THE INFLUENCE OF LEARNING MIND MAPPING ON UNDERSTANDING CONCEPT IN PGSD STUDENTS UNIVERSITY MUHAMMADIYAH PURWOREJO ACADEMIC YEAR 2016/2017

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ABSTRACT

This study aims to determine the effect of mind mapping learning on conceptual understanding in PGSD students of Muhammadiyah University Purworejo Academic Year 2016/2017 This research type is quasi experiment using nonequivalent control group design. This research was carried out in UMP campus with the subject of research of class A and class B students totaling 62 students. Data collection techniques and instruments used in research in the form of tests. Data analysis techniques use average and number. The results of this study indicate the influence of mind mapping on the understanding of student concepts. The influence is proved by the average value of pre test and posttest from experiment class 63 to 81 and control class 67 to 75. So, it can be concluded there is a difference understanding of the concept between students taught by mind mapping method and students who were taught by conventional methods.

Keywords:*Mind Mapping Method, Concept Understanding*

1 INTRODUCTION

The era of globalization is a global era that no longer recognize the boundaries of place and time. For that, the need for quality human resources to be able to answer every challenge that arises in the development of the era of globalization. One of the vehicles that can improve the quality of human resources is education. This is in accordance with the national education objectives set forth in Law No.20 of 2003 on National Education System (National Education Ministry, 2003) that the goal of national education is to create human beings of Indonesia who are faithful and pious, knowledgeable, healthy physically and spiritually, and have an independent personality and character.

Education is basically an interaction between students with lecturers and learning resources in a learning environment in accordance with the objectives to be achieved.

As one of the formal educational institutions, the interaction between students and lecturers in schools more common during the learning process. For that, the learning process in school must be done optimally on all subjects, including in science lesson subjects.

Natural Science is a subject in elementary school that is intended for students to have knowledge, ideas ideas, and concepts about the natural environment. This knowledge can be learned by experience through a series of scientific processes but in fact many concepts must be mastered in science learning. Therefore, elementary learning should be delivered by the appropriate teacher. Elementary school teachers are required to have minimum academic qualification of S1 / D4 and academic certificate [1]. In this case, PGSD students are prospective educators who are prepared to teach elementary school. As a prospective educator, PGSD students must master all elementary school maps. To achieve that, PGSD lecturers need a learning model that can understand the material on PGSD students.

Learning refers to the learning process that places the student as the main character in the learning process. In the learning process must grow the atmosphere in such a way that create an active atmosphere where students actively ask, express opinions and question what has not been understood without shame and not a passive learning process that only accepts explanations from lecturers about knowledge.

Mastery of concepts is included in the categories of intellectual proficiency learning outcomes. A concept is formed in the mind of the individual through the process of recognizing and understanding the characteristics of the concept. In order to understand the concept can be optimal, it is necessary to develop conditions - conditions that support in learning. One condition that supports learners succeed in understanding the concept of a learning material is the ability of the lecturer in presenting the concept in a unique form and attract the attention and

motivation of students. A concept will enter into the student's memory system and be declared successful in understanding the concept if the student is able to re-reveal the concept from the student's memory system. [2]

The use of learning methods has a very important role. In reality certain methods can make the student more active, provided that the method is applied correctly. A method of learning that can change students' understanding of physics becomes an easy lesson, interesting and fun but can also give positive impact to the development of cognitive and social aspects of students which aspect is needed in the process of physics learning. Therefore, the participation of students during the learning process takes place is expected by the way of conveying questions about the material that is not understood by the student.

Alternative learning methods that can be used that is by using conceptual learning method, where this method can be used to explore students' cognitive [3]. Concept maps are a creative way for each learner to record lessons and make it easier for them to clearly and creatively identify what they have learned. According to [4] "Concept maps are concrete graphic illustrations which indicate how a single concept is linked to other concepts in the same category." From the opinion it implies that the concept map concepts with other concepts so that there will be a link between those concepts .To create a concept map, students are trained to identify key ideas related to a topic and to construct the ideas in a logical pattern. Sometimes concept maps are hierarchical diagrams, sometimes they focus on causality. While the method of recitation is a method of giving tasks that can explore the knowledge of students.

