

The Effect of Mind Mapping Based Contextual Learning on Student Learning Outcomes

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Abstract: This study aims to find out how student learning outcomes in the classroom taught mind mapping based contextual learning and find out whether there is an effect of mind mapping based contextual learning on student learning outcomes in grade IV Public Elementary School (SDN) Mawar 2 Banjarmasin, Indonesia. This study was included in an experimental study with a pre-test-post-test design and the analytical test used was an independent sample T test. The results showed the class with mind mapping contextual learning got higher learning outcomes than conventional classes and it was proven that mind mapping based contextual learning had an effect on increasing student learning outcomes.

Keywords: contextual learning, mind mapping, learning outcomes

1. INTRODUCTION

The learning process can be interpreted as a series of activities that involve various components (Suriyansyah, 2014). In this process an educational situation will take place which aims to achieve the competency standards of graduates described above. The role of educators according to Witfelt (Hartana, 2016) as a facilitator makes it must be implemented when implementing the teaching and learning process. Degeng (2015) states that the task of educators is to provide information and provide students opportunities to develop. Sarnoko, Ruminati and Setyosari (2016) revealed that many concepts were offered to improve the quality of learning, one of which was to use an approach.

Developing when developing Now is waiting for contextual. According to Su'udiah (2016) in the implementation of learning in addition to thematic learning, contextual based learning also needs. Berns and Erickson (2001) revealed that asking for help that spurs educators' associates learning material with conditions that exist in students' real lives. Meanwhile, Komalasari (2014) defines contextual learning as learning that is able to link the teachings taught safely to matters relating to the daily lives of students, both in schools, families and the community. While according to Johnson (2002) contextual learning is defined as learning that directs students to interpret the material learned so that it can be applied in life.

Contextual learning aims to provide meaningfulness for students when receiving material in the learning process. As revealed by Nilasari (2016) that contextual learning aims to lead students to find meaningfulness of the

content of the material students are learning for their lives. One of the advantages of this learning is that it emphasizes high thinking power in its implementation. According to Mustofa (2016) the contextual approach not only asks students to understand the material being taught but gives meaning to each discussion so that students can implement the material being taught.

To add color to the implementation of the teaching and learning process researchers feel the need to add another way of learning that is contextual learning based on mind mapping. The choice of mind mapping itself is based on many successful studies including research from Purwoko (2014) which concludes his research that the use of mind mapping has an influence on learning outcomes. in line with Fauzi's research (2017 and 2018) which shows a significant increase in learning outcomes when the learning process uses mind mapping models. In addition, Viclara (2016) and Fauzi (2019) revealed that the mastery of the concepts of students who are taught using mind mapping is better than students who are taught by being taught without mind mapping. This makes it more convincing for researchers to add mind mapping in research. Mind mapping itself is a route map that allows one to arrange facts and thoughts in such a way that the natural way of thinking of the brain can run better (Buzan, 2011). Arfiyanti (2017) revealed that mind mapping is a picture of students' thoughts written in the form of diagrams, symbols, and pictures of their own words.

Mind mapping learning is very easy to apply in learning. Buzan (2011) suggests 7 stages to create a mind map, namely: (1) students can start placing the subject matter given by the teacher in the middle of the paper; (2) the teacher may use pictures / photos to determine the

subject matter; (3) students are advised to use colorful pens or pencils to write or connect the subjects to be developed; (4) students begin to connect the initial picture of the picture that develops the initial picture / Branch image, connects the main picture of the picture that develops the main image / branch image, and so on; (5) students are given the freedom to draw lines on the map (not necessarily straight lines); (6) students can also provide key words on each connecting line; and (7) students may also create their mind maps using pictures for each branch. When choosing initial ideas, creative ideas are needed to be developed. In order for the mind map to function optimally, students can create it with pictures, symbols and colors so that it looks like a work of art.

2. METHOD

The method used in this research is quantitative research with the pretest-posttest control group (quasi-experimental) design. This study involved 2 teachers and 60 fourth grade students at SDN Mawar 2 Banjarmasin, which were divided into 2 classes. Where the class used as an experimental class consisted of 29 students and the control class consisted of 31 students. In its implementation, this research underwent three stages, namely preparation, implementation and evaluation.

