

# The Effectiveness of Problem Based Learning Model with SMT Media Reviewed from Learning Results and Careful Attitude to Students' Materials of Multipling Class III

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## Abstract

*Mathematics as one of the subjects in school is considered to play an important role in education. Based on the Minister of National Education Regulation No. 20 of 2003 concerning the National Education System (National Education System) article 37 it is emphasized that, "Mathematics is one of the compulsory subjects for students at the basic education level". The purpose of this study is to describe the effectiveness of the application of the Problem Based Learning model with TAKALINTAR media, which is better than the Direct Instruction model with multiplication media in terms of student learning outcomes in grade III multiplication material. The results of the study stated that the PBL learning variable had a direct and significant effect on Learning Outcomes and Attitudes. This can be seen from the results of the partial test (T test) which shows that the tcount value is greater than the ttable value, namely  $(3.802 < 1.617)$  and the significance value is  $0.000 > 0.05$ . This means that the H1 hypothesis is accepted, namely that there is an influence of the free shipping promotion variable on the Learning Outcomes and Attitudes variable in grade 3 A and B students of SD N Nangsi.*

## Keywords

model problem based learning;  
Takalintar; student



## I. Introduction

Mathematics as one of the subjects in school is considered to play an important role in education. Based on the Minister of National Education Regulation No. 20 of 2003 concerning the National Education System (National Education System) article 37 it is emphasized that, "Mathematics is one of the compulsory subjects for students at the basic education level". Education is one of the efforts to improve the ability of human intelligence, thus he is able to improve the quality of his life (Saleh and Mujahiddin, 2020). According to Susanto (2013) explaining that the purpose of mathematics in elementary school is so that students can use reasoning on patterns and traits, solve problems which include the ability to understand problems, design mathematical models, complete models and interpret solutions obtained.

Subjects that support the development of children as a whole is mathematics. As stated in Permendikbud No. 58 of 2014 confirms that, "Mathematics subjects need to be given to all students starting from elementary school, to equip students with the ability to think logically, analytically, systematically, critically, innovatively and creatively, as well as the ability to work together". Mathematics needs to be given to all students from an early age starting from elementary school, so that children's ability to solve problems can develop.

Learning mathematics should start from the introduction of authentic (real) problems that can guide students gradually in connecting their knowledge with application to real-world situations, so that learning is more meaningful. According to Tarigan et al (2021)

explaining that the material in mathematics is an abstract concept. The nature of mathematical abstraction is not simple, causing mathematics to be not easy to learn and in the end many students are less interested in mathematics.

Based on the results of observations at SDN 01 Nansri explained that some students think mathematics is difficult because it requires high reasoning in the learning process so that students do not like mathematics, teachers teach in conveying material without using interesting and creative teaching aids (media) that are in accordance with material, especially basic multiplication material. The learning process carried out in the classroom does not use a learning model that can improve students' thinking skills and activeness so that the learning process is very monotonous causing students to feel bored in the learning process.

Class III teachers at SDN 01 Nangsri mostly teach using a direct model (Direct instruction) with the lecture method, explaining the material, especially basic multiplication with multiplication media, and conducting questions and answers with students who can or are only active. The learning process in the classroom is only dominated by the teacher and a few students. For students who are passive, do not have many roles in the learning process. Students who are not given the opportunity to compile their own knowledge make them less understanding of mathematical concepts and have difficulty calculating basic multiplication in class. Students in the ability to solve problems about basic multiplication operations are still low.

The students' meticulous attitude in calculating multiplication operations is also still low. When performing multiplication operations, most students will forget the stored numbers. With the problems that exist in the learning process, it will have an impact on the results of learning multiplication and students' conscientious attitudes that are less than optimal. This can be seen in the table below where there are still many students who have not reached the Minimum Completeness Criteria (KKM) on the basic multiplication arithmetic operation material and the students' meticulous attitude is not yet optimal.

To overcome ongoing problems, it is necessary to apply models and learning media that are effective, fun and can improve students' attitudes of accuracy when counting. Thus, there is a need for innovation in learning mathematics in the classroom by applying a learning model that raises non-routine problems in stimulating students' thinking and learning media that attracts students' attention so that they are happy in learning, can make it easier for students to perform multiplication operations, and increase accuracy. on students.

