UTILIZATION OF MIND MAPPING LEARNING TO INCREASE THE RESULT OF STUDY GEOGRAPHY STUDENTS GRADE AT SMAN 1 GADINGREJO

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ABSTRACT

This research purpose to know : (1) Knowing the effect of using mind mapping learning to enhancement the result of the study in geography class at senior high school 1 Gadingrejo 2018/2019 Period. The result makes use of experiment method, this research using aggregate technic data random sampling with taking a sample of the basic on all class, each sampling unit as an element of the population which secluded have same opportunity to want to be sample or representation the population, after obtaining 2 class be resolved experiment class and control class, the population in this research 96 students class XI with student sample class XI social 2 as experiment class and XI IPS 1 as control class. The result this study affords of utilization mind mapping learning with indicators as : (1) there impact on mind mapping learning to the result of study geography students class XI social 2 at senior high school 1 Gadingrejo.

Penelitian ini bertujuan untuk mengetahui: (1) pengaruh penggunaan model pembelajaran mind mapping terhadap peningkatan hasil belajar siswa pada mata pelajaran geografi di SMA Negeri 1 Gadingrejo Tahun Ajaran 2018/2019. Penelitian ini menggunakan metode eksperimen yaitu penelitian yang dilakukan dengan memberikan perlakuan kepada kelompok eksperimen dan menyediakan kelompok kontrol sebagai pembanding. Penelitian ini adalah penelitian yang menggunakan random sampling dengan pengambilan sampel yang didasarkan pada semua kelas, dengan demikian setiap unit sampling sebagai unsur populasi yang terpencil memiliki peluang yang sama untuk menjadi sampel atau mewakili populasi, setelah diperoleh dua kelas maka ditentukan kelas eksperimen dan kelas kontrol, populasi dalam penelitian ini berjumlah 96 siswa kelas XI dengan sampel siswa kelas XI IPS 2 dan XI IPS1. Hasil penelitian menunjukkan penggunaan model pembelajaran mind mapping dengan indikator sebagai berikut : (1) Terdapat pengaruh pada model pembelajaran mind mapping terhadap hasil belajar geografi siswa kelas XI IPS 2 di SMA Negeri 1 Gadingrejo.

Introduction

The implementation of the education process is inseparable from the three main pillars, namely family, school, and community. Education is the main aspect in shaping the morale and character of a nation. Education is one of the places to give birth to a quality generation because education is placed as a foundation for realizing the vision of education and national development, namely empowering all Indonesian citizens so that they can develop into quality human beings who can compete and simultaneously respond to the challenges of the times and create society. have noble, moral, ethical, cultured, and civilized characters based on the philosophy of Pancasila.

In its implementation, education requires readiness, thoroughness, skill, tenacity, persistence, and excellent exemplary from both an educator and a student. The quality and success of learning in education are strongly influenced by the competence and accuracy of teachers in choosing and using methods or learning. Based on the results of observations and interviews with class XI geography subject teachers that were conducted at SMAN 1 Gadingrejo, it was found that student learning outcomes were still not optimal.in the learning process of geography on physical geography material, the simple recording model is still used in the learning process, and Mind Mapping learning has never been used when learning takes place, especially in geography subjects. Therefore, new motivation is needed to improve student learning outcomes, one of which can be done through improving learning in the classroom, namely mind mapping learning

Table 1.1 Student learning outcomes of class XI IPS in Geography subject at SMA Negeri 1 Gadingrejo 2017-2018

