

Improving Concepts Understanding in Social Studies through Mind Mapping

Aningsih¹, Rima Rikmasari², Yudi Budianti², Lelly Ratna Qodariyah³, and Jaka Waluya⁴

¹Faculty of Teachers Training and Education, Universitas Islam 45, Cut Meutia No. 83, City of Bekasi, Indonesia

²Departement of Primary School Teacher Education, Universitas Islam 45

³Departement of Geography Education, Universitas Islam 45

⁴Departement of Primary School Teacher Education, Universitas Islam 45

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Abstract: This research was motivated by the lack of students' concepts understanding in Social Studies. The purpose of this study was to improve concepts understanding in Social Studies through mind mapping. This research method was Classroom Action Research. This study was carried out in three cycles, each cycle including the stages of planning, action, observation and reflection. Data collection techniques use written tests and observations. Data analysis techniques use these steps: manage raw data, present the data, draw conclusion, and reflect. Based on the results of research that has been obtained in Cycle I, classical completeness was 64% with an average score of 69.3. In Cycle II, classical completeness increased to 76% with an average score of 76.5, and in Cycle III, classical completeness increased to 84% with an average score of 82.4. Thus, it can be concluded that mind mapping could improve students' concepts understanding in Social Studies. Mind mapping made students easily in explaining concepts, identifying or providing examples of concepts, comparing concepts with other concept, and inferring concepts.

1 INTRODUCTION

Social Studies is an integrated study material which is simplification, adaptation, selection and modification of the concepts of geography, history, anthropology, sociology and economics. Social Studies is one of the subjects given in elementary schools which are designed to develop knowledge, understanding, analytical skills and sensitivity to social problems that occur in the community, have a positive mental attitude to overcome any inequalities that occur, and are skilled at overcoming any problems, both those that befall themselves and society.

In the Level of Education Curriculum Unit (2016) it is stated that the objectives of Social Studies are to: (a) recognize concepts related to the life of the community and its environment; (b) has the basic ability to think logically and critically, curiosity, inquiry, problem solving, and skills in social life; (c) have commitment and awareness of social and human values; and (d) having the ability to communicate, cooperate and compete in a pluralistic society, at the local, national and international levels.

Based on the formulation of these objectives, the understanding of concepts is the first thing that students must master as a basis for developing higher abilities. Anderson et al (2014) divided seven categories of cognitive processes to understand namely: 1) Interpret, which is changing information from one form to another. 2) Provide examples of general concepts or principles. 3) Classify, which is knowing that something is included in certain categories such as concepts or principles. 4) Summarizing, namely proposing a sentence that represents information received or abstracts a theme. 5) Summing up, which includes the process of finding patterns in a number of examples. 6) Comparing, which involves the process of detecting similarities and differences between two or more objects, events, ideas, problems, or situations. 7) Explain, namely making and using a causal model in a system.

According to Jihad (2013), understanding of concepts is a competency shown by students in understanding concepts and in performing procedures (algorithms) flexibly, accurately, efficiently and precisely. Eggen and Kauchak (2012) stated that

understanding of concepts can be measured in four ways, namely defining concepts, identifying characteristics of concepts, identifying or providing examples of concepts that have never been met before, and connecting concepts with other concepts.

Based on preliminary observations in fifth grade of Bani Saleh 2 Elementary School, it could be identified that students were less able to explain the concepts, identify or provide examples other than examples given by the teacher, comparing concepts with other concepts and concluding the concepts that have been learned. Based on the identification of these problems, it can be concluded that students' concept understanding was very low. These problems must be addressed immediately because understanding concepts is the basis for achieving higher abilities.

Concepts on Social Studies in Elementary School including (1) Human, Place and Environment, (2). Time, Sustainability and Change, (3) Social and Cultural Systems, and (4) Economic Behavior and Welfare. (Content Standard, 2016). Various learning methods and techniques are studied to enable the abstract concepts to be understood by the child. The introduction of concepts in Social Studies must be done by linking concepts from one subject matter to another subject matter so that the learning process must be directed also to a process of changing student behavior. With the association of the concept of the subject matter, students are able to develop the material that has been given previously by the teacher.

To overcome the problem of students' concept understanding, one solution that can be used is to use learning methods that can organize ideas and develop students' thinking skills, one of which is mind mapping. Buzan (1993) described mind mapping as "a powerful graphic technique which provides a universal key to unlocking the potential of the brain." He has championed mind maps for studying, remembering and learning. The essential elements of any mind map are (1) a main topic represented with a central image; (2) important themes radiating from the central image as branches; (3) branches comprised of a key image or keyword printed on an associated line to a connected nodal structure and (4) the incorporation of color to clarify or emphasize connections. The method mind mapping relates to the optimization of the memory of students and the ability to understand the concept of a material through recording activities, therefore students can explore and express their ideas as a form of active participation in classroom learning activities. The use of mind mapping in the learning of Social Studies

aims to direct students in storing learning materials in Social Studies into their brain memory to be more directed and well organized so that it will make it easier to understand a subject matter.

