The Effect of Mind Mapping Learning Methods on Social Studies Materials Comprehension of Students

Firda Ratna Dila
Social Studies Education Study Program, Faculty of Social Sciences Education,
Universitas Pendidikan Indonesia, Bandung,

Abstract. This study aims to examine the effect of mind mapping learning methods on social studies materials comprehension of students at Baleendah 2nd Junior High School. This study used a quasi-experimental method with the design of "nonequivalent control group design" with the pattern of "pretest" and "posttest" and carried out treatments in class VIII-F as the experimental class group and VIII-H as the control group used as a comparison. Sampling uses a purposive sampling technique. Data collection on the social studies material comprehension of students use questions as the main data. After the data is collected, the analysis is carried out quantitatively through hypothesis testing or T-Test. The results of the difference between "pretest" and "posttest" in the experimental class given treatment showed a significant difference in improvement, while the control class between "pretest" and "posttest" which were not given treatment the results were no difference or no improvement. It can be said that there are influences from mind mapping learning methods to on social studies materials comprehension of students.

Keywords: comprehension of material, mind mapping learning method, social studies learning
Correspondence. firdaratnadila@student.upi.edu
Article History. Received January 2019, Received in revised March 2019, Accepted June 2019

A. INTRODUCTION

Currently the development of science and technology is increasingly rapid and able to make changes to human life. Science and technology can be better developed as long as Human Resources (HR) are able to be maximized in today's capacity. By living in this modern age which has many challenges and changes, the quality of its human resources needs to be improved. One tool that can improve human resources to be better in this day and age is education. Educational goals according to UNESCO in an effort to improve the quality of a nation, there is no other way except through improving the quality of education.

According to Law No. 20 of 2003 Education is a conscious and planned effort to create a learning atmosphere and learning process so that students actively develop their potential to have religious spiritual strength, self-control, personality, intelligence, noble character, and skills needed by themselves, society, nation and country. Education is needed for every country in the world, because with the existence of quality education a country will experience progress. Therefore without quality education, the younger generation or the next generation will be left behind by the development of the times and the country will experience a setback.

That way education is needed to develop quality human resources. In order to develop the potential that exists within him for his needs, society, nation and country. Humans who live in this modern age must have various skills to be able to keep up with the rapid changes and progress that they are today, so that they are not left behind by the times.

National Education System Law No. 20 of 2003, stated that the objectives of national education are

> educate the nation's life and develop Indonesian people as a whole, namely humans who fear God Almighty and noble character, possess knowledge and skills, physical and spiritual health, a solid

> and independent personality and social and national responsibility (National Education System Law: 2003).

Therefore to achieve national education goals, the role of educators in schools is very important to shape the character of students. It is a challenge for educators to carry out innovations in learning activities. For an educator the achievement of learning goals is what is desired.

The problem was faced by educators today is how students can master the material that has been delivered. Or at least students understand the material that has been delivered by educators. This is a problem faced by educators in learning activities. Because students have different characters make educators have to make learning activities that are innovative so that students are able to achieve learning objectives and national education goals.

In the learning process, educator must be more contextual rather than just transfer learning material to students only. But associating with problems or events that exist around the environment of students, so that learning is more meaningful for students. Because the learning process is more important than learning outcomes. So that students better understand the social studies learning material and apply it to everyday life. The improvement of this learning activity is to change the teaching method of educators who used to teach with conventional methods to be innovative and creative learning methods.

The method is a tool in learning activities that will help educators in delivering learning material. By choosing the right method of learning by educators, the learning objectives will be achieved. Learning methods are very diverse and their use is in accordance with class conditions and the conditions of students. Not all learning methods can be used, or in other words depending on the problems faced by educators in learning activities. With the learning method, students are required to apply their knowledge and experience to solve problems, so students will think to express their opinions.

Inappropriate learning methods will affect the understanding of students' material, which will make the learning process boring and affect learning outcomes. In this 2013 curriculum, learning activities are more student-centered than educators. Especially in social studies learning which is expected to gain an understanding of a number of concepts and develop attitudes, values, morals and skills based on the concepts that have been owned by students. As Sudjana (in Primadita, H, 2016, page. 78-87) said that 'the use of teaching media is not only a tool for entertainers, but as a tool in delivering the learning process in the classroom so that it is more interesting and easy to understand'.

