The Effect of Mind Mapping Learning on Affective Learning Outcomes of Grade X Students on Ancient Human Material at Islamic Senior High School

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Abstract **-** This study aims to determine the effect of mind mapping learning on grade X students' affective learning outcomes on human material. This study uses an experimental research design, a type of pre-experimental one shot case study. Data collection techniques used in this study used observation with a data collection tool observation sheet attitude of students. The research subjects were students of grade X-2 majoring in social sciences as many as 38 students. This study uses a non-parametric test to determine the effect of mind mapping learning on students' affective learning outcomes. Non parametic tests are used because data is not normally distributed. The binomial test was used to determine the effect of mind mapping learning on students' affective learning outcomes. The binomial test shows a significance value of 0,000. Because the binomial significance value of 0,000 > α 5%, there is the effect of mind mapping learning on students' affective learning outcomes in early human matter. Thus learning mind mapping can be used in learning to improve student's affective learning outcomes.

Keyword- mind mapping, affective learning outcomes, senior Islamic high school

I.INTRODUCTION

Learning outcomes are the most important element in the world of education (Casperson, 2014) and are key to learning (James, 2005). Bloom stated in the learning outcomes related to cognitive, affective and psychomotor aspects. On the cognitive aspects related to students' knowledge in learning. On the affective aspects with regard to student attitudes during the learning process and on aspects of skills relating to student skills (Suprijono, 2013).

The results of affective learning involve changes in the feelings, motivations and attitudes of students that arise from the process of experiencing learning (Buma, 2018). Affective learning outcomes are learning outcomes relating to the values, attitudes and behaviors of students. Affective learning outcomes are closely related to students' ability to listen and respond to others when interacting. Affective learning outcomes also relate to the ability within students to adapt according to situations and conditions (Shephard, 2008). Thus affective learning outcomes are learning outcomes that are far more complex compared to other learning domains, because affective learning outcomes have an important role in changing students' behavior and mindset (Ilonen and Heinonen, 2018).

One of the lessons that can shape students' affective abilities is mind mapping. Mind mapping directs students to explore the relationships between concepts in learning. The relationship between concepts in mind mapping allows students to understand the relationship according to their thinking abilities (Davies, 2010). Mind mapping is a method that can connect concepts through structure and images. Mind mapping can also make learning more meaningful (Polat et al., 2017). Mind mapping can effectively improve student learning outcomes, foster collaboration and enhance student creativity in learning (Hua and Wind, 2018). Mind mapping it self is an effective learning pattern to stimulate knowledge and make learning more enjoyable (McCrea and Lorenzet, 2018).

Previous research stated that mind mapping brings new enthusiasm to improve students' ability to master subject matter (Mento et al., 1999). Through mind mapping learning, there are positive effects on improving student learning outcomes in learning (Liu et al., 2014). Mind mapping is able to direct students to build knowledge in learning. In

addition, through mind mapping learning students can think critically in solving each problem faced by different styles (Ismail et al., 2010).

Based on previous research, the assessment of learning outcomes using mind mapping tends to assess cognitive learning outcomes and has not touched on other aspects. In this study, researchers assessed the effect of mind mapping learning on students' affective learning outcomes. Assessment of affective learning outcomes is closely related to the learning environment. The influence of the learning environment on the affective learning outcomes of students has a close relationship in determining student achievement (Sivan and Chan, 2013). The main view in assessing student learning outcomes is through student learning. In designing assessment of learning outcomes must be based on competencies developed by the teacher to meet student-oriented learning goals (Erikson and Erikson, 2018). Thus the purpose of this study was to reveal the effect of mind mapping learning on students' affective learning outcomes on ancient human material in Islamic senior high school.