In learning with mind mapping method, mind map is a creative product produced by students. In the process, students are given the freedom to summarize and transform a science in other forms through the depiction of symbols, colors, words, and lines, according to their thought idea. Thus, students are given the opportunity to actively construct

their own understanding through the freedom of imagination that will enhance students' conceptual understanding. Based on the above explanation, it is necessary to conduct research that aims to find out the improvement of students' concept comprehension ability that follows learning by mind mapping method [5].

2 RESEARCH METHODS

Population in this research is all student of PGSD second semester academic year 2016/2017 Universitas Muhammadiyah Purworejo. The sample of this research is PGSD Student Class A as experiment class and class B as control class. The purposive random sampling technique is used to take 2 classes as a research sample. Sampling is purposively taken into consideration that the selected classes are taught by the same lecturers so that the learning experience gained by students is relatively the same.

This research is a quasi experiment research with pretest-posttest control group design. The data analyzed in this research is the data of students' mathematical concept comprehension in the form of quantitative data. Data collection techniques used are test techniques.

3 RESULT AND DISCUSSION

Data distribution pretest understanding of experiment class concept and control class is presented in table 1 and table 2.

Table 1. Distribution of Pretest Frequency Understanding of Experiment Class Concept

Range	fi	xi	fi.xi	Presentage
36-44	5	40	200	17%
45-53	4	49	196	13%
54-62	5	58	290	17%
63-71	9	67	603	30%
72-80	4	76	304	13%
81-89	2	85	170	7%
90-98	1	94	94	3%
Total	30	469	1857	100%
Minimum		38		
Maximum		98		
Mean		1857: 30=61,9		

Based on Table 1, it is known that the lowest score in the experimental class is 38 and the highest value is 98 with the average test score of 61.9. The KKM assessment is 66, so there are 19 unfinished students or 64% of the total students in the class and 11 students have completed or 36% of the total students in the class.

Table 2. Distribution of Pretest Frequency Understanding Control Class Concepts

Range	fi	Xi	fi.xi	Presentase
36-44	2	40	80	17%
45-53	3	49	147	13%
54-62	9	58	522	17%
63-71	3	67	201	30%
72-80	6	76	456	13%
81-89	4	85	340	7%
90-98	3	94	282	3%
Total	30	469	2028	100%
Minimum		36		
Maximum		98		
Mean		2028: 30=67,6		

Based on Table 2, it is known that the lowest grade in the experimental class is 36 and the highest value is 98 with the average test result 67.6. KKM assessment is 66, so there are 15 unfinished students or 50% of the number of students in the class has not reached KKM and 15 students have been completed. Based on these data, it is necessary to have a learning model that can improve students' conceptual understanding.

In the implementation of learning in the experimental class, the lecturer assigns students to create concept maps based on the material assigned to be studied. The next step, the students presented the material assigned with concept maps that have been made. Then, continue the question and answer about the material that is conveyed. At the end of the meeting, the lecturer gives a test of oral and written test.

Learning outcomes in the experimental class are presented in Table 3 and the learning outcomes in the control class are presented in Table 4.

Table 3. Post Test Frequency Distribution Understanding the Concept of Experiment Class

Range	fi	Xi	fi.xi	Presentase
61-70	6	65,5	393	20%
71-80	8	75,5	604	27%
81-90	9	85,5	769,5	30%
91-100	7	95,5	668,5	23%
Total	30	322	2435	100%
Minimum		61		
Maximum		100		
Mean		2435: 30=81,2		

Based on Table 3, it is known that the lowest post test score in the experimental class is 61 and the highest score is 100. The mean score of the student test is 81.2. Students who reach KKM are 28 students or 93% of the total students in the class. While the number of students who have not reached the KKM there are two students or 7% of the number of students in the class.

