



The Effect of Mind Mapping Media on Student Learning Outcomes

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Abstract: This study aims to see the effect of use Mind Map Media (Mind Mapping) on student learning outcomes in social studies class IX at SMP Negeri 1 Lubuk Attitude. This research uses a quantitative approach in the form of Quasy Experiment . The technique used in sampling was purposive sampling , so that the samples were students of class IX.6 (Experimental class) and students of class IX . 4 (Control class). Data collection techniques in the form of objective questions as many as 30 questions. After obtaining the data, a normality test and homogeneity test were carried out on the learning outcome data, then the t-test was continued . The results of the study show the average value of students who use Mind Map Media (Mind Mapping) that is 77.53 higher than students who use conventional media that is 70.5.

Keywords: Learning Media, Mind Mapping, Learning Outcomes.

INTRODUCTION

The social studies learning pattern emphasizes educational elements and equipping students with social problems that occur in society. The emphasis on learning is not limited to rote learning, but lies in efforts so that they are able to make the material they are studying as a provision for understanding and participating in the life of the community in their environment, as well as a provision for them to continue their education to a higher level.

Teachers serve as managers of learning activities, are required to be able to motivate and develop students' creativity so that students can develop their creativity. With the creativity possessed by students, it will make it easier for students to find more creative ideas in learning. The ideas that students have can be developed especially in learning that requires students to be directly involved in its implementation, such as in social studies lessons.

In learning activities, the teacher often dominates the teaching and learning process and the teacher also does not provide opportunities for students to develop their creativity. So that students are rigid in learning and fixated on the material provided by the teacher and often

experience difficulties in learning which results in students getting grades below the passing mark. To be able to go beyond the limits of completeness, it is necessary to make changes in the learning process from only using conventional media to learning media that is more active, creative, innovative, interesting, fun and able to provide a good understanding of concepts to students.

Based on the initial observations that the author made in August at SMP Negeri 1 Lubuk Attitude, it can be seen that the teacher still dominates the learning process and the teacher does not provide opportunities for students to develop their creativity so that learning becomes less than optimal. In addition, in explaining learning the teacher only uses conventional media, the teacher only explains learning and occasionally dictates notes to students in long sentences. Other factors that cause social studies learning to be less than optimal are: (1) Students have difficulty finding the essence of learning (2) Students are less interested in rereading notes. (3) Students also often experience difficulties with rote material (4) Students experience difficulties in recording material provided by the teacher. The problems experienced by these students will affect the low student learning outcomes which result in the student's score being insufficient KKM. In this IPS subject, the KKM set is 75.

On the basis of the problems stated above, different learning innovations are needed, namely by using the mind map method or *mind map ping* to overcome the learning difficulties faced by these students. Here students do not need to focus on taking notes on the writing given by the teacher, students only know the essence of the problem, then make their own mind maps with their own creativity. According to Silberman (2009: 188) "mind mapping is a creative way for individual students to generate ideas, record lessons or plan new research". *Mind mapping ping* technique invite students to explore their potential and train students to be diligent in reading by sharing various kinds of reading books, besides that *mind map ping* also teaches how to summarize learning to be more interesting and more concise.

LITERATURE REVIEWS

Learning outcomes

Learning outcomes are the level of actual ability that can be measured from mastery of knowledge, attitudes, and skills as an individual's effort regarding what is learned. Agus Suprijono (2012: 5) states that "learning outcomes are patterns of action, values, notions, attitudes, appreciation and skills". Changes in the patterns of behavior referred to are the activities and mindsets of students that occur when students learn meaningfully.

According to Aunurrahman (2012:37) "learning outcomes are characterized by changes in behavior". Although not all behavior is the result of learning, learning activities are generally accompanied by changes in behavior. Changes in behavior as a result of learning can also touch changes in affective aspects, including emotional changes.

As explained by Bloom in Agus Suprijono (2012: 6), "learning outcomes include cognitive, affective and psychomotor abilities". Meanwhile, according to Lindgren in Agus Suprijono (2012: 7) "learning outcomes include information skills, understanding and attitudes". The learning outcomes can be seen from the students' ability to remember the lessons that have been conveyed by the teacher during the learning process and how these students can apply them in everyday life and are able to solve existing problems.