One of them is the application of the PBL (Problem Based Learning) learning model with the SMT (Smart Multiplication Table) media. According to Ngilimun (2016) explains that PBL (Problem Based Learning) is a learning model that involves students to solve a problem through the stages of the scientific method so that students can learn knowledge related to the problem and at the same time have the skills to solve problems. Through this PBL model, students are encouraged to have the ability to solve problems in the real world with an attitude of thoroughness.

In addition to trying to apply the learning model, the researchers also applied the SMT (Smart Multiplication Table) media. According to Utamai (2019), SMT media is a learning media that can help make it easier for students to perform multiplication arithmetic operations. This media is in the form of a cross-board made of cork. This media contains pictures of numbers which are then pasted in a square box with a cement. This media can make it easier for students to operate basic multiplication, with this media students are not bothered with stored numbers, and can increase students' self-accuracy when counting with these media. Based on the results of observations of third grade

students and teachers at SDN 01 Nangsri Kebakkramat in learning mathematics, several problems can be identified including Students' mathematics learning outcomes are still low.

## **II. Review of Literature**

### **Relevant Research**

Researchers try to dig up information on journals that are relevant to the problems being carried out by researchers as consideration for comparing the problems studied both in terms of methods and research objects.

Several studies that are relevant to the Problem Based Learning model, SMT media, learning outcomes, and conscientiousness are as follows:

#### **a. Husnidar & Hayati (2021)**

The title of the research is "Implementation of Problem Based Learning Models to Improve Primary Mathematics Learning Outcomes". The results of the study concluded that learning with the Problem Based Learning (PBL) model can improve students' mathematics learning outcomes. The lowest learning outcomes get a score of 5% while the highest score is 40% with an average of 22.9%.

The equation of this research lies in the independent variable in the form of the use of the learning model. The difference from the research compiled by Husnidar & biologi is in the dependent variable, previous studies improve learning outcomes, while this study is about measuring conscientiousness and the use of manipulative media, namely SMT media. SMT media emphasizes student activities in learning.

#### **b. Suhliyatini et al (2021)**

The title of the research is "Effectiveness of Using Smart Multiplication Tables (SMT) in Assisting Elementary School Students in Learning Mathematics during the Covid-19 Pandemic". The results of the study concluded that the application of SMT media could improve learning outcomes, the test scores given to students increased. This SMT media is in the form of a multiplication table that makes it easier for students to memorize multiplication with very easy techniques and methods, interesting coloring can attract students' attention.

The equation of this research lies in the independent variable, namely the use of learning media. While the difference from the research compiled by Suhliyatini et al, namely on the dependent variable, previous research improved learning outcomes while this study increased students' ability to solve everyday problems by thinking critically through creative and innovative learning models.

#### **c. Septian & Rizkindi (2017)**

The title of the research is "The Application of Problem Based Learning (PBL) Models on Increasing Students' Mathematical Creative Thinking Ability". The results of the study concluded that the achievement and improvement of students' mathematical creative thinking skills using the Problem Based Learning learning model was better than students learning using conventional learning.

The equation of this research lies in the independent variable, namely the use of the learning model. The difference from the research compiled by Septian & Rizkindi on the dependent variable, previous research increased mathematical creative thinking skills,

while this study increased learning outcomes of multiplication with interactive media and measurement of students' attitudes of accuracy.

#### **d. Djufri et al (2018)**

The title of the research is "The Influence of Subject Specific Science Pedagogy Based on Lab Work in Improving Research Attitudes and Curious Attitudes in Students." The results of the study concluded that the application of student learning using SSP IPA based on lab work was able to activate curiosity and thoroughness in students. The value of students' conscientiousness increased drastically, the lowest score from 69.3 increased to 82.1 for the final average.

The equation of this research lies in the dependent variable, namely increasing students' conscientiousness. The difference from the research compiled by Djufri et al lies in the independent variables, previous research increased careful attitude through Subject Specific Pedagogy Science Learning Lines Lab Work, while this study increased thoroughness through Problem Based Learning models that were able to encourage students to solve everyday problems by manipulative media.