Understanding of material is very important in learning activities, especially in social studies learning. According to Winkel and Mukhtar (Sudaryono, 2012, p. 44), understanding is a person's ability to grasp the meaning and meaning of the material being studied, which is expressed by describing the main contents of a reading or changing the data presented in certain forms to other forms. This can provide opportunities for students to learn to think, memorize, appreciate skill and be creative in understanding social studies learning material.

The ultimate organizational thinking tool, the way to put information into our brain and take information out of our brain. It is creative and effective means of note taking that literally "Maps out" your thought (Tony Buzan in Teacher-Centered Mind Mapping vs.

Student-Centered Mind Mapping in the Teaching of Accounting at Pre-U Level - An Action Research). Then according to Sugiarto (2004, p. 75) that mind Mapping is a learning method that is very well used by teachers to improve students 'memorization and understanding students' strong concepts, students can also increase their creativity through freedom of imagination. The same as said by Faisal, B. N (2017, page. 38), "While Mind Mapping is a way of recording a creative and effective, easy way to enter and release information in the brain that suits the workings of the brain".

Therefore the Mind Mapping learning method is very helpful for students in recording social studies learning materials creatively and effectively. Compared to just taking ordinary notes. Mapping learning method, understanding social studies learning material of students can increase and make the learning process even better. As Erlandini (2017, page 64), "Then when students following social studies lesson in the class, student do not feel saturated, the material that was delivered especially in learning social studies containing various the concept can be good understanding and the objectives of sosial learning can be full achieved". Then the research method of Mind Mapping aims to change the learning methods accepted by students in the hope that the use of the Mind Mapping learning model will trigger students' interest and attention to learn social studies material in the classroom.

This study has the purpose, first finding out and analyzing differences in the improvement of students' understanding of the material between the pretest and posttest using the Mind Mapping learning method in social studies learning in the experimental class. Second is to find out and analyze the differences in improving the students' understanding of the material between the pretest and posttest by using conventional learning methods in social studies learning in the control class. Third, to find out and analyze significant differences in students' understanding of the material between the pretest and posttest in the experimental class by using the Mind Mapping learning method in social studies learning with the control class that uses conventional learning methods in social studies learning.

B. METHODS

The research method used in this study is the quasi-experimental method using the nonequivalent control group design. According to Sunarti (2009, p. 95), "the experimental method is a research method that tests the hypothesis in the form of a causal relationship through manipulating independent variables and testing changes caused by the manipulation". That is the reason for the researchers to choose nonequivalent control group design, which is to find out how effective of mind mapping learning methods on social studies materials comprehension of students at Baleendah 2nd Junior High School. The research patterns for nonequivalent control group design are as follows.

Table 1. *Nonequivalent control group design*

Group	Pretest	Treatment	Posttest
Experiment	O^1	X^1	O^3
Control	O^2	X^2	O^4

The population in this study were all eighth grade students at Baleendah 2nd Junior High School 2018/2019 academic year. Determination of the sample in this study is to use purposive sample technique. Arikunto (2013, p. 183) says that "the sample is intended to be done by taking the subject rather than based on random strata or regions but based on the

existence of certain objectives. The sample in this study were two classes with a total of 76 students, consisting of 43 male students and 33 female students.

The main data collection in this study used a questionnaire using a Likert scale. While supporting data and reinforcement in this study is documentation. After collecting data, the researcher then processed the data quantitatively. First, look at the questionnaire data by testing the validity and reliability test. If the instrument has been declared valid and reliable, then the data can be directly distributed to the research sample. Both process data using data properties test and hypothesis test. All data is processed using SPSS Statistics version 23 and Microsoft Excel applications.

This was done to see the difference in material comprehension of students between before and after treatment in the experimental class using the Mind Mapping learning method in social studies learning with a control class that uses conventional learning methods in social studies learning. Nature test of the data carried out to find out the nature of the data comprehension material students of class VIII-F and VIII-H at Baleendah 2nd Junior High School obtained from the results of the study. Nature test of this data needs to be done before hypothesis testing. Nature test of the data consists of normality test and homogeneity test. The normality test is the test of the nature data which has the purpose of ensuring that the results of the data on students' abilities have a normal distribution. Normality test consisted of pretest normality test and posttest normality test. While the homogeneity test is the test of the nature of the data whose purpose is to determine whether or not homogeneous variations in data. The homogeneity test steps are calculating the variation of the initial test and the final test, calculating the price of variation, calculating the degree of freedom, determining the price, and determining whether or not the data is homogeneous.