Teachers need to carry out assessments on learning because assessment is an attempt to obtain information about the overall acquisition of student learning outcomes, both knowledge, concepts, values, and process skills. This is done so that teachers are able to make decisions in determining appropriate teaching strategies and in improving the learning process.

Instructional Media

According to Cecep Kustandi and Bambang Sutjipto (2011: 9) "learning media is a tool that can help the teaching and learning process and serves to clarify the meaning of the message conveyed, so that it can achieve learning objectives better and more perfectly." The characteristics and abilities of each media need to be considered by the teacher so that they can choose which media are appropriate to their conditions and needs.

In the learning process, the media has a function as a carrier of information from the source (teacher) to the recipient (student). The use of learning media in the teaching and learning process can generate new desires and interests, generate motivation and stimulate learning activities, and even bring psychological influences on students. The use of learning media at the learning orientation stage will greatly help the effectiveness of the learning process and the delivery of messages and lesson content at that time.

According to Daryanto (2010: 5) "the uses of media include (1) clarifying messages (2) overcoming the limitations of space, time, energy, and senses (3) creating a passion for learning (5) enabling children to learn independently." The information contained in the media must be able to involve students, both in their minds or mentally or in the form of real activities, so that learning can occur. Media, one of the communication tools in conveying messages, is of course very useful if it is implemented into the learning process, the media used in the learning process is referred to as learning media. This learning media is one of the components of the teaching and learning process which has a very important role in supporting the success of the teaching and learning process.

Hamalik in Cecep Kustandi and Bambang Sutjipto (2011: 21) suggests that "the use of learning media in the teaching and learning process can generate new desires and interests, generate motivation and stimulation of learning activities, and even bring psychological influences on students". Learning media must be able to provide a pleasant experience and meet the individual needs of students, because each student has different abilities.

According to Kemp and Dayton in Cecep Kustandi and Bambang Sutjipto (2011: 23) "learning media can fulfill three main functions if the media is used for individuals, groups, or large groups, namely in terms of (1) motivating interest or action (2) presenting information and (3) giving instructions". Without media, communication will not occur and the learning process as a communication process will also not take place optimally.

Mind Mapping

A good note-taking method should help us remember sayings and readings, improve understanding of the material and provide new insights. By using (mind mapping) mind maps will make it easier for us to remember a lot of information. Buzan (2013: 12) argues that "a mind map is an extraordinary storage, data retrieval, and access system for the library, which actually exists in your amazing brain". Meanwhile, according to DePorter (2013: 153) "mind mapping is a technique of utilizing the whole brain by using visual images and other graphic infrastructure to form impressions".

According to Silberman (2009: 188) "mind mapping is a creative way for individual students to generate ideas, record lessons or plan new research". By instructing students to make mind maps, they will find it easier to identify clearly and creatively what they have learned and what they are planning to do.

In taking notes, mind maps help students organize information and expedite the flow of thoughts. Damasio in DePorter (2012: 225) says that "when the brain remembers information, it usually does so in the form of colorful pictures, symbols, sounds, and feelings". Therefore, mind maps are made to match the leaps that occur in the mind, because mind maps work like the brain, really pushing insights and brilliant ideas.

According to Istarani (2012: 58) "mind mapping can link new and unique ideas with existing ideas, giving rise to specific actions taken by students by using interesting colors and

symbols and creating a new and different mind mapping result" . Mind mapping is one of the creative products produced by students in learning.

METHODS

In this study, a quantitative approach was used with a *quasi-experimental form* , namely to determine the effect of *Mind Mapping Media* on learning outcomes obtained by class I X students. State Middle School 1 Lubuk Attitude.

According to Sugiono (2008: 117) "population is a generalization area consisting of: objects/subjects that have certain qualities and characteristics set by researchers to study and then draw conclusions". Equivalent to the statement above, according to Sukardi (2012: 53) "population is in principle all members of groups of humans, animals, events, or objects that live together in one place and are planned to be the target of conclusions from the final results of a study".

The sample studied was taken from 2 homogeneous classes taking into account the number of students, the average grade of students, the same vassal , and taught by the same teacher, namely class I X .6 and class I X .4. First class used as an experimental class with 3 2 students, and the second class was used as a control class with 3 2 students .