Theory	KKM	Class XI IPS			total	Percentage (%)	Ket
		XI IS1	**XI IS2**	**XI IS3**			
Indonesian Natural Resources	≥ 75	13	11	14	38	46.35%	Completed
	<75	15	16	13	44	53.65%	Not complete
	total	**28**	**27**	**27**	**82**	**100**	
Food security, energy sources, and industrial materials	≥ 75	20	18	19	57	69.52%	Completed
	<75	8	9	8	25	30.48%	Not complete
	total	**28**	**27**	**27**	**82**	**100**	
Democratic	≥ 75	15	12	14	41	50%	Completed
	<75	13	15	13	41	50%	Not complete
	total	**28**	**27**	**27**	**82**	**100**	
Indonesian Cultural Diversity	≥ 75	10	12	13	35	42.69%	Completed
	<75	18	15	14	47	57.31%	Not complete
	total	**28**	**27**	**27**	**82**	**100**	
Natural Disaster Mitigation	≥ 75	11	12	9	32	39.03%	Completed
	<75	17	15	18	50	60.97%	Not complete
	total	**28**	**27**	**27**	**82**	**100**	

Source: Documentation of SMA Negeri 1 Gadingrejo

Based on the data in the table above, it appears that the percentage of complete KKM learning outcomes in Indonesian Natural Resources, Food Security, Population, Population, Indonesian Cultural Diversity, and Natural Disaster Mitigation are respectively 46.35%, 69.52%, 50%, 42.69%, and 39.03%. The low learning outcomes of geography on natural disaster mitigation material are due to several factors, namely, the lack of teacher innovation in the learning process because the geography subject teacher in class XI at SMAN 1 Gadingrejo uses simple note-taking learning and tends to be passive towards students. Besides, the interactions during the learning process in the classroom do not run conducive because the teacher only provides material for a short time and then gives independent assignments to class XI students at SMAN 1 Gadingrejo.

Mind Mapping learning is a lesson developed by Tony Buzana, the head of the Brain Foundation. Mind maps are a creative note-taking method that makes it easy for us to remember a lot of information.

After completion, the notes are made to form a pattern of related ideas, with the main topic in the middle, while the subtopics and details become the branches. (According to Buzan (2011) in the Book of Social Studies Teaching Methods and Models, Abdul Aziz Wahab (2014).The advantage of Mind Mapping learning in quasi-experimental research is that it provides a comprehensive view of the subject matter or a large area that helps the brain to organize, remember, compare and make connections and allows students to plan routes or make choices. Mind Mapping learning is expected to improve student learning outcomes, especially in geography subjects. Basic competencies in the application of mind mapping learning in this natural disaster mitigation material are: Analyze types of natural disasters and manage natural disasters through education, local wisdom, and the use of modern technology.

And the competency standards in natural disaster mitigation materials with mind mapping learning are: Understanding the types and characteristics of natural disasters, understanding the cycle of disaster management. analyze the distribution of natural disaster-prone areas in Indonesia. identify institutions that play a role in natural disaster management, and explain community participation in natural disaster mitigation in Indonesia. Explain community participation in natural disaster mitigation in Indonesia. In its application, the process of learning geography at school still uses conventional learning, students only memorize the material that is informed by the teacher without being able to relate this information to the phenomena of everyday life so that students do not have the opportunity to be actively involved in the learning process. Meanwhile, the generation of students in the current era of globalization is expected to have the ability to understand concepts and be able to analyze arguments, ask questions, answer questions, interact with others, and make conclusions based on existing problems. To solve this problem the writer will experiment.

Experiments in scientific research are developmental experiments. Developmental experiments aim to “test, test, or prove a hypothesis or hypothesis about a causal relationship. To conclude with another formula, the general purpose of an experiment is to investigate the effect and condition of 'K' on a symptom of 'G'. in the field of education, for example, an experiment intends to assess the effect of educational activity on the nature of the state of children or to test hypotheses about the effect of that action. The term this action in the experiment is called treatment and is defined as all the variations in the action or condition that will be assessed for its effect. With the advantages that exist in mind mapping learning, the writer wants to prove and investigate the effect of this learning from field conditions and symptoms.