#### **e. Erfan et al (2020)**

The title of the research is "Improving Cognitive Learning Outcomes of Multiplication Themes through Numbered Head Together (NHT) Cooperative Learning Model for Students". The results of the study concluded that the use of the NHT type of cooperative learning model can improve students' cognitive learning outcomes on the theme of multiplication operations. The pre-test score in the first cycle (0.22) was in the low category (not yet significant) and in the second cycle (0.48) was in the medium category (significant enough).

The equation of this study lies in the independent variable, namely the increase in cognitive learning outcomes of the multiplication theme. The difference from the research compiled by Erfan et al lies in the dependent variable, previous research increased multiplication learning outcomes with the NHT cooperative model, while this study used a Problem Based Learning model with manipulative media.

### **III. Research Method**

#### **3.1 Research Type and Design**

This type of research is quantitative research. According to Andrew (2017) quantitative research is research that tends to be planned and stated in detail and the pattern of this research is in the form of numbers. This research is a quantitative quasi-experimental design (Quasi-Experimental Design). According to Emzir (2016) quasi-experimental is a method that produces evidence related to causation. The sample selection in the Quasi Experimental Type Nonequivalent Control Group Design was not chosen randomly, but was chosen intentionally by the researcher.

Which class group will be the experimental group and which will be the control group. In this research model, the research group is not created by the researcher himself, but the researcher only continues the group that already exists in the school where the research is located. Members in each group were not randomized or randomized, but were left as usual at the school.

The design in this study, both the experimental group and the control group were both given a pre-test and then the results were searched. After that, the experimental group received treatment in the form of a PBL (Problem Based Learning) learning model with

SMT (Smart Multiplication Table) media and the control group received treatment in the form of a Direct Instruction learning model with multiplication media in layers. Then both of them get a post-test to find out the results of the treatment that has been done.

In summary, the stages carried out in experimental research according to Fataruba (2018) include:

a. Pre-experimental stage:

Before doing the treatment (experiment). Both classes (experimental group and control group) were given a pre-test or initial test. With the intention of knowing the condition of the two classes before being given treatment. If after the initial test, the differences between the two classes do not differ much, it will proceed to the next stage, namely giving treatment (experiments).

b. Treatment stage (experimental)

At this stage, the treatment (treatment) in the experimental class was in accordance with the previously planned treatment, while the control class was given treatment but slightly different from the experimental class. This control class was given treatment according to the learning model and media used in the school as usual.

c. Post-experimental stage

At this stage, the researcher held a test again, namely the final test (post-test). This final test is used to determine how much influence the treatment has on the experimental class. This final test was given to the experimental class and the control class. The results of the final test will be compared with the results obtained at the time of the initial test (pre-test).

### 3.2 Place and Time of Research

a. Research site

This research was conducted at SD Negeri 01 Nangsri which is located in Dukuh Nangsri Kidul Rt 09 Rw 01 Nangsri Village, Kebakkramat District. This school is in a strategic position, namely on the side of the highway. This research was conducted in class III which consists of two classes, namely class IIIA and IIIB.

b. Research Time

This research was conducted in the even semester of May in the 2021/2022 academic year. This research was conducted in three meetings in each group with the subject of multiplication of whole numbers.

### 3.3 Research Subject

The subjects of this study consisted of all third grade students of SD Negeri 01 Nangsri, which consisted of two classes, namely IIIA and IIIB. The experimental class and control class were selected or drawn at random. Where the researcher prepares pieces of paper. The paper was written on the control class and the experimental class. Then each class IIIA and IIIB chairperson was asked to take the piece of paper at random. For the class leader who gets a piece of experimental paper, the class is used as an experimental class. Then for those who get a piece of control paper then it is used as a control class. From the results of the lottery, class IIIB who received a lottery with the words "experimental" was selected, class IIIB was chosen as the experimental class and class IIIA as the control class. Where class IIIB is 22 students, and class IIIA is the same as 22 students.



## IV. Results and Discussion

### 4.1 Results

#### a. Test Instrument

##### 1. Validity test

Validity test is a testing tool for a questionnaire instrument that is formed in such a way as to measure the accuracy, accuracy and validity of a questionnaire instrument (Kusumah, 2016). The validity test in this study was carried out with 27 statements consisting of 9 statements for the PBL learning model variable, 9 statements for the SMT media variable, and 9 statements for the learning outcome variable and conscientious attitude.