The normality test aims to see whether the sample is normally distributed or not. To test for normality, the Liliefors test is used. The homogeneity test aims to determine whether the sample class data in this study already has a homogeneous variance or not . To test the homogeneity, the *Bartlett test was carried out* . After the normality test and homogeneity test were carried out, a hypothesis test was carried out using the two average similarity test. Test T-test to see the level of significance between the experimental class and the control class, as revealed by Syafril (2010: 176) as follows:

$$t = \frac{\bar{X}_1 - \bar{X}_2}{\sqrt{\frac{SD^2 X_1}{N_1 - 1} + \frac{SD^2 X_2}{N_2 - 1}}}$$

RESULTS AND DISCUSSION

Research result

The description of the data in this study consists of two groups, namely data on student learning outcomes using *Mind Mapping Media*. which is called the experimental class (IX.6) and data on student learning outcomes with conventional media is called the control group (IX.4)

Table 1. Student Learning Outcomes with Experimental Class media & Conventional media

Variable	IPS learning	
	Media Mind Map (Mind Mapping)	Conventional Media
The number of students	32	32
Highest score	93	86
Lowest score	63	50
Total Value	2481	2256
Average	77.53	70.5
SD	8.59	11.21
SD2	73.78	125.66

In order to be able to draw conclusions from the research results, a hypothesis test was carried out using the t test. Before conducting the t test, a normality test and homogeneity test were first carried out on the final test results.

1. Normality test

L_0 and L_t were obtained at a significant level of 0.05 for $n = 32$.

Based on the table above, it can be seen that the Experiment class has a value of L count of 0.1176 which is smaller than L table of 0.156 for $\alpha 0.05$. Thus the experimental group values come **from normally distributed** data . For the control class, L count is 0.929 which is smaller than L table 0.1 56 for $\alpha 0.05$. This means that class data The control comes from **normally** distributed data .

2. Homogeneity Test

The second requirement test is homogeneity testing using the Barlet t test .

From the table above, it can be seen that the experimental class and control class χ^2 count is smaller than χ^2 the table (χ^2 count $<$ χ^2 table 2,213 $<$ 3,841), meaning that the experimental class and control class have **homogeneous variances** .

3. Hypothesis testing

Table 2. Test results with t-test

No	Groups / Results	Grade Point Average	tcount	ttable $\alpha 0.05$
1.	Experiment	77.53	2.77	2,000
2.	Control	70.5		

Look at table 2 t with dk $(N_1 - 1) + (N_2 - 1) = 62$. In the existing df table are 60 and 120 because it is close to 60, then based on a table with a df of 60 for a significant level of $\alpha 0.05$, the value of t_{table} is 2,000. Thus $t_{count} > t_{table}$, namely $2.77 > 2000$, it can be said that the hypothesis can be **accepted**. So that it can be concluded that there is a significant difference at the significant level $\alpha 0.05$ of student learning outcomes between the experimental class using Mind Mapping media *compared* to the control class using conventional media .

Discussion

Based on the tests given to students, the average experimental class was 7.53 with the highest score of 93 and the lowest score of 63. Meanwhile, in the control class, the average was 70.5 with the highest score of 86 and the lowest score of 50. In the normality test of the experimental and control groups the results obtained $L_{count} < L_{table}$, namely $0.1176 < 0.1562$ (Experiment) and $0.0929 < 0.1562$ (Control) then both groups come from data that is normally distributed for $\alpha 0.05$. Furthermore, in testing the homogeneity of the data from the two groups, the results obtained χ^2 were calculated $<$ χ^2 table , namely $2,213 < 3,841$, so the two groups had a homogeneous variance for $\alpha 0.05$. Meanwhile, in testing the hypothesis using the t-test, the results obtained are $t_{count} > t_{table}$ for $\alpha 0.05$, namely $2.77 > 2,000$.

Based on the analysis of the data obtained, it was found that the social studies learning outcomes of class IX.6 students were higher than the social studies learning outcomes of class IX.4 students of SMP Negeri 1 Lubuk Attitude. Therefore, the teacher should apply learning using *Mind Mapping media* in social studies learning. This is because social studies subjects require students to be able to remember important concepts in order to understand social studies learning. Mind mapping *is* a way of writing creatively, effectively by mapping thoughts that can facilitate memory and remember information rather than using note-taking techniques with long sentences . According to Istarani (2012: 58) " *mind mapping* can link new and unique ideas with existing ideas, giving rise to specific actions taken by students by using interesting colors and symbols and creating a new and different mind mapping result" .