II.THEORITICAL FRAMEWORK

2.1 Mind Mapping

Tony Buzan introduced mind mapping in 2004. Mind mapping is a learning strategy that is used to stimulate knowledge with a series of maps that have been conceptualized. Huda stated that mind mapping is one of many strategies to improve student thinking (2015, p. 307). Ngalimun stated that mind mapping learning is very suitable for students' initial knowledge review (2017, p. 348). Making mind mapping in historical learning is accompanied by a combination of colors, images, and curved branches. Through this method, it is expected to facilitate students in remembering the information contained in mind mapping. Mind mapping is the easiest method to use to extract information from inside and outside the brain. The steps for making mind mapping are as follows.

a. The materials and tools used in making mind mapping are blank paper without lines and colored markers, students have been able to make mind mapping personally. The steps in making mind mapping are as follows.
b. It starts with providing materials and tools in the form of blank paper without lines and markers placed on a flat plane. Then write the keyword in the middle of the paper and give the branch according to the desired concept in all directions to express it.
c. Write down the central idea represented by the image. Images that have a thousand words and use imagination to develop the concept. Images will give more meaning and help students stay focused.
d. Make branches related to central ideas. The existence of these branches can make it easier for us to remember and the relationships between the concepts made. In making branches, you should use lines, different colors and arrows to connect the central idea with supporting ideas.
e. Using one keyword for each branch, a single keyword will make it easier to spur the emergence of new ideas and thoughts.
f. Use different colors in each writing. Color diversity in mind mapping will make writing more interesting and stimulate the right brain to work better (Huda, 2015, p. 309).

2.2 Learning Outcomes Affective

Gagne states that learning is a process of changing behavior through experience. Behavior changes according to Benjamin S Bloom consist of three aspects which consist of cognitive aspects, affective aspects and psychomotor aspects. On cognitive aspects, related to students' abilities in knowledge processing. In the affective aspect, related to attitudes, feelings, interests and morality. In psychomotor aspects, it is related to the function of the nervous system, muscles, and physical functions. In general, teachers tend to make cognitive assessments and override affective and psychomotor assessments in students in the learning process. Wood (1996) affective assessment is a method used to reveal how a student feels about himself and the self-image that influences the environment (Basuki and Hariyanto, 2016, p. 184). Thus the objectives in the assessment of affective learning outcomes can be seen from the attitudes of students in the learning process. The attitude assessment in this study consisted of honest, disciplined, polite and responsible

III.METHOD

The research design used in this study was an experiment with a type of pre-experimental one shit case study design. Design uses one class in research without pre-test. Treatments were given directly by using mind mapping and then doing a post test in learning.

Figure 1
Pre Experimental Research Design (One Shot Case Study)

Description:
O : Posttest, to find out the affective learning outcomes of students after using mind mapping
X : Treatment of mind mapping learning

(Chreswell, 2014)

This research was conducted at MAN 1 Pontianak, West Kalimantan , Indonesia. The sampling technique used was simple random sampling. The subjects in this study were students of grade X-2 majoring in social science. Data collection techniques with observation and data collection tools using observation sheets. Before conducting the research, the researchers tested the observation sheets of affective learning outcomes of students in different classes to find out the quality of the observation sheet that would be used in

IV.RESULT AND DISCUSSION

The study went through two stages consisting of expert validity and results of field research and statistical analysis. The following will be elaborated in detail the two steps carried out in this researcher.

3.1 Expert Validity

Expert validity was used to determine the quality of the instruments used in the study. The following are the results of the instrument validity of the student's observation sheet attitude.

Table 1. Results of Validity of Student Attitudes Instruments Observation Sheet

No.	Aspect Assessed	Value			Average	Kreteria
		V1	V2	V3		
1	Substance of	3.83	4	3.5	3.78	Very Good
2	Construction	3.83	4	3.5	3.78	Very Good
3	Languages	3.67	4	4	3.89	Very Good
Validator		3.67	4	3.44	3.76	Very Good

Description:
V1: Validator 1
V2: Validator 2
V2: Validator 3

The substance aspect developed in the observation sheet is the attitude of students categorized very highly good with an average value of 3.78. The indicators developed in the aspect of substance consist of an assessment of students' honesty, student responsibility, student discipline, and polite students listed in the attitude assessment observation sheet. The construction aspect that was developed in the observation sheet was the attitude of the categorized students was very good with an average score of 3.78. Indicators developed in the construction aspect consist of including subject identity, assessment instructions, assessment rubrics, and assessment aspects. In the aspect of language, the observation sheet of the attitude of students developed has a very good category with an

average value of 3.76. The indicators that are assessed on aspects of the language include the use of good and correct Indonesian, communicative language and do not confuse privacy or groups.

Criteria for the withdrawal of decisions on the instruments of the observation sheet of students' attitudes are adapted from Riduwan (2014), as follows.