3. RESULTS

Results of this study showed the average of the results of the pretest and posttest were 13, 103 for the experimental class and 2.258 for the control class. Complete data can be seen in the Table 1. The normality test results showed a significant experimental class of 0.275 and a significant control class of 0.462. This shows that all samples in this study were normally distributed. The complete data is presented in the Table 2. Homogeneity test results using all homogeneous samples with a significance of 0.367. Data is presented in Table 3.

Table 1 Data Description

Class	Mean	Median	Std. Dev	Min	Max	N
Experiment	13,103	10,000	8,495	0	30	29
Control	2,258	0,000	8,449	-10	10	31

Table 2 Test Results for Normality Using Kolmogorov-Smirnov

		Experiment	Control
N		29	31
Normal Parameters ^a	Mean	67.59	67.42
	Std. Deviation	14.307	14.135
Most Extreme Differences	Absolute	.185	.153
	Positive	.185	.137
	Negative	-.109	-.153
Kolmogorov-Smirnov Z		.995	.852
Asymp. Sig. (2-tailed)		.275	.462

Table 3 Results of Levine Statistic Homogeneity Tests

Levine Statistic	df1	df2	Sig.
1.042	2	26	.367

Seeing from the results of the normality test and homogeneity test above, it can be done a hypothesis test. Hypothesis test results using an independent sample T-test were carried out 2 times. In the hypothesis test with the pretest results prove that there is no difference in learning outcomes with a sig (2-tailed) value of 0.964. This is inversely proportional to the hypothesis test on the posttest results which shows there are differences in learning outcomes with a sig (2-tailed) value of 0.001. Data is presented in the Table 4 and Table 5.

Table 4 Summary of Test Results for Pre-test Hypothesis

Variable	Class	Testing		
		t-test for Equality of Means		
		T	Sig (2-tailed)	Mean Difference
learning outcomes	Experiment and Control	.045	.964	.167

Table 5 Summary of Test Results for the Post-test Hypothesis

Variable	Class	Test		
		t-test for Equality of Means		
		T	Sig (2-tailed)	Mean Difference
learning outcomes	Experiment and Control	3,567	.001	11,012

From the above data exposure, mind mapping based contextual learning conclusions can have a positive influence on student learning outcomes.

4. DISCUSSION

From the results of the data analysis it can be discussed several sub topics including: (1) student learning outcomes in classes that use mind mapping based contextual learning with classes that do not use mind mapping based contextual learning; and (2) the effect of mind mapping based contextual learning on class students IV SDN Mawar 2 Banjarmasin.

4.5 Sub Discussion 1

Learning outcomes obtained by students show the results of students' pretests do not have significant differences. Because at the time of the pretest both classes were not given any treatment. The average student learning outcomes are at a value of 67. The same thing was experienced by Makulua (2016), Gunawan (2017) and Leviavia (2017) when conducting experimental studies which showed almost the same pretest results.

After the experimental class is given treatment with mind mapping based contextual learning student learning

outcomes taken from the posttest results point to a very significant difference. This proves that the class given a positive treatment such as the application of mind mapping based contextual learning is higher in learning outcomes compared to the class taught with conventional learning.

This is in line with the opinion of Sayakti (2017) who said that students contribute the learning model to learning activities so as to facilitate students to develop their abilities. The same thing was also revealed by Gunawan (2017) that contextual learning can help students find the meaning of learning and provide opportunities for students to reconstruct their potential knowledge.

4.2 Sub Discussion 2

Mind mapping based contextual learning has a very big influence on student learning outcomes. Successful research also proves that contextual learning can have an influence on student outcomes is research conducted by Nilasari (2016), Makulua (2016), and Gunawan (2017) who concluded that the application of contextual learning affects student learning outcomes. Similarly, the application of mind mapping. Many studies have revealed that the application of mind mapping in classrooms can affect student learning outcomes. This can be seen from research conducted by Purwoko (2014), Sayekti (2017), Leviavia (2017) and Fauzi (2018) who revealed that mind mapping is capable of influencing student learning outcomes.

5. CONCLUSION

By this study, it can be concluded that: (1) classes taught with mind mapping contextual learning have higher learning outcomes than classes not taught with mind mapping contextual learning; and (2) There is an effect of mind mapping based contextual learning on student learning outcomes of grade IV SDN Mawar 2 Banjarmasin.

From the results of the research, it is recommended to: (1) teachers to use contextual learning based on mind mapping in class; (2) school principals to socialize contextual learning based on mind mapping to teachers; and (3) advanced researchers so that they can use this research as reference material and research references which is relevant.

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