The last data analysis technique is hypothesis test, carried out hypothesis testing steps, is calculating the mean, calculating the degree of freedom, calculating the number of squares of deviations, calculating t, and determining whether or not hypotheses are based on the criteria below.

1) If Sig. (2-tailed)> 0.05, meaning the hypothesis is accepted. So there are differences in material understanding of students between the pretest and posttest in the experimental class using the Mind Mapping learning method in social studies learning with the control class that uses conventional learning methods in social studies learning.
2) If Sig. (2-tailed) <0.05, meaning the hypothesis is rejected. So there is no difference in the understanding of material students between the pretest and posttest in the experimental class using the Mind Mapping learning method in social studies learning with the control class that uses conventional learning methods in social studies learning.

C. RESULTS AND DISCUSSION

The results and discussion in this study are to describe and see differences in material comprehension of students between the pretest and posttest in the experimental class using the Mind Mapping learning method in social studies learning with the control class that uses conventional learning methods in social studies learning. The results of the normality test data analysis showed that the pretest and posttest data were normally distributed with a 95%

confidence level. After looking at normal distribution tests that are normally distributed, the homogeneity test also shows a homogeneous data variant with a confidence level of 95%.

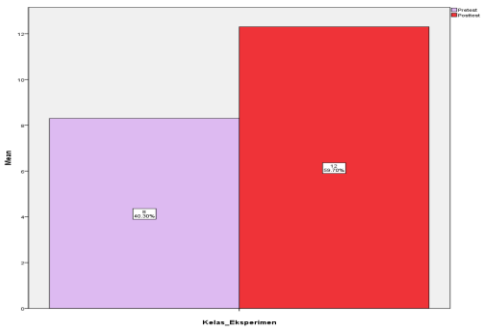
This can be concluded after the normality and homogeneity tests have been carried out, the data are normal and homogeneous. As for the hypothesis testing, the data showed a difference between the pretest and posttest in the experimental class using the Mind Mapping learning method in social studies learning by obtaining the results of 40.30% and 59.7%. While for the pretest and posttest in the control class using conventional learning methods in social studies learning, there was no difference by obtaining the results of 49.93% for the pretest and 50.03% for the posttest. The results of these studies can be seen in the discussion below.

1. Comprehension of Social Studies Materials between Pretest and Posttest by Using Mind Mapping Learning Methods in Experimental Classes

At present the teaching-centered learning method is still the favorite learning method applied in the classroom and makes students inactive and difficult to understand the subject matter. The educator is one of the factors that plays an important role in developing student achievement. The teacher is the guide in the occurrence of learning experiences, the teacher is not the only source of information (Dimyati, 1999, p. 120).

The selection of learning methods must also be considered by educators, because the applied learning must be meaningful for students. Inappropriate learning methods will affect the comprehension of students' material, which will make the learning process boring and affect learning outcomes. Understanding of material is very important in learning activities, especially in social studies learning. According to Winkel and Mukhtar (in Sudaryono, 2012, p. 44), comprehension is the ability of a person to grasp the meaning and meaning of the material being studied, which is expressed by describing the main contents of a reading or changing the data presented in a certain form to a form other'. So from that the students are required to capture the meaning of giving material from educators and mind mapping methods are expected to be more meaningful learning for students. This can provide opportunities for students to learn to think, memorize, appreciate skill and be creative in understanding social studies learning material.

Based on the data understanding of the material from the SPSS version 23 test through paired samples test techniques in understanding students' material after the pretest and posttest in the experimental class with the value of sig (2-tailed) 0,000 smaller than the value α = 0.05, it means that Ho is rejected so it can be concluded that there is an increase in understanding of the material after the pretest and posttest in the experimental class using mind mapping learning methods. The results can be seen in the following graph:



Graph 1. Average Understanding of Student Materials After the Pretest and Posttest in the Experimental Class

The above graph is processed through the results of the t-test on SPSS

version 23, which shows the results of the average measurement of materipretest and posttest understanding in the experimental class. Based on the graph, it can be seen in percentage, there is an increase of around 19.4%. At the pretest in the experimental class had an average of 40.30%, while the posttest in the experimental class had an average of 59.70%. It can be seen the difference in material comprehension of students in the experimental class after the pretest and posttest. The improvement of mind mapping learning methods for students' understanding of material is caused by the characteristics of the mind mapping learning method itself, where in addition to increasing memorization and understanding of strong concepts, students can also increase their creativity through freedom of imagination. Therefore the Mind Mapping learning method is very helpful for students in recording social studies learning material creatively and effectively. Compared to just taking ordinary notes. That way students can process information well, connect concepts and make understanding social studies learning material easy to understand and understand.

