

**Table D.5. SPSS Output Results of Correlation Significance Test**

		X	Y
X	Pearson Correlation	1	.501*
	Sig. (2-tailed)		.013
	N	24	24
Y	Pearson Correlation	.501*	1
	Sig. (2-tailed)	.013	
	N	24	24

Source: Data that has been processed

### Simple linear regression

Simple linear regression testing in this study is used to make decisions about the ups and downs of the dependent



variable whether it can be done through the independent variable or not. The simple linear regression test in this study using IBM SPSS version 24 software produced results as shown in Table D.6:

**Table D.6. Summary of Simple Regression Results**

Summary models				
Model	R	R Square	Adjusted R Square	std. Error of the Estimate
1	.501a	.251	.217	3.20274

Coefficientsa						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	std. Error	Betas		
1	(Constant)	12,087	3,286		3,678	.001
	X	.433	.159	.501	2,716	.013

Source: Data that has been processed

Based on the results of the analysis in Table 12, the value of the constant (a) is 12.087, while the coefficient of the regression line X (b) is 0.433, and it can be concluded that the variable x has a positive effect on the variable y. The regression equation can therefore be written as follows

$$Y = a + BX$$

$$Y = 12,087 + 0,433X$$

### Analysis/Discussion

This study aims to investigate the effect of problem-based learning (X) on students' analytical thinking (Y). Based on the research conducted in class VIII MTs Sarji Ar-Rasyid in the even semester of the school year 2020/2021, there are four stages in analysing the data on variable X and variable Y, which are validity test, reliability test, correlation significance test and simple linear regression test. The first stage is the validity test, in this stage if the r-count is greater than the r-table then the data is said to be valid and if the r-count is less than the r-table then the data is said to be invalid. The validity test in this study aims to measure the data based on the level of validity of the instrument being studied. From the results of the validity test, there are 6 statement questions from variable X and variable Y, all of which are known to be valid.

The second test of this research is the reliability test using the IMB SPSS version 24 software. This is done to find out whether the data can be trusted or not. Based on the reliability test conducted by the researcher, it was found that the Cronbach alpha values for variable X and

variable Y were 0.704 and 0.706, which are the criteria proposed by Riki Wahyudi (2016) in his research, which suggests that the reliability test criteria are said to be reliable if the alpha coefficient results are greater than the significance level of 60%. Based on these criteria, it can be said that the results obtained from the reliability test are reliable.

The third test of this research is the correlation significance test. Based on the results of the correlation significance test calculation performed by the researcher using IBM SPSS version 24 software, the results obtained for t-count were 0.501 with a significance value of 0.013. and variable y.

The fourth test of this research is a simple linear regression test. Based on the results of calculations with the help of IBM SPSS version 24 software, there is a constant value (a) of 12.087 while the value of the regression line coefficient X (b) is 0.433. Thus the regression equation can be written in the formula  $Y = 12,087 + 0,433X$ . Based on the results of correlation and regression tests, it shows that problem based learning (variable x) has a positive and significant influence on analytical thinking (variable y). Judging from the value of R-squared

in Table 12, it shows the magnitude of influence of problem-based learning on analytical thinking of class VIII MTs Sarji Ar-Rasyid by 25.1%. This shows that 74.9% of the students' analytical thinking is influenced by other factors (internal or external factors) which require further research.

#### **D. Conclusion**

Based on the findings and discussion in this study, the following conclusions can be drawn: There is a significant influence of problem-based learning on analytical thinking of class VIII students in MTs Sarji Ar-Rasyid. The results of the analysis obtained t count 0.501 with a significance value of 0.013 which is less than the significance level of 0.05 while the value of R square = 25.1%. The magnitude of the influence of problem-based learning on the analytical thinking of class VIII students at MTs Sarji Ar-Rasyid is 25.1%, this shows that 74.9% of students' analytical thinking is influenced by other factors (internal factors or external factors) that require advanced research.

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