

Analysis of the Effect of Mind Mapping Learning Model on Student Learning Results In Civic Education (PKn) Learning in SMP N 10 Palembang

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Abstract: *The learning model is an external factor in influencing learning results, the purpose of this study explains the effect of applying Mind Mapping learning models to student learning results in Civic Education at SMP N 10 Palembang. The method in this study is a quasi-experimental method. The population in this study were all students of class VII SMP N 10 Palembang. The sampling technique in this study was purposive sampling, so the sample was class VII 1 as an experimental class and class VII 2 as a control class of 64 students. Data analysis techniques in this study used multiple linear regression. The results showed that there was a significant influence between the application of the Mind Mapping learning model to the learning results of Civic Education in VII grade students of SMP N 10 Palembang, obtained $t\text{-count} > t\text{-table} = 1.473 > 0.246$, so H_a was accepted and H_0 was rejected.*

Key Words: *Mind Mapping Learning Models, Student Learning Results, Civic Education*

Date of Submission: 11-03-2020

Date of Acceptance: 25-03-2020

I. Introduction

Indonesia's national education aims to form smart, participatory and characterless citizens. To realize the citizens who have character, then in the national education curriculum system Civic Education subjects are applied in the learning process as subjects that aim to shape the nation's character. Developing and realizing character citizens through Civic Education learning requires a specific learning strategy or approach that is in accordance with the Civic Education paradigm.

The learning process can be successful if there is continuity between teachers and students who are actively participating in learning. Continuity of the learning process will have an impact on changing students from not knowing to knowing and from not understanding to understanding. Based on preliminary observations conducted by researchers, it is known that in the Civic Education learning process for grade VII students of SMPN 10 Palembang in the 2018/2019 academic year, there are still many students who are not focused on when the teacher explains the student material looks sleepy and tells stories with their peers, if the teacher asks most students can't answer questions from the teacher, and if there is material that is less clear passive students do not want to ask the teacher, causing student learning results are less than optimal. This is indicated by the student learning results that are still low, it seems there are still many students whose learning results have not yet reached the Minimum Mastery Criteria (KKM). Benyamin S Bloom (Sudjana, 2010), in his learning theory states that there are two main factors that are dominant to learning results, namely the students' internal characteristics which include (abilities, interests, previous learning results, and motivation) as well as the external characteristics of teaching quality that includes (teachers, learning models and learning facilities). So that one way of active and fun learning must be applied by the teacher to make students active and not bored following learning in class.

The learning model is an external factor in influencing learning results. The appropriate learning model is the Mind Mapping learning model. According to (Buzan, 2007), Mind Mapping is the easiest way to put information into the brain and take information out of the brain. Mind Mapping is a creative, effective, and literally literate way to map thoughts. This study will discuss the effect of applying the Mind Mapping learning model to student learning results in Civic Education VII subjects of SMP Negeri 10 Palembang.

II. Literature Review

2.1. Mind Mapping Learning Model

According to Buzan (2007: 179-181) argues that mind mapping is a revolutionary system in planning and making notes. mind mapping is a learning model that is based on the natural workings of the brain and is able to foster creativity in the brain because it involves both hemispheres of our brain. mind mapping is a learning model that involves the right brain and left brain. While Porter & Hernacki (2008: 152-159) suggest: "Mind mapping can be called a mind map.

2.2. Learning Result

Learning results are a form of behavior change after experiencing the learning process. Sinar (2018: 20) suggests that learning results are the result of mastery of knowledge expressed in the form of behavioral changes that must be achieved by students while studying at school. Learning results can take the form of behavioral or affective change, cognitive development and development of skills or psychomotor.

2.3. Civic Education

Epistemologically, citizenship education needs to be understood historically-epistemologically from the development of civic / citizenship education in various parts of the world in the context of the development of democracy as theorized by Huntington (1994) and the idea of citizenship education as democratic education in the paradigm of education about, in, and for democracy. According to Winataputra (2016: 17-18) civic education or nomenclature used in the language of each country like us in Indonesia uses the nomenclature of Civic Education (Civic Education) or Pancasila and Civic Education (PPKn).

III. Research Methodology

This type of research in this study is a quasi experiment. The design in this study is a quasi experimental design (quasi-experimental) which is the development of True Experimental Design because it has a control group but does not fully function to control external variables that influence the implementation of research (Sugiyono, 2016: 38).

The population in this study were all VII grade students of SMP Negeri 10 Palembang in the odd semester of the 2018/2019 school year, amounting to 11 classes, namely class VII 1 to class VII 11. The sample selection in this study was carried out using purposive sampling technique. Purposive sampling technique is intentional sampling technique with certain considerations (Sugiyono, 2011). The sample in this study was grade VII students of SMP Negeri 10 Palembang, as many as two classes, namely class VII 1 as an experimental group and class VII 2 as a control group.