Previous studies on the use of mind mapping in learning have been carried out in various countries, as has been done by Al Jarf (2011), Adodo (2013), Fiktorius, (2013), Balim (2013), Buran & Filyukov (2015), Rosciano (2015) Ravindranath, de Abrew, & Nadarajah (2016), Parikh (2016), and Merchie & Van Keer (2016). These studies found that mind mapping is an innovative and effective method to facilitate student learning. Unlike traditional teaching in classes, visualizing ideas through mind mapping help students to think better and separate complex problems into simpler topics. It helps students to understand and analyze ideas through visual elements to categorize it such as, upper and lower case, keywords, colors, symbols, codes and images. It is considered to be up-to-date, creative, useful and available tools for students, educators and researchers.

The purpose of this study was to improve students' concepts understanding in Social Studies through mind mapping. The results of this study can be used as consideration for teachers to manage classes and organize learning materials and improve the quality and learning outcomes, especially in improving students' concepts understanding.

2 LITERATURE REVIEW

Social Studies is a subject that examines a set of events, facts, concepts, and generalizations relating to social and citizenship issues. Therefore, one of the objectives of IPS is that students have the ability to understand concepts related to people's lives and their environment, explain the interrelation between concepts and apply concepts flexibly and precisely in problem solving. Understanding concepts in Social Studies is very important because with the ability to understand the concepts in social studies are good and right, students are expected to develop and train attitudes, values, morals, and skills that are useful for themselves, society and the country based on the concepts that have been it has.

2.1 Concept Understanding

Understanding is one's ability to understand or understand something. In other words, understanding is knowing about something and can see it in various aspects. Someone is said to understand something if he can provide an explanation and imitate it by using his own words. Anderson et al. (2014) stated that understanding is defined as constructing the meaning of instructional messages, including oral, written, and graphic communication. This opinion explains that a person is said to understand something if they are able to construct the meaning of teaching messages such as oral communication, writing, and graphics. A person is able to understand a new knowledge when he is able to build a relationship between the newly integrated knowledge and the cognitive scheme that already exists in him.

Understanding consists of seven types, namely interpreting, exemplifying, classifying, summarizing, inferring, comparing, and explaining. The seven types of understanding are explained as follows: 1) Interpreting occurs when students are able to convert information from one representation to another. Interpretation includes the conversion of words into words, images into words, and so on; 2) Exemplifying occurs when students are able to provide specific examples or examples of general concepts or principles. Exemplifying involves finding the characteristics of a general concept or principle; 3) Classifying occurs when students recognize that something (a particular instance or event) belongs to a particular category (eg concept or principle). Classifying includes the discovery of relevant characteristics or patterns, which match specific examples and concepts or principles; 4) Summarizing occurs when students are able to propose a single statement that represents the presentation of information or a summary of a general theme. Summarizing includes the construction of an information representation, making a summary, such as determining the main theme or topic; 5) Inferring, including finding patterns and a series of examples or events. Summing up occurs when students are able to summarize concepts or principles which consist of a series of examples or events through coding the relevant characteristics of each event; 6) Comparing occurs when students find similarities and differences between two or more objects, events, problems, or situations; and 7) Explaining occurs when students are able to build and use a causal model of a system. Models can be derived from formal theories, or can be based on research or experience. A complete explanation involves constructing a causal

model, including every major part of the system or every major event in a series, and using a model to determine changes in one part of the system or relationship in a series that affect changes in other parts.

Rosser in Sagala (2014) stated that concepts are "an abstraction that represents a class of objects, events, activities, or relationships that have the same attributes". People experience different stimuli, form concepts according to groupings - grouping stimulus in a certain way. These concepts are abstractions based on experience, and because no two people have exactly the same experience, the concepts that people form may differ.

Klausmeier in Dahar (2011) suggested that there are four levels of concept achievement. These levels appear in an invariant sequence. People arrive at the highest level of achievement at different speeds and there are concepts that have never been reached at the highest level. Four levels of concept achievement according to Klausmeier, namely: 1) Concrete level. We can conclude that someone has reached the concept at a concrete level if the person knows an object that he has faced; 2) Level of identity. At the level of identity, a person will recognize an object: (a) after a period of time, (b) if the person has a different spatial orientation to the object, (c) if the object is determined by a different sensory method, for example knowing a the ball by touching the ball is not by looking at it; 3) Level of classification. At the classification level, students recognize the equations of two different examples of the same class. Although students cannot determine attribute criteria or determine words that can represent the concepts, they can classify examples and non-concept examples; and 4) formal level. For concept achievement at a formal level, students must be able to determine attributes that can limit the concepts.

According to Asep Jihad and Abdul Haris (2012) understanding of concept is a competency demonstrated by students in understanding the concept and in performing procedures in a flexible, accurate, efficient and appropriate manner. Eggen and Kauchak (2012) stated that concepts understanding can be measured through four ways that defining concepts, identifying characteristics of concepts, identifying or providing examples of concept that have never been before, and connecting concepts with other concepts. In this study, indicators of concepts understanding were selected as explaining concepts, identifying or providing examples of concepts, comparing concepts with other concepts, and inferring concepts.