According to Buzan (2013: 103) " *a mind map* is a tool for creative thinking that reflects the natural workings of the brain. *Mind maps* allow the brain to use all the images and

their associations in a radial and network pattern as the brain was designed, as the brain has always used internally.” Learning by using *Mind Mapping* Media is more interesting for students because in this learning activity students are motivated and excited when the teacher explains the lesson using symbols and attractive colors that can be remembered easily, students can also express their creativity in making maps mind (*mind mapping*) with various colors and symbols in each note. The use of mind map notes (*mind mapping*) is also able to familiarize students to practice their creativity so that students can be more creative in expressing their ideas that are useful for learning . .

Mind mapping (*Mind mapping*) combines and develops the working potential of the brain contained within a person. *Mind mapping* is a note-taking technique that combines the two hemispheres of the brain. For example, notes on subject matter owned by students can be expressed through pictures, symbols and colors. Mind map (*Mind mapping*) realizing students' expectations for long-term memory. Using interesting colors and symbols will create a new and different mind mapping result.

Mind mapping *is* one of the creative products produced by students in learning activities. In the learning process, students want the subject matter received to become long-term memory, so that when the material is needed again students can remember it. Subject matter made in the form of a mind map (*mind mapping*) will make it easier for the brain system to process information and put it into long-term memory. With the involvement of both hemispheres of the brain, it will be easier for someone to organize and remember all forms of information, both written and verbal. The left hemisphere of the brain is concerned with words, numbers, logic, sequences, and details (ademic activity). The right hemisphere of the brain is associated with colors, images, imagination and space or is referred to as creative activity. If the two hemispheres of the brain are combined simultaneously, the information (memory) received can survive into long-term memory. According to Jensen (2008:21) "the brain combines patterns, changes meanings, and selects the experiences of everyday life from a large number of clues". The brain processes information so efficiently that nothing in human life can match the learning potential of humans.

Another advantage of using *mind mapping notes* is that it accustoms students to practicing their creative activities so that students can create a creative product that can benefit themselves and their environment. High motivation can increase students' self-confidence, so that students do not hesitate and are embarrassed and want to develop the potentials that exist within them, especially the potential associated with creativity.

Mind mapping is one of the simple form creative products that can be developed. With the technique of noting mind mapping, it should be suspected that students' creativity (creative attitude) will increase. According to Buzan (2013: 110) "*mind maps* can encourage creativity to come up with brilliant ideas, find inspiring solutions to solve problems or find new ways to motivate yourself and others. Thus, the existence of a mind mapping technique *can increase* student learning activities so that students become enthusiastic in learning and seeking new information and *mind mapping*. can condense a book into a single book.

Meanwhile learning with conventional media students look passive and learning is more dominated by the teacher. Teachers prioritize the delivery of subject matter directly to students without fully involving student activities. In this case the teacher is more likely to provide material than involve students to be active in learning. This can be seen from the lower average acquisition of classes that study using *Mind Mapping media* in the social studies subject at SMP Negeri 1 Lubuk Attitude.

From the description above it can be concluded that: "student learning outcomes taught with mind mapping media are *significantly* higher than student learning outcomes using conventional media in social studies subjects in class IX SMP Negeri 1 Lubuk Attitude".

CONCLUSION

Based on the results of the analysis of research data that has been carried out regarding the effect of applying Mind Mapping media, it can be concluded that the average score of social studies learning outcomes of students who learn to use mind mapping media (Experimental class) is 77.53, higher than the average value of students who learn using learning using conventional media (control class), namely 70.5. With the t test obtained $t_{\text{count}} = 2.77$ while t_{table} for $\alpha = 0.05$ is 2,000. Thus $t_{\text{count}} > t_{\text{table}}$ for $\alpha = 0.05$, namely $2.77 > 2,000$, from the results obtained, student learning outcomes are taught with mind mapping media significantly higher than the learning outcomes of students using conventional media. Thus, there is an influence of mind mapping media on student learning outcomes in social studies subjects in class IX students of SMP Negeri 1 Lubuk Attitude.

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