Method

The research method used in this study is a quasi-experiment (quasi-experimental) (Sugiyono, 2012: 79). This research was conducted by giving treatment to the experimental group and providing a control group as a comparison. The determination of this type of quasi-experimental research is because this research is in the form of educational research that uses humans as research subjects. Humans are not the same and are unstable. Therefore, the foreign variables that influence the treatment cannot be strictly controlled as desired in the pure experimental type of research. This design consists of two groups, each given a pretest and post-test. Tests carried out before treatment are called pretest and after treatment are called posttest. 1. Research design This study uses a Non-Equivalence Pretest-Posttest Control Group Design (Creswell, 1997). Inside there are steps that indicate a sequence of research activities, namely
:

Table 3.1 Research Design

Class	Pretest	Treatment	Postest
Experiment	O1	X1	O2
Control	O1	X2	O2

Source: Primary Data, 2018

O1 is a pretest given before treatment, O2 is a posttest given after treatment. (X1) is a treatment in the form of the application of mind mapping learning (X2) is conventional learning? Population and Research Sample. 1. Population
The population in this study were all class XI IPS students of SMA Negeri 1 Gadingrejo Pringsewu. A total of 96 students were divided into 3 classes.

Table 3.2 Population Data of Class XI IPS Students of SMA Negeri 1 Gadingrejo

No.	Class	total
1	XI IPS 1	33
2	XI IPS 2	32
3	XI IPS 3	32
	total	97

Source: Documentation of SMA Negeri 1 Gadingrejo

Sampling was done by using a random sampling technique. Random sampling is a sampling technique that is based on all classes so that each sampling unit as an element of a remote population has the same opportunity to become a sample or to represent the population. After obtaining two sample classes, the experimental class and the control class were determined. Based on this technique, it was found that class XI IPS 2 was an experimental class that used mind mapping learning, while the next class, namely XI IPS 1, was a control group that used conventional learning.

Table. 3.3. Data on sample members of class XI IPS 2 and XI IPS 1 SMA Negeri 1 Gadingrejo

No.	Class	total
1	Experiment: XI IPS 2	32
2	Control: XI IPS 1	33

Source: Primary Data, 2018

A. Types and Sources of Data

The type of data used in this research is primary data which is quantitative in nature and secondary data which is qualitative. Primary data, namely test results data before learning is applied (pretest), test results after learning are applied (posttest) students.

B. Research variable

According to Hatch and Farhady (1981) in Sugiyono (2012: 60), a variable can be defined as an attribute of a person or an object that has "variations" between one person and another or one object to another. Kerlinger (1973) in Sugiyono (2012: 61) states that variables are constructs or properties to be studied. The types of variables can be divided into three, namely:

1) The Independent variable (independent variable) is a variable that affects or does not cause changes or the emergence of the dependent variable. The independent variables in this study are the application of mind mapping learning and conventional learning models.
2) Dependent Variable (dependent variable) which is a variable that is affected or that is the result, because of the independent variable. The dependent variable in this study is student learning outcomes.
3) Intervening variables (intermediate variables) are variables that theoretically affect the relationship between the independent variable and the dependent variable into an indirect relationship that cannot be observed and measured. The intermediate variable in this study is the difference between conventional learning models and mind mapping learning.