To determine the validity of each statement item in this study, it can be seen based on the rcount and rtable columns. If the value of rcount > rtable, then the statement is declared valid. The value of rtable at  $\alpha = 0.05$  with degrees of freedom  $df = n-2 = 58$  in the two-way test is 0.254. From the results of data processing using the SPSS version 26 application, the results of the validity test of each variable in this study are as follows:

**Table 1.** Validity Test Results (X1, X2, and Y)

Variabel	No item	r count	r Tabel	Description
PBL Learnin Model (X1)	1.	0,506	0,254	Valid
	2.	0,596	0,254	Valid
	3.	0,470	0,254	Valid
	4.	0,640	0,254	Valid
	5.	0,693	0,254	Valid
	6.	0,632	0,254	Valid
	7.	0,421	0,254	Valid
	8.	0,654	0,254	Valid
	9.	0,544	0,254	Valid
SMT Media (X2)	10.	0,697	0,254	Valid
	11.	0,723	0,254	Valid
	12.	0,680	0,254	Valid
	13.	0,629	0,254	Valid
	14.	0,765	0,254	Valid
	15.	0,788	0,254	Valid
	16.	0,432	0,254	Valid
	17.	0,728	0,254	Valid
	18.	0,717	0,254	Valid
Learning Outcomes and Thorough Attitude (Y)	19.	0,693	0,254	Valid
	20.	0,822	0,254	Valid
	21.	0,773	0,254	Valid
	22.	0,760	0,254	Valid
	23.	0,754	0,254	Valid
	24.	0,747	0,254	Valid
	25.	0,798	0,254	Valid
	26.	0,805	0,254	Valid
	27.	0,685	0,254	Valid

Source: IBM SPSS Data Processing 26, 2022

From the results of data processing using SPSS version 26, the variables of PBL Learning Model (X1), SMT Media (X2), and learning outcomes and careful attitude (Y) were declared valid. It can be seen from table 4.4 above that the value of  $r_{count} > r_{table}$  of each statement of the free shipping promotion variable, flash sale and impulse buying is greater than 0.254 then it is valid.

## 2. Reliability Test

Reliability testing is used to determine whether the answers given by respondents are reliable or reliable by using reliability analysis through the Cronbach alpha method, where an instrument is said to be reliable if it has an alpha of more than 0.6 or more. The results of the reliability test in this study are as follows:

**Table 2.** Reliability Test Results (X1, X2, and Y)

Variabel	<i>Cronbach Alpha</i>	Accuracy	Description
PBL Learning Model (X1)	0,730	0,6	Reliabel
SMT Media (X2)	0,859	0,6	Reliabel
Learning Outcomes and Thorough Attitude	0,907	0,6	Reliabel

Source: IBM SPSS Data Processing 26, 2022

Based on table 2 the reliability test results above, each variable has a Cronbach Alpha value  $> 0.6$  with details of the Cronbach Alpha value for the PBL Learning variable (X1) of 0.730, the SMT Media variable (X2) of 0.859, and the variable Learning Outcomes and Attitudes Accurate (Y) of 0.907. This indicates that the research instrument is declared reliable and worthy of being used as a variable in the measurement of this study.

## b. Classical Assumption Test

### 1. Normality test

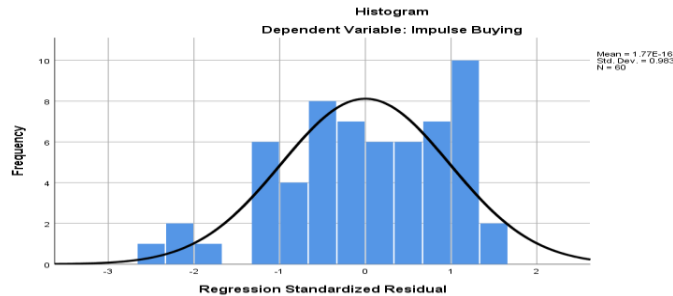
Based on the Kolmogorov-Smirnov test, the data is normally distributed if the significant value is  $> 0.05$  and if the significant value is  $< 0.05$ , the data is not normally distributed. If a variable is not normally distributed, then the results of the statistical test will decrease.