The findings in the field regarding the material comprehension of students in social studies learning, the application of mind mapping learning methods can make students develop ideas and better understand the material to be delivered. Students are also able to sort out the information conveyed in the subject matter, so that they do not swallow all information entered from a subject matter. Mind mapping is also able to express students' expressions and thoughts on a subject matter. It is also in accordance with the opinion of Buzan (2013, p. 4) which says that "mind mapping is a creative, effective way of recording and will literally" map "our thoughts". Mind mapping is able to store information and remember information easily. Compared with the conventional or traditional recording method, which makes it very difficult for students to understand the material that has been delivered by educators. Because the mind mapping learning method is developed according to the way the human brain works. Kurniawati (2010, p. 23) reveals the advantages of mind mapping learning methods, which can express opinions freely, can cooperate with other friends, denser and clearer notes, easier to find notes if needed, notes are more focused on the core material, easy to see the picture whole; helps the Brain to: regulate, remember, compare and make connections; facilitate the addition of new information; the review can be faster, and each map is unique.

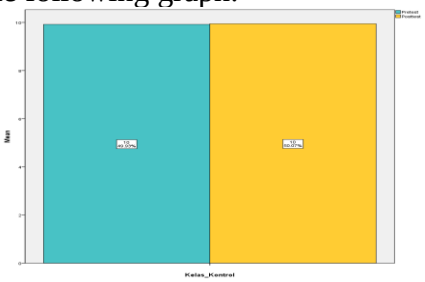
The average increase from pretest to posttest is due to treatment, which is the delivery of material using mind mapping learning methods that focus on the learning process based on students. This learning requires that students be able to develop the ability to sort information, remember material, imagine, control thoughts, interest in learning and be able to make students more creative.

2. Comprehension of Social Studies Materials between Pretest and Posttest by Using Conventional Learning Methods in the Control Class

Learning method is one of the six components of learning that need to be considered by educators to achieve learning goals. Because the presence of students is not merely a formality as a complement in learning, but more than that students are required to actively participate in learning.

Based on the understanding of the material from the SPSS version 23 test

through paired samples test techniques in understanding students' material after the pretest and posttest in the control class with a sig (2-tailed) value of 0.925 greater than the value of α = 0.05, it means that Ho is accepted it was concluded that there was no increase in understanding of the material after the prestest and posttest in the control class using conventional learning methods. The results can be seen in the following graph:



Graph 2. Comprehension Average of Student Materials After Pretest and Posttest in the Control Class

The above graph is processed through the results of the t-test on SPSS version 23, which shows the results of the average comprehension of the pretest and posttest in the control class. Based on the graph, it can be seen as a percentage showing the same results, no increase in pretest in the control class has an average of 49.93%, whereas in the posttest in the control class has an average of 50.07%. It can be seen that there is no difference in material understanding of students in the control class after the pretest and posttest that used a conventional learning model there was no improvement. The influence of conventional learning on comprehension students' material is caused by the characteristics of conventional learning which tends to be one-way, which is only centered on educators.

The research findings above are in line with social studies learning carried out by teachers in the classroom. In learning, students are not given the opportunity to move in class. More often students are only asked to do assignments without being accompanied by the teacher. As was said by Setyawati, et al. (2016, p. 72) that,

> Social studies learning shows an indication that the learning patterns developed by teachers tend to be textbook oriented. As a result, this learning pattern causes students to be bored, students are not taught to think logically only concerned with understanding and memorization. This makes social studies learning less popular with many students, social studies learning does not seem attractive to students because of its broad scope ... Students consider social studies is a monotonous and less varied lesson.

The control class that is the comparative class in the learning process is not given special treatment and it turns out that the students' learning outcomes and interest are less visible and the conditions of students in the class tend to be passive. This is because in learning educators use conventional learning methods that make students silent and only listen to what is explained or said by the teacher. So that students' material understanding is also low.