Results and Discussion

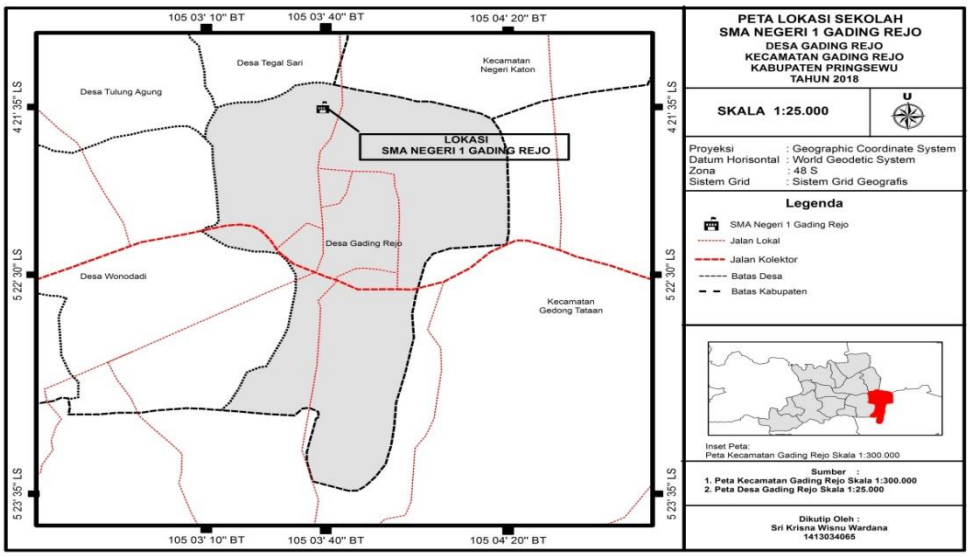
A. Brief History of SMAN 1 Gadingrejo

Gadingrejo 1 Public Senior High School or also known as SMANDING, is one of the public high schools in Indonesia Pringsewu County. This high school is located at Tegalsari Street No 001 Gadingrejo District, Pringsewu Regency. SMA Negeri 1 Gadingrejo is a public high school in Gadingrejo District, which was founded in 1984 on an area of 2.89 hectares with 7 units of buildings. Previously it was called Tegalsari Public High School, with the establishment decree Number: 1558 / D / 1984 on November 20, 1984, then in 1997 the name was changed to SMU Negeri 1 Gadingrejo, with the RI Minister of Education and Culture Decree Number: 035 / O / 1997 dated April 7, 1997.

Then in 2003, it changed back to SMA Negeri 1 Gadingrejo at the same time as the implementation of the Competency-Based Curriculum and Testing System (KSPBK) or the 2004 Curriculum for Class X Students at SMA Negeri 1 Gadingrejo. Since the 2006/2007 school year using the Education Unit Level Curriculum (KTSP) for grades X, XI, XII and becoming a National Standard School (SSN) then in TP 2007/2008, it became an RSBI school, on TP 2014/2015 SMAN 1 Gadingrejo used Curriculum 2013 and since the 2017/2018 school year implementing full-day school.

1. Location of SMAN 1 Gadingrejo

The location of the school is on Jalan Tegalsari No. 001 Gadingrejo District, Pringsewu Regency, which has a northern boundary bordering Katon District, the east is Pesawaran District, the South is bordered by Way Lima District, and the West is bordered by Pringsewu District.



Picture 1. Research Location Map

B. Research result

This chapter will present all the research results including instrument testing, data descriptions, analysis requirements testing, hypothesis testing, and discussion of research results on the variables studied.

The Research Process Schedule for the Application of Mind Mapping Learning at SMAN 1 Gadingrejo

Day and date	In the classroom	Information
Monday 4 March 2019	XI IPS 1 and XI IPS 2	Taking the Pre Test Score for 1.5 hours in each class
Tuesday 5 March 2019	XI IPS 2	Application of Mind Mapping Learning for 3 hours of lessons
Thursday 7 March 2019	XI IPS 1	Application of Conventional Learning in class XI IPS 1 For 3 hours of lessons
Tuesday 12 March 2019	XI IPS 2	Mind Mapping Learning Application for 1 hour and followed by posttest for 2 hours
Thursday, 14 March 2019	XI IPS 1	Application of Conventional Learning for 1 hour and followed by posttest for 2 hours

Table 4.7 normality test for the experimental class.

Interval	f0	fh	f0-fh	(f0-fh) 2	$\frac{(f0-fh)^2}{f_h}$
48-55	1	1	0	0	0
56-63	3	4	-1	1	0.25
64-71	6	11	-5	25	2.27
72-79	12	11	1	1	0.09
80-87	8	4	4	16	4
88-95	2	1	1	1	1
total	**32**				**7.61**

Source: Primary Data, 2020

$$\chi^2 = \sum \frac{(f_0 - f_h)^2}{f_h}$$

= 7.61

Table 4.9 normality test of the control class.