**Table 3.** Normality Test Results  
One-Sample Kolmogorov-Smirnov Test

		Unstandardized Residual
N		60
Normal Parameters <sup>a,b</sup>	Mean	,0000000
	Std. Deviation	4,21158915
	Absolute	,089
Most Extreme Differences	Positive	,083
	Negative	-,089
Test Statistic		,089
Asymp. Sig. (2-tailed)		,200 <sup>c,d</sup>

Source: SPSS Primary Data Processing 26, 2022

Based on the test results for the normality of the data table 3 the values obtained are Asymp results. Sig. (2-tailed) of 0.200 so that the value is higher than the significant value of 0.05 or  $0.200 > 0.05$  so that the data is declared normally distributed.



Source: SPSS Primary Data Processing 26, 2022

**Figure 1. Histogram Normalitas**

Based on the results of the graph in Figure 1, it can be concluded that the histogram graph gives a normal line distribution pattern. That is, the normality of the residuals in this study, which can be distributed normally.

## 2. Multicollinearity

This test was conducted to see whether the regression model found a correlation between the independent variables. A good regression model should not have multicollinearity. The way to detect it is by looking at the Variance Inflation Factor (VIF) value. According to Ghazali (2013) if the value obtained is Tolerance  $> 0.10$  and VIF value  $< 10$ , then there is no multicollinearity between the independent variables. Meanwhile, if the Tolerance value  $< 0.10$  and VIF  $> 10$ , then the variable has a multicollinearity problem with other independent variables.

**Table 4. Multicollinearity Test Results**

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
1 (Constant)	.492	4.357		.113	.911		
PBL learning model	-.246	.170	-.160	-1.447	.153	.537	1.861
TAKALINTAR Media	1.142	.141	.892	8.075	.000	.537	1.861

a. Dependent Variable: Impulse Buying

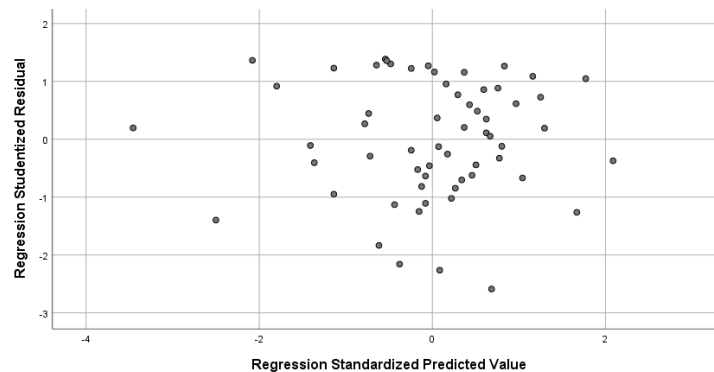
Source: SPSS Primary Data Processing 26, 2022

Based on the results of the calculations in table 4 above, it shows that the tolerance value of the PBL learning model and SMT media variables is 0.537, then the VIF value for both variables is 1.861. This shows that the two independent variables in this study have a tolerance value  $> 0.10$  and a VIF value  $< 10$ . So it can be concluded that in this study there is no multicollinearity between the independent variables.



### 3. Heteroscedasticity

A good regression model is that there is no symptom of heteroscedasticity. The occurrence of heteroscedasticity symptoms in a regression model will result in a doubt in the results of the regression analysis carried out. The occurrence of heteroscedasticity symptoms can be seen through a scatterplot graph. The spread of data points must not form a certain pattern and only spread in certain areas. Based on the results of data processing using the help of IBM SPSS version 26, the results of the heteroscedasticity test were obtained as follows:



Source: IBM SPSS Data Processing 26, 2022

**Figure 2.** Heteroscedasticity Test Results

Based on Figure 2 above, it can be seen that the points spread randomly and spread well above and below the number 0 on the Y axis and do not form a pattern. So it can be concluded that the data used for regression analysis in this study does not occur heteroscedasticity, so the regression model can be used.