Table 4. Post Test FrequencyDistribution Understanding Control Class Concepts

Range	fi	Xi	fi.xi	Presentase
51-60	6	55,5	333	20%
61-70	3	65,5	196,5	10%
71-80	12	75,5	906	40%
81-90	6	85,5	513	20%
91-100	3	95,5	286,5	10%
Total	30	377,5	2235	100%
Minimum		53		
Maximum		100		
Mean		2235: 30=74,5		

Based on Table 4, it is known that the lowest score of post test in the control class is 53 and the highest value is 100. While the average score of the student test is 74.5. Students who reach the KKM are 22 students or 73% of the total students in the class. While the number of students who have not reached KKM there are 8 students or 27% of the number of students in the class.

From these results can be seen that efforts to increase understanding of the concept of IPA has been successful because it has reached the performance indicators of research. Therefore, this study does not continue in the next cycle.

4 DISCUSSION

The use of mind mapping method has proven to facilitate students in learning, especially in science learning. This method will help students to remember materials in the form of complicated and difficult to memorize concepts. Through the mind mapping students easier in organizing his mind to understand the concept of soil and rock are poured in the form of concept maps or mind mapping. This is in line with opinion [6] saying that mind map (mind mapp) is a creative note method that allows us to remember a lot of information.

The increase can be seen from the calculation of test learner values achieved in pretest and postest as follows:

4.1 In the initial or pre-test condition before the lecturer applied the mind-mapping method, the students' science learning outcomes in the classroom were still low with an average of 61.9 and the achievement of KKM of 64% with the details of 19 students having scores above the KKM and 11 students are still under KKM. While in the control class, the average value of pre test 67.1 and KKM achievement of 50% with details of 15 students have value above KKM and 15 students still under KKM. Therefore it is necessary to take action to overcome the low understanding of student concepts on science lesson by using the method of mind maping.

4.2 After the learning, the experiment class the average test value to 81.2 with the lowest score of 61 and the highest value 100. Achievement of KKM increased to 93% with details, 28 students have value above KKM and 2 students still under KKM. While in the control class the average test value to 74.5 with the lowest score of 53 and the highest 100. Achievement of KKM to 73% with details of 22 students have value above KKM and 8 students still under KKM.

Based on these results, it can be seen that the average increase in the experimental class is higher than the increase in the average value in the control class. In the experimental class the average value rose from 61.9 to 81.2 or up 19.3. While in the control class the average value rose from 67.1 to 74.5 or up 7.4. From these results, it can be said the method of mind mapping, effective to improve the understanding of the concept of the students, especially the science course.

The increase is of course in because the application of mind mapping method can attract the attention and enthusiasm of students to understand the material taught by the lecturer. In addition, mind mapping learning methods can foster student activeness and improve student concentration during the learning takes place.

Based on the above description, the researcher can conclude the learning with mind mapping method makes it easier for learners to understand the concept in learning so that it can improve students' concept understanding.

Based on table 3. Improving the ability to understand the concept of PGSD students who follow the learning with mind mapping method can be higher than the ability to understand the concept of students who follow conventional learning because, every stage- stages of learning methods mind mapping provides a very big opportunity to students to be able to develop ability to understand the concept. In the process, learning by mind mapping method only put the lecturer as the facilitator of learning, thus giving more opportunity to the students to be more active in constructing their own understanding, either individually or by using the teaching materials and learning resources.

5 CONCLUSION

Based on the results of research in two two classes by applying the use of mind mapping method to improve understanding of science concept in PGSD students Semester II academic year 2016/2017 can be concluded as follows:

The mastery of science materials after the learning in the experimental class is that the students who master the material above the KKM is 28 or 93% of the total students in the class and 2 students or 7% of the number of students is still below average. While in the control class, students who master the material above KKM there are 22 students or 73% of the number of students in the class and 8 students or 27% of the number of students in the class is still under the KKM.

Based on the results of this study by using pre test and post test above, the hypothesis that has been formulated proved true. This means that learning by using mind mapping method can improve the understanding of science concept in PGSD students in second semester of academic year 2016/2017.

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