Interval	f0	fh	f0-fh	(f0-fh) 2	$\frac{(f0-fh)^2}{f_h}$
43-49	2	1	1	1	1
50-56	6	4	2	4	1
57-63	8	11	-3	9	0.82
64-70	8	12	-4	16	1.33
71-77	7	4	3	9	1
78-84	2	1	1	1	1
total	**33**				**7.40**

Source: Primary Data, 2020

$$\chi^2 = \sum \frac{(f_0 - f_h)^2}{f_h}$$

= 7.40

Furthermore, this value is consulted with the table value = 11.07χ^2Test Criteria Reject H0 if you calculate and accept H0 for another price. Because the table count thus H0 is accepted and H1 is rejected. Thus the data on student learning outcomes are normally distributed.$\chi^2 \geq \chi^2 \chi^2 < \chi^2$.

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Homogeneity Test Two-Variance Similarity Test H0: S_{12} = S22, the variants of both samples are homogeneous H1: $S_{12} \neq$ S22, The variant of the two samples is not homogeneous

Test statistics: F = $\frac{\text{High Varians}}{Low\ Varians}$ From the calculation results obtained: $\frac{95,09}{86,49} = 1,10$ Test criteria:

Reject H0 if Fcount Ftable and accept H0 for another price. From the calculation, it is found that Fcount = 1.10. Then the value of F count is consulted with the price of Ftable with degrees dk numerator = 32-1 = 31 for and dk denominator = 33-1 = 32 obtained Ftable = 1.82. Since Fcount Ftable, the two sample variances are homogeneous.

T-test, two-sided t-test Hypothesis FormulasH0:; there is no difference in the average learning outcomes of the experimental class and the control class$\overline{x_1} = \overline{x_2}$ H1:; there is a difference in the average learning outcomes of the experimental class and the control class$\overline{x_1} \neq \overline{x_2}$.

Information : $\overline{x_1}$: average learning outcomes of the experimental class using the Mind-mapping method $\overline{x_2}$average control class learning outcomes using the lecture method

Formula used

$$\text{t-count} = \frac{\overline{x_1} - \overline{x_2}}{S\sqrt{\frac{1}{n_1} + \frac{1}{n_2}}} \text{ with S2 } = \frac{(n-1)S_1^2 + (n-1)S_2^2}{(n_1 + n_2 - 2)}$$

Test Criteria. Accept H0 if t (1-1 / 2 α) t count. Reject H0 for another price. From the calculation results obtained tcount = 5.07. with a real level of 5% obtained t table = 1.671. Because t count t table, then rejects H0 and accept H1. Thus there is a difference in the average learning outcomes of the experimental class using the mind-mapping method and the learning outcomes of the control class using the lecture method.

One-party t-test. Hypothesis formula H0; The average learning outcomes of the experimental class are less than or equal to the control class$\overline{x_1} \leq \overline{x_2}$ H1; the average learning outcomes of the experimental class students are greater than the average learning outcomes of the control class$\overline{x_1} > \overline{x_2}$. Formula used

$$\text{t-count} = \frac{\overline{x_1} - \overline{x_2}}{S\sqrt{\frac{1}{n_1} + \frac{1}{n_2}}} \text{ with S2 } = \frac{(n-1)S_1^2 + (n-1)S_2^2}{(n_1 + n_2 - 2)}$$

From the results of the two-party t-test, calculations obtained S2 = 9.53 and tcount = 5.07. Test Criteria. Accept H0 if t count t table and accept another price. Based on the results of tcount obtained, then consulted with t table = 1.671. Because t count t table, then rejects H0 and accept H1. Thus the average learning outcomes of the experimental class is greater than the average learning outcomes of the control class.