### c. Hypotesis Test

#### 1. t test (Individual test)

##### a) Regression Model I

**Tabel 5.** Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	7.812	6.187		1.263	.212
	PBL learning model	.687	.181	.447	3.802	.000

a. Dependent Variable: Learning Outcomes and Careful Attitude

Source: SPSS Primary Data Processing 26, 2022

The results obtained from table 5 can be seen that the calculation of the promotion t test of the PBL learning model (X1) on Learning Outcomes and Attitudes (Y) directly has a tcount value of 3.802 and a significant value of 0.000. Based on the calculation results, it is known that at a significant level of 10%, that the value of tcount is greater than ttable ( $3.802 > 1.671$ ) and the significance value is  $0.000 < 0.05$ . Then H1 is accepted, which means that the PBL learning model (X1) partially has a positive and significant influence on learning outcomes and careful attitude (Y).

b) Regression Model II

**Tabel 6. Coefficients**

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	6.412	3.959		1.620	.111
	PBL learning model	.817	.116	.680	7.066	.000

a. Dependent Variable: TAKALINTAR Media

Source: SPSS Primary Data Processing 26, 2022

The results obtained from table 6 can be seen that the results of the t-test calculation of the PBL learning model (X1) on the SMT Media (X2) directly have a tcount value of 7.066 and a significant value of 0.000. Based on the calculation results, it is known that at a significant level of 10%, that the value of tcount is greater than ttable ( $7.066 > 1.671$ ) and the significance value is  $0.000 < 0.05$ . Then H2 is accepted, which means that the promotion of the PBL learning model (X1) partially has a positive and significant effect on SMT Media (X2).

c) Regression Model III

**Tabel 7. Coefficients**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-3.100	3.616		-.857	.395
	TAKALINTAR Media	1.002	.105	.783	9.583	.000

a. Dependent Variable: Learning Outcomes and Careful Attitude

Source: SPSS Primary Data Processing 26, 2022

The results obtained from table 7 can be seen that the results of the SMT Media t-test calculation (X2) on Learning Outcomes and Attitudes (Y) directly have a tcount value of 9.583 and a significant value of 0.000. Based on the calculation results, it is known that at a significant level of 10%, that the value of tcount is greater than ttable ( $9.583 > 1.671$ ) and the significance value is  $0.000 < 0.05$ . Then H3 is accepted, which means that the promotion of SMT Media (X2) partially has a positive and significant influence on Learning Outcomes and Attitudes (Y).

2. F test (Test Simultaneously)

According to Bawono (2006), the F test was conducted with the aim of knowing how far the independent or independent variables together can affect the dependent or dependent variable.

**Table 8.** Test Results

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	1756.422	2	878.211	47.833	.000 <sup>b</sup>
	Residual	1046.512	57	18.360		
	Total	2802.933	59			

Source: SPSS Primary Data Processing 26, 2022

In the table above, it can be seen that Fcount is  $47.833 > 4.01$ , or sig.  $0.001 < 0.05$ , this shows that the linear regression model can be used to predict the effect of the PBL learning model and SMT media on learning outcomes and careful attitude because the regression used is acceptable. Which means, the variables of the PBL learning model and the SMT media affect the learning outcomes and conscientious attitude together.

### 3. Coefficient of Determination Test (R<sup>2</sup>)

The coefficient of determination test is carried out to test the extent of the relationship between variables, namely the dependent and independent variables. The results of the coefficient of determination in this study are as follows:

**Tabel 8.** Coefficient of Determination R<sup>2</sup>

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.792 <sup>a</sup>	.627	.614	4.28484

a. Predictors: (Constant), PBL learning model, TAKALINTAR Media

Sumber: Pengolahan Data Primer SPSS 26, 2022

Based on the table above, it can be seen that the R Square value is 0.792. In other words, all the variables of the PBL learning model (X<sub>1</sub>) and SMT Media (X<sub>2</sub>) are able to explain the variable Learning Outcomes and Attitudes (Y) of 79.2% while the remaining 20.8% can be explained by other variables not examined in this study.

## 4.2 Discussion

### a. The Effect of PBL Learning on Learning Outcomes and Attitudes

Based on the data that has been tested previously, it can be seen that all statements contained in the independent variables, namely the PBL learning model and SMT media as well as the dependent variable, namely Learning Outcomes and Attitudes are valid and reliable so that they can be used in this study according to table 4.9 and 4.10.