Data collection techniques for student Civic Education Education learning results through learning results tests with regional material of the Republic of Indonesia. The analysis technique in this study uses the normality test, homogeneity test and hypothesis testing using multiple linear regression.

IV. Result And Discussions

4.1. Description Of Research Data

4.1.1. Validity Instrument Test

Based on the recapitulation of r product moment calculations with the terms $n = 64$, $df = 62$, $\alpha = 0.05$, then $r = 0.246$ with criteria if r counts questions > 0.246 then the questions are declared valid and vice versa if r counts $<$ than 0.246 then it is invalid and if the value of $\text{sig} < 0.05$ then the problem is also declared valid and vice versa if the value of $\text{sig} > 0.05$ then the problem is declared invalid. Following the results of the validity test results of student learning results using the product moment r obtained that the test instrument items on the PKn student learning results test in this study were declared valid 20, because these 20 items had a total rhythm value greater than r_{table} . Thus, from the explanation of table 4.5 it can be concluded that the test instrument on the PKn student learning achievement test in this study was declared valid or valid, so that it could be properly used for the post-test.

4.1.2. Reliability Test

In this study, the instrument reliability test was carried out using the test-retest technique by testing the same instrument several times on the same respondent but at different times. Reliability is measured by the correlation coefficient between the first experiment and the next. If the correlation coefficient is positive and significant then the instrument has been declared reliable (Sugiyono, 2011). After being tested for validity, valid items are included in the reliability test. So, there will be 20 items counted. The results of the instrument reliability analysis based on Cronbach's Alpha criteria are presented in table 1. below:

Table 1. Reliability Tests used on Student Learning Results Tests Civic Education

Cronbach's Alpha	N of Items
.980	20

Source: SPSS Data Processing, 2019.

From the results of the analysis of the instruments in Table 1. it can be explained that Cronbach's alpha was obtained at 0.980. From the results of the analysis, the alpha value is greater than $r_{table} = 0.246$. This shows that each instrument has a reliability value that meets the requirements and is declared reliable.

4.1.3. Exchange Rate Problems

A good question is a problem that is not too easy and not too difficult. By calculating the difficulty level of the problem, it can be seen that the problem is easy or difficult which is indicated by the difficulty index. Based on the results of the calculation of the level of difficulty test questions used on the PKn student learning achievement test explains that the average test questions, the level of difficulty is moderate. Where the test questions were declared good enough to proceed to the post test.

4.1.4. Description Of Data Learning Result Of Experimental Class Students

Before being given treatment, students are first given a pre-test to determine the initial ability of students as many as 20 questions. Assessment is carried out using a scale of 100. After knowing the initial abilities of students, then the experimental class students are taught using the Mind Mapping learning model. At the last meeting, students were given a post-test to find out about 20 student learning results with an assessment using a scale of 100. The pre-test and post-test results in the experimental class are presented in the following table:

Table 2. Summary of Grades of Experimental Class Students

Statistic	Value	
	<i>Pre-test</i>	<i>Post-test</i>
Total Students	34	34
Number of Questions	20	20
Amount of Values	1624	2503
Average	48	74
Maximum Values	60	82
Minimum Values	40	70

Table 2 shows that the experimental class students before being given treatment, obtained an average pre-test score of 48 and after being taught with a mind mapping learning model, an average of 74 was obtained.

4.1.5. Description of Data Learning Result of Control Class Students

For the control class, before being given treatment, students are first given a pre-test to determine the initial ability of students as many as 20 questions. Assessment is done using a scale of 100. After knowing the initial abilities of students, then the control class students are taught using conventional learning. At the last meeting, students were given a post-test to find out about 20 student learning results with an assessment using a scale of 100. Pre-test and post-test results in the control class are presented in the following table:

Table 3. Summary of Class Control Student Grades

Statistic	Value	
	<i>Pre-test</i>	<i>Post-test</i>
Total Students	34	34
Number of Questions	20	20
Amount of Values	1310	2351
Average	41	73
Maximum Values	50	76
Minimum Values	35	70

Table 3 above shows that the control class students were given treatment before, obtained an average pre-test score of 41 and after being taught with conventional learning, obtained an average of 73.

4.2. Test Analysis Requirements

Before testing the hypothesis using the t test against the student learning results test, then the prerequisite test is performed first which includes:

4.2.1. Normality Test

This normality test takes the value of the Pkn learning results of the experimental class students with the control class. Samples are said to be normally distributed if L count < L table. Following are the results of normality analysis in each class.