At the time of research in the experimental class, mind-mapping learning was able to slowly increase creativity in students, because students participated in the learning process and developed student note-taking skills. Students begin to take notes using cardboard and carry colored pencils by making the main topic in the learning material, namely natural disaster mitigation in the middle of the mind mapping center and making a series of sequential patterns with the stages in natural disaster mitigation material, then students give decorations on each material object which is made in a circle by adding additional images, be it pictures of trees, clouds, cities, or interesting ornaments according to the students in practicing mind mapping in natural disaster mitigation materials.

There are several weaknesses of mind-mapping learning during the learning process, including it requires a lot of equipment that must be provided including cardboard, colored pencils, erasers, and markers, and there are some students who are less creative in taking notes so they join other students to imitate ideas mind mapping of other students. Things like this create a learning atmosphere that is fun, conducive, and creative so that students feel comfortable in the learning process and easily understand the material being taught in a structured manner. The use of mind mapping requires practice so that students are familiar and proficient.

In the application of mind mapping in class XI IPS 2, some students hesitate to write and draw so that the teacher encourages students to bring out the creative side of students so that students are more courageous in writing and making mind maps. Also, mind mapping in the manufacturing process takes a

long time if students are still in the beginner stage. Because the number of students in the class is quite large, some students have finished recording their mind mappings and some students have not finished taking notes.

The drawbacks of using mind mapping can be overcome by the teacher because the teacher has understood this mind mapping as a whole and its application in the learning process. In making it, the teacher also always guides students so that students do not feel difficult and feel more interested in making their mind maps with image objects that are by the ideas and fantasies of each student himself.

The application of mind-mapping learning provides a better change in student learning outcomes marked by an increase in student scores in class XI IPS 2 on natural disaster mitigation material which can significantly reach and exceed the completeness standards set by the teacher in natural disaster mitigation material, besides The use of mind-mapping has many advantages, among others, inviting students to be creative in the learning process, besides that mind-mapping learning can improve students' memory because students understand the material in a structured manner, therefore students find it easier to understand the material during the learning process.

Another advantage is that the notes focus more on the core material, in making mind mapping, not all the material provided by the teacher will be recorded by students, but only the core or important parts of the material. Also, through mind mapping, a lot of material can be presented on only one sheet of paper, so that reviewing the material becomes faster and easier.

This is by the opinion of Buzan (2005: 6) regarding the advantages of mind-mapping learning, namely, provides a clear picture of the whole and in detail, allows grouping concepts and helps to compare them, focuses attention on subjects that help shift information about them and short-term memory to long-term memory. Mind mapping develops divergent ways of thinking and is the easiest way to place information in the brain.

Based on the results of the data analysis that has been carried out, there is an increase in the average learning outcomes of students using mind-mapping learning, so it can be concluded that mind-mapping learning affects student learning outcomes in geography subjects with natural disaster mitigation material. From the calculation of research data, it shows that the average geography learning outcomes of students whose learners use mind-mapping learning is higher than the average geography learning outcomes of students whose learners use the lecture learning method on natural disaster mitigation material. It can be concluded that mind-mapping learning has a positive effect on student learning outcomes.

Conclusion

Based on the results of the research and the results of hypothesis testing, it can be concluded that there is an effect of using mind mapping learning on students' geography learning outcomes at SMAN 1 Gadingrejo. The effect of using mind mapping directly will provide a difference between mind mapping learning and the use of conventional learning models.

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Thank you to the beloved alma mater, the University of Lampung for the knowledge that has been given so that I can finish this article well. I hereby declare that the article entitled "The Use of Mind Mapping Learning to Improve Geography Learning Outcomes at SMAN 1 Gadingrejo" no work has ever been submitted to obtain a bachelor's degree at a university and to my knowledge, there are also no works or opinions that have been written. or published by other people, except those in writing which are referred to in the text and mentioned in the bibliography.

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