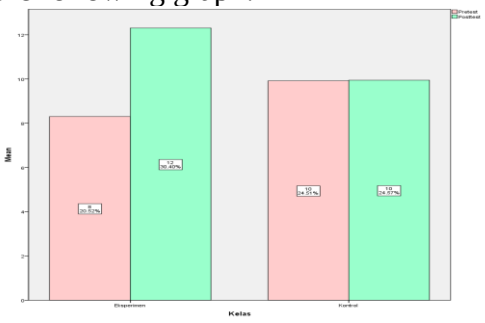
3. Differences in Comprehension of Social Studies Materials between Pretest and Posttest in Experimental Classes and Control Classes

Education is a tool used to stimulate the development of the quality of human life. The characteristics of different students make educators must be able to make innovative learning activities so that learning objectives can be achieved. Learning is not only as a process of transferring learning material from educators to students only. More

than that educators must be able to associate material with problems or events that are around the environment of students, so that learning is more meaningful and students better understand what material they get in learning. Students are required to be able to understand the subject matter that has been delivered by the educator, not just knowing what is explained by the educator, but knowing more in the subject matter being taught. So that the subject matter delivered by educators will be stored for a long time in the brain by students and the most important thing is that students are able to explain the subject matter that has been learned by using their own language. Like what Yamin (2007, p. 6) said, "understanding is related to competence to explain knowledge that has been known in its own words".

Therefor educator must be able to choose the right learning method so that the delivery of material can be absorbed and understood by students and can achieve learning goals. The purpose of social studies is to develop students' thinking skills in digesting social studies learning material that has been given by educators to be able to apply and implement in the daily lives of students. One learning method that can improve students' understanding in social studies learning is mind mapping. According to Eric Jensen (2002, p. 95), mind mapping is very useful for understanding the material, especially the material that has been received by students in the learning process. Mind mapping aims to make patterned subject matter visually and graphically which can ultimately help record, strengthen, and recall information that has been learned.

Based on the test results from SPSS 23 through the Independent Samples Test technique in measuring material understanding of students in the experimental class and control class with sig (2-tailed) pretest in the experimental class and Equal Variances Assumed control classes both showed 0.001 and 0.002, meaning more big from the value of $\alpha = 0.05$, meaning that Ho is rejected. In the posttest in the experimental class and the control class based on Equal Variances Assumed both showed 0,000, meaning that it was smaller than the value of $\alpha = 0.05$, meaning Ho was rejected. Based on these data it can be concluded that there are differences in pretest and posttest in the experimental class and the control class. The results can be seen in the following graph:



Graph 3. Comprehension Average of Student Materials between Pretest and Posttest in Experiment Class and Control Class

Based on the graph above, it can be seen that there are differences. This difference can be seen from the increase in the average value after the pretest and posttest in the experimental class and there was no increase in the control class. Pretest comprehension material of students in the experimental class was 20.52% and increased in the posttest by 9.88% to 30.40%. Whereas for the control class the understanding of the pretest and posttest material did not change, which was 24.51% for the pretest and 24.57% for the posttest.

This shows that the use of mind mapping learning methods can improve students' comprehension of the material. In addition, the application of mind mapping learning methods is able to encourage students to develop the ability

to sort information, remember material, imagine, control thoughts, interest in learning and be able to make students more creative. This was also stated by Olivia (2014, p. 67) who said that "the method of mind mapping learning is right for dealing with a lot of reading or material into one easy-to-read and practical summary sheet". For example, Social studies learning material about the history of the events of the Wars that occurred in Indonesia, one of which is the Diponegoro War which has quite a lot of material, so educators summarize it on one sheet of paper containing mind mapping. In addition, Mar'atus Sholihah (2015) also said the same thing in his research which showed results, namely "Mind Mapping learning model as one of the alternatives in classroom learning to improve creativity and student learning outcomes".

In addition, students in the experimental class are able to translate, interpret and extrapolate social studies learning so that the understanding of social studies material has begun to be mastered by students in the experimental class compared to students in the control class in social studies learning. In learning activities students in the experimental class are able to change the language delivered by educators with the language they use. Then they are able to connect different concepts in learning about interactions between ASEAN countries, and students are able to deduce the material that has been discussed by educators in social studies learning activities.