A. Results of Civic Education (Pkn) Students Learned by the Mind Mapping Model (Experimental Class)

In the experimental class the students were given a mind mapping learning method. Checking normality of data Using the Kolmogorov-Smirnov test statistics:

H₀: Data follows the normal distribution

H_a: Data does not follow normal distribution

The significance level (α) is 5%.

Table 4. Test Normality of Experimental Classes

One-Sample Kolmogorov-Smirnov Test			
		Pretest	Posttest
N		32	32
Normal Parameters ^{a,b}	Mean	76,5625	82,7344
	Std. Deviation	12,27622	6,36141
Most Extreme Differences	Absolute	,231	,179
	Positive	,140	,127
	Negative	-,231	-,179
Kolmogorov-Smirnov Z		1,305	1,015
Asymp. Sig. (2-tailed)		,067	,255
a. Test distribution is Normal.			
b. Calculated from data.			

Source: SPSS Data Processing, 2019.

Based on the results of the normality test calculations in table 4 for the pre-test value data in the experimental class that is the class taught with Mind Mapping learning model on the results of student learning Civic Education obtained residual values of $0.67 > 0.05$. Normality test calculation results in table 4.10 for the post-test value data in the experimental class that is the class taught by Mind Mapping learning model on student Civic Education learning results obtained residual values of $0.225 > 0.05$. Thus it can be concluded that the sample on the Civic Education learning results of students taught with the Mind Mapping learning model has a normal distribution.

B. Results of Civic Education (Pkn) Students Learned by Conventional Learning (Control Class)

In the control class students are given conventional model learning methods. Checking the normality of the data uses the Kolmogorov-Smirnov test statistics.

H₀: Data follows the normal distribution

H₁: Data do not follow normal distribution with a significance level (α) of 5%

Table 5. Normality Control Class Test

One-Sample Kolmogorov-Smirnov Test			
		Pretest	Posttest
N		32	32
Normal Parameters ^{a,b}	Mean	64,6875	70,3906
	Std. Deviation	11,90944	6,63293
Most Extreme Differences	Absolute	,159	,137
	Positive	,153	,137
	Negative	-,159	-,081
Kolmogorov-Smirnov Z		,902	,776
Asymp. Sig. (2-tailed)		,390	,583
a. Test distribution is Normal.			
b. Calculated from data.			

Source: SPSS Data Processing, 2019.

Based on the results of the normality test calculations in table 5 for the pre-test value data in the control class that is the class taught with conventional learning on student Civic Education learning results obtained

residual values of $0.390 > 0.05$. The results of normality test calculations in table 4.11 for the post-test value data in the control class that is the class taught with conventional learning on student Civic Education learning results obtained residual values of $0.583 > 0.05$. Thus it can be concluded that the sample on PKn learning results of students taught with conventional learning has a normal distribution.

4.2.2. Homogeneity Test

Homogeneity test is used to find out whether the samples taken are from populations with the same variants. To find out the homogeneity of the variance of the two classes used as a sample, a homogeneous test was used by taking the scores of students' Civic Education Learning results. The data comes from homogeneous population variance if $F_{count} < F_{table}$. Homogeneity test conducted on student learning results Civic Education can be seen in table 6.

Table 6. Homogeneity Test Output

	Levene Statistic	df1	df2	Sig.
Pre-Test	1.548	1	62	.218
Pot-Test	.361	1	62	.550

Source: SPSS Data Processing, 2019.

Based on table 6, the data H_0 is received and H_a is rejected. Based on the class homogeneity test output table, it can be seen that the significance value is 0.550. Because the significance value is more than 0.05, $0.550 \geq 0.05$, the data is declared homogeneous. So the two classes used as research are homogeneous classes.

4.3. Data Analysis Results and Hypothesis Test

4.3.1. Data Analysis Results

The data to be analyzed are the PKn learning results data of the experimental class and control class students. Based on the previous analysis data, the data is declared normal and homogeneous so that the hypothesis test can be done. Before the hypothesis testing stage is calculated the mean (mean) and standard deviation (SD).

4.3.2. Hypothesis Test

Hypothesis testing in this study uses the t test (Polled Variant). The t test (Polled Variant) is used whether the application of learning carried out has an influence or not on the object under study, namely the results of student Civic Education learning. The hypothesis in this study is twofold:

H_0 : There was no significant effect between the application of Mind Mapping learning models to the learning results of Civic Education Education for Grade VII students of SMP N 10 Palembang.

H_a : There is a significant influence between the application of Mind Mapping learning models to the learning results of Civic Education Education in Grade VII students of SMP N 10 Palembang.