The results of this study stated that the PBL learning variable had a direct and significant effect on Learning Outcomes and Attitudes. This can be seen from the results of the partial test (T test) which shows that the tcount value is greater than the ttable value, namely  $(3.802 < 1.617)$  and the significance value is  $0.000 > 0.05$ . This means that the H<sub>1</sub> hypothesis is accepted, namely that there is an influence of the free shipping promotion variable on the Learning Outcomes and Attitudes variable in grade 3 A and B students of SD N Nangsi.

### **b. The Effect of PBL Ongkir Learning Model on SMT Media**

Based on the data that has been tested previously, it can be seen that all statements contained in the independent variables, namely the PBL learning model and SMT media as well as the dependent variable, namely Learning Outcomes and Attitudes are valid and reliable so that they can be used in this study according to table 4.9 and 4.10.

The second hypothesis states that the PBL learning model has a positive and significant effect on SMT Media. Based on the results of this study, it showed a positive and significant effect as evidenced by the results of the regression test, namely the parameter coefficient value of 7.066 and having a significant value of  $0.000 < 0.05$ . It can also be seen from the results of the partial test (T test) which shows that the tcount value is greater than ttable value is equal to  $(7.066 < 1.617)$ . This means that the H2 hypothesis is accepted, that is, there is a positive and significant effect of the PBL learning model on SMT Media SMT media in grade 3 A and B students of SD N Nangsi.

### **c. The Effect of SMT Media on Learning Outcomes and Attitudes**

Based on the data that has been tested previously, it can be seen that all statements contained in the independent variables, namely the PBL learning model and SMT media as well as the dependent variable, namely Learning Outcomes and Attitudes are valid and reliable so that they can be used in this study according to table 4.9 and 4.10.

It can also be seen from the results of the tests conducted in this study which explained that the SMT Media variable had a significant effect on learning outcomes and conscientiousness. The results of the t-test carried out showed that the tcount value was greater than the ttable value, namely  $47.833 > 3.16$  with a significance level of  $0.001 < 0.05$  which explained that the SMT Media variable had a partial effect on Learning Outcomes and Attitudes. These results indicate that H3 can be accepted, namely "There is an influence of SMT Media on Learning Outcomes and Attitudes in Grade 3 A and B students of SD N Nangsi.

## **V. Conclusion**

The research aims to determine the effect of the PBL learning model and SMT media on learning outcomes and conscientiousness in grade 3 A and B students of SD N Nangsi, from the research that has been carried out it can be concluded that:

- a. The results of the study stated that the PBL learning variable had a direct and significant effect on Learning Outcomes and Attitudes. This can be seen from the results of the partial test (T test) which shows that the tcount value is greater than the ttable value, namely  $(3.802 < 1.617)$  and the significance value is  $0.000 > 0.05$ . This means that the H1 hypothesis is accepted, namely that there is an influence of the free shipping promotion variable on the Learning Outcomes and Attitudes variable in grade 3 A and B students of SD N Nangsi.
- b. The results of the study showed a positive and significant effect as evidenced by the results of the regression test, namely the parameter coefficient value of 7.066 and having a significant value of  $0.000 < 0.05$ . It can also be seen from the results of the partial test (T test) which shows that the value of tcount is greater than the value of t table that is equal to  $(7.066 < 1.617)$ . This means that the H2 hypothesis is accepted, that is, there is a positive and significant effect of the PBL learning model on SMT Media SMT media in grade 3 A and B students of SD N Nangsi.
- c. The results of the tests carried out in this study which explained that the SMT Media variable had a significant effect on Learning Outcomes and Attitudes. The results of the

t-test carried out showed that the tcount value was greater than the ttable value, namely  $47.833 > 3.16$  with a significance level of  $0.001 < 0.05$  which explained that the SMT Media variable had a partial effect on Learning Outcomes and Attitudes. These results indicate that H3 can be accepted, namely "There is an influence of SMT Media on Learning Outcomes and Attitudes in Grade 3 A and B students of SD N Nangsi.

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