Based on the description above, it can be said that the activities in the experimental class and the control class showed a different understanding of the material in social studies. In the experimental class, it was clear that students' understanding of the material was higher than the students in the control class. It can be concluded that the mind mapping learning method makes it easier for students to understand the subject matter that has been delivered by educators. Especially in social studies learning which is synonymous with memorization and a lot of material compared to other subjects. With conventional learning methods make students bored in taking social studies and result in a lack of comprehension of social studies learning material for students.

CONCLUSION

Based on the results of a quasi-experimental study conducted in class VIII Baleendah 2nd Junior High School, it was found that there was a difference in the material comprehension of students in social studies. The study was conducted in the experimental class using mind mapping learning methods and control classes using conventional learning methods. Material comprehension has different levels, especially those found in the experimental class and the control class at Baleendah 2nd Junior High School. Based on the results of data analysis findings and discussion, the researchers took several conclusions in this study.

There was an increase in students' comprehension of the material between the pretest and posttest using the mind mapping learning method in the experimental class. Through paired samples test techniques in understanding the material of students after the pretest and posttest in the experimental class , so it can be concluded that there is an increase in comprehension social studies learning material after pretest and posttest in the experimental class using mind mapping learning methods. With a pretest percentage of 40.30% and posttest 59.70% with a difference of 19.40%.

Then there is no increase in students' comprehension of the material

between the pretest and posttest of conventional learning in the control class. Through paired samples test techniques in understanding the material of students after the pretest and posttest in the control class, so that it can be concluded that there is no increase in understanding of material after the prestest and posttest in the control class using conventional learning methods. With a percentage before treatment 49.93% and after treatment 50.07%.

There is a difference between the increase in students comprehension of the material between the pretest and posttest by using the mind mapping learning method in the experimental class and an increase in students' comprehension of the material between the pretest and posttest with conventional learning in the control class. Based on data it can be concluded that there are significant differences in the increase in students' comprehension, between the pretest and posttest in the experimental class using mind mapping learning methods with the control class using conventional learning methods in social studies learning.

D. ACKNOWLEDGEMENT

To the Social Sciences Education Study Program, Faculty of Social Sciences Education, Universitas Pendidikan Indonesia for the publication of this article in the journal Social Studies Education Study Program.

REFERENCES

Arikunto, S. (2013). Prosedur Penelitian. Jakarta: Rineka Cipta.

Buzan, T. (2013). Buku Pintar Mind Map. Alih Bahasa Susi Purwoko. Jakarta : PT Gramedia Pustaka Utama .

Dimyanti, M. (1999). Belajar dan Pembelajaran. Jakarta: PT Rineka Cipta.

Jensen, E., & Makowitz, K. (2002). Otak Sejuta Gygabite: Buku Pintar Membangun Ingatan Super. Bandung: Kaifa.

Kurniawati, D. (2010). Pengaruh Metode Mind Mapping dan Keaktifan Belajar Siswa terhadap Prestasi Belajar Ilmu Pengetahuan Sosial pada Siswa Kelas VIII SMP Muhammadiyah 5 Surakarta Tahun Ajaran 2009-2010. Surakarta: UMS Surakarta.

Olivia, F. (2014). 5-7 Menit Asyik Mind Mapping Pelajaran Sekolah. Jakarta : PT Alex Media Komputindo.

Setyawati, T., Fauzi, A., & Mahdi. (2016, Desember). Upaya Guru IPS dalam Peningkatan Aktivitas dan Hasil Belajar Siswa dengan Menggunakan Model Pembelajaran Berbasis Proyek di SMPN 3 Cilimus Kabupaten Kuningan. Jurnal Edueksos, V (2), 171-185.

Solihah, M. (2015). Penerapan Model Pembelajaran Mind Mapping untuk meningkatkan kreativitas dan hasil belajar siswa pada mata pelajaran ekonomi kelas X IPS di SMA Negeri 8 Malang . Malang .

Sudaryono. (2012). Dasar-dasar Evaluasi Pembelajaran . Yogyakarta: Graha Ilmu .

Sugiarto, I. (2004). Mengoptimalkan Daya Kerja Otak dengan Berfikir Holistik dan Kreatif . Jakarta: PT Gramedia .

Sunarti. (2009). Metode-metode Penelitian. Bandung : Alfabeta .

Yamin, M. (2007). Profesionalisasi Guru dan Implementasi KTSP . Jakarta : Gaung Persada Press.