Hypothesis testing uses multiple linear regression which gets the following results:

Table 7. Model Summary
Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.260 ^a	.067	.036	4.036	1.944

a. Predictors: (Constant), Model Mind Mapping

b. Dependent Variable: Hasil Belajar Siswa

Source: SPSS Data Processing, 2019.

Table 8. Anova (F Test)
ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	35.357	1	35.357	2.171	.151 ^b
	Residual	488.643	30	16.288		
	Total	524.000	31			

a. Dependent Variable: Hasil Belajar Siswa

b. Predictors: (Constant), Model Mind Mapping

Source: SPSS Data Processing, 2019.

**Table 9. Coefficients (T Test)
Coefficients^a**

Model		Unstandardized Coefficients		Standardized	t	Sig.
		B	Std. Error	Coefficients		
1	(Constant)	41.282	10.861		3.801	.001
	Model Mind Mapping	.278	.189	.260	1.473	.151

a. Dependent Variable: Hasil Belajar Siswa

Source: SPSS Data Processing, 2019..

Table 9 can be seen the value of $t_{count} = 1.473$. The test criterion is reject H_0 if $t_{count} > t_{table}$. The table is taken from the t distribution table with the significant level used is $5\% = 0.05$ and $dk = n_1 + n_2 - 2 = 32 + 32 - 2 = 62$ using the excel formula = $TINV(0.05; dk)$. Then the obtained value of $t_{table} = 0.246$. Based on the hypothesis that was formulated previously, it can be seen that the value of $t_{count} > t_{table} = 1.473 > 0.246$. Thus H_a is accepted and H_0 is rejected. So it can be concluded that "There is a significant influence between the application of the Mind Mapping learning model to the learning results of Civic Education Education for Grade VII students of SMP N 10 Palembang".

4.4. Discussion

The research conducted at SMP N 10 Palembang involved two classes, namely the experimental class and the control class. Before being given permission, both classes were given a pre-test to determine the students' initial abilities. With an average value for the experimental class is 51 and for the control class is 41. Based on homogeneity testing conducted obtained the second class has the same or homogeneous variant. After understanding the initial abilities of the two classes, students then provide different learning in the regional material within the territory of the Republic of Indonesia. Students in the experimental class encouraged the Mind Mapping learning model and students in the control class supported with conventional learning. After being given different approvals in the experimental class and the control class, at the end of the meeting after the material is finished, students are given a post-test to find out student learning results. While the average post-test value in the experimental class was 78 while in the control class was 73. From the tests conducted through the post-test given, obtained two classes that have the same or homogeneous variants.

Based on the previous hypothesis testing, it was found that H_0 was rejected. At a significant level $\alpha = 0.05$ and $dk = n_1 + n_2 - 2 = 62$, based on the t distribution table can be used $t_{table} = 0.246$. Furthermore, by comparing the calculated price with the table price obtained $t_{count} > t_{table}$ that is $1.473 > 0.246$. This means that H_a is accepted or rejected H_0 , which means the average learning results taught with the Mind Mapping learning model are higher than the average learning results taught with conventional learning in SMP N 10 Palembang. Thus, the alternative hypothesis (H_a) which states the learning results of Civic Education students taught using the Mind Mapping learning model is higher than students who use conventional learning at a significant level of 0.05. Implications before applying the Mind Mapping learning model teaching and learning activities are still focused by the teacher. However, after applying the Mind Mapping learning model to the experimental class the learning process is more active, innovative, creative, effective and efficient than the control class using conventional methods. This is proven by several factors, which are agreed upon by students with more enthusiasm with the Mind Mapping learning model. Mind Mapping learning models foster a more serious enthusiasm for learning and attention, and reduce the sense of boredom in students. Based on the description above, it can be concluded that the Mind Mapping learning model can affect the learning results of Civic Education in VII grade students of SMP N 10 Palembang.

V. Conclusion

Based on the analysis of the results of research and hypothesis testing conducted, obtained the following results:

1. There is a significant influence between the application of the Mind Mapping learning model to the learning results of PKn students of grade VII in SMP N 10 Palembang, obtained $t_{count} > t_{table} = 1.473 > 0.246$, thus H_a is accepted and H_0 is rejected.
2. Learning using the Mind Mapping learning model has better learning results than conventional learning.

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Amalia Riski Kartini. "Analysis of the Effect of Mind Mapping Learning Model on Student Learning Results In Civic Education (PKN) Learning in SMP N 10 Palembang." *IOSR Journal of Research & Method in Education (IOSR-JRME)*, 10(2), 2020, pp. 17-23.