Table 2. Student Observation Quality Criteria Student

Value Interval Value	Category
3.5 3,5 P ≤ 4.0	Very Good
2.9 ≤ P 4 3.4	Good
2.3 ≤ P 8 2.8	Good Enough
1.7 ≤ P ≤ 2.2	Less Good
1.0 ≤ P ≤ 1.6	Not Good

Based on the results of the assessment conducted by three validators, it can be concluded that the instruments of the student observation sheet can be used because they are very well categorized with an average score of 3.76.

3.2 The results of research in the field and statistical analysis

The following will describe the results of research in the field and statistical analysis used in the study. The study was conducted for one month. In the first three weeks, researchers gave mind mapping learning treatments to students and one week later the researchers assessed students' attitudes after the implementation of mind mapping learning in the classroom. The assessment results of student attitudes are as follows.

Table 3. Value of student attitudes

No	Name	Value of Students
1	PS2-1	100
2	PS2-2	98
3	PS2-3	100
4	PS2-4	95
5	PS2-5	100
6	PS2-6	97
7	PS2-7	98
8	PS2-8	100
9	PS2-9	95
10	PS2-10	97
11	PS2-11	100
12	PS2-12	100
13	PS2-13	97
14	PS2-14	98
15	PS2-15	98
16	PS2-16	100
17	PS2-17	100
18	PS2-18	100
19	PS2-19	98
20	PS2-20	98
21	PS2-21	100
22	PS2-22	100
23	PS2-23	98
24	PS2-24	100
25	PS2-25	95
26	PS2-26	97
27	PS2-27	98
28	PS2-28	98
29	PS2-29	100
30	PS2-30	100

31	PS2-31	95
32	PS2-32	100
33	PS2-33	100
34	PS2-34	97
35	PS2-35	100
36	PS2-36	98
37	PS2-37	98
38	PS2-38	98

Based on the attitude value of students it is known that the mean value of students' attitudes is 98.45, median is 98.00, variance is 2.740 and standard deviation is 1.655. Statistical analysis was used to determine whether mind mapping learning had a significant effect on students' affective learning outcomes. The statistical analysis in this study will be presented as follows.

Table 4. Nominality Test forDistribution

	Shapiro-Wilk		
	Statistics	df	Sig.
Social attitudes	.806	38	.000

Normality tests were distributed using the Shapiro Wilk test with results of 0,000. The post test significance value is 0,000 < α 5% so the data is not normally distributed. Because in this study the data were not normally distributed, the researchers used binomial tests to determine the effect of mind mapping learning on students' affective learning outcomes. The binomial test results are as follows.

Table 5. Test of Binomial

		Category	N	Observed Prop.	Test Prop.	Asymp. Sig. (2-tailed)
Affective Learning	Group 1	<= 75	0	.00	.50	.000[a]
	Group 2	> 75	38	1.00		
	Total		38	1.00		

Binomial significance value of 0,000 > α 5%, the categorized data is very significant. Thus there is a significant effect of mind mapping learning on students' affective learning outcomes.

Skinner states that learning is a process of behavior change. Behavior changes are obtained through the process of operant conditioning. In connection with the research conducted, changes in student attitudes occur because there is operant conditioning carried out in learning. operant conditioning in this study is learning using mind mapping. Mind mapping is used in research to change the behavior of students who previously tended not to respond to subject matter well. With the implementation of mind mapping learning, there is a change in student behavior, especially in student attitudes. Learning by using mind mapping has a positive effect on students so students feel interested in learning.

David P. Ausubel said that meaningful learning is learning that involves understanding how new information can be effectively organized, incorporated into structures, and taught so that it can be used. Meaningful learning occurs when students can connect new phenomena into their knowledge structure. Mind mapping learning is learning that links between concepts in learning, where in forming students' knowledge as a whole links between concepts based on the phenomenon being studied. Through mind mapping learning, students not only focus on strengthening cognitive aspects but also on students' attitudes in learning.

V.CONCLUSION

Learning does not only depend on cognitive enhancement of students, but also must be accompanied by changes in student attitudes. Changes in student attitudes are the result of a process of growth and development that must be maintained. Changes in student attitudes can be seen from the behavior of students in the teaching and learning process. This study has a research focus on the learning outcomes of student attitudes in learning. Based on the results of the study, it was found that mind mapping learning had a significant influence on the affective learning outcomes of students' attitudes in the learning process through binomial testing.

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