2.2 Mind Mapping

Buzan (1993) described mind mapping as "a powerful graphic technique which provides a universal key to unlocking the potential of the brain." He has championed mind maps for studying, remembering and learning. The essential elements of any mind map are (1) a main topic represented with a central image; (2) important themes radiating from the central image as branches; (3) branches comprised of a key image or keyword printed on an associated line to a connected nodal structure and (4) the incorporation of color to clarify or emphasize connections.

According to Saleh (2009) mind mapping is "a diagram that is used to present words, ideas, work, or other things that are connected and arranged radially around a word containing the main idea". Mind mapping is an activity of recording the subject matter in the form of mind maps by empowering the left brain and right brain, the difference in mind mapping is that the style of recording is more creative than ordinary notes, said to be creative because the making of mind mapping requires the use of imagination from the maker, such as making pictures, symbols, charts, color usage, and the ability to express association power and creative power that are integrated into tree techniques.

Sani (2013) explained that mind mapping is a form of learning that is used to train the ability to present content with mind mapping. Mind mapping results in the form of mind maps. Mind map is a diagram used to present words, ideas, tasks or other things that are linked and arranged around the main idea keywords.

In this study, researchers applied mind mapping steps as suggested by Sani (2013), namely: 1) The teacher conveys the competencies to be achieved; 2) The teacher expresses the concepts or problems that students will respond to and should have problems that have alternative answers; 3) Form groups with 2-3 members; 4) Each group inventories or records alternative answers to the results of the discussion; 5) Each group (or randomly selected groups) read the results of the discussion; 6) Students make mind maps or diagrams based on alternative answers that have been discussed; 7) Some students are given the opportunity to explain the idea of mapping their thinking concepts; and 8) Students are asked to make conclusions and the teacher gives a comparison according to the concept provided (Sani 2014).

2.3 Social Studies

Fajar (2009) stated that Social Studies is a subject that examines a set of events, facts, concepts, and generalizations related to social issues and citizenship. Meanwhile, Nurhadi (2011) described that Social Studies is an integration of various branches of the social sciences, such as sociology, history, geography, economics, politics, law, and culture. Social Sciences is formulated on the basis of reality and social phenomena which embody an interdisciplinary approach from aspects and branches of social science. Social Studies is a subject that can deliver students to be able to answer basic problems about individuals, society, social institutions, social change, and people's lives (Sapriya, 2016).

Djahiri (Yaba, 2006) stated that social studies is a science that combines a number of selected concepts from the branches of social sciences and other sciences and then is processed based on the principles of education and is actively used as a teaching program in schools. In the Level of Education Curriculum Unit (2016) it is stated that the objectives of Social Studies in Elementary Schools are to: (a) recognize concepts related to the life of the community and its environment; (b) has the basic ability to think logically and critically, curiosity, inquiry, problem solving, and skills in social life; (c) have commitment and awareness of social and human values; and (d) having the ability to communicate, cooperate and compete in a pluralistic society, at the local, national and international levels.

3 METHODS

This study used Classroom Action Research (CAR) methods. According to Arikunto, et al (2015), Classroom Action Research is a study that describes the cause and effect of the treatment, as well as describes what happens when the treatment is given, and describes the entire process from the beginning of the treatment to the impact of the treatment. The design of this study refers to the opinion expressed by Arikunto (2015) that there are four stages in the action research activities, namely: (1) planning, (2) implementation, (3) observation, and (4) reflection. These stages can be illustrated by the following chart:

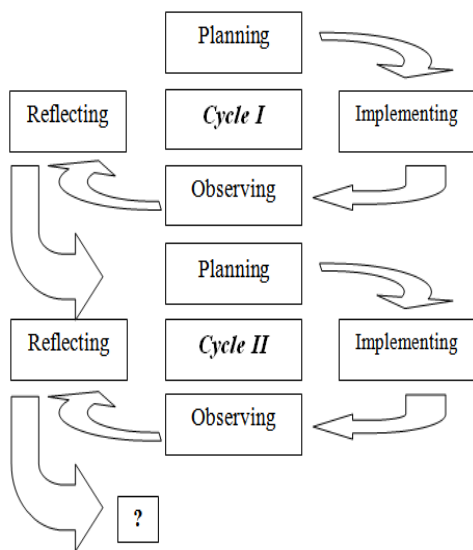


Figure 1. Classroom Action Research Chart

This research was conducted in 2017. Subjects in this study were fifth grade students of Bani Saleh 2 Elementary School in Bekasi, Indonesia amounting to 25 students. There were two instruments to obtain data in this research. The first instrument was written test to measure students' concepts understanding and the second instrument was learning observation sheet to observe the enforceability of mind mapping. Analysis in this research includes these steps: (1) manage raw data, (2) present the data, (3) draw conclusions, and (4) reflect.

4 RESULTS

Based on the written test results at the end of Cycle I, it was obtained that the total score was 1,733 with an average score of 69.3. The maximum score was 83 and the minimum score was 50. 16 of the 25 students have reached the Minimum Completeness Criteria, namely 70. This means that classical learning completeness in the Cycle I reached 64%. In Cycle II, the total score was 1,913 with an average score of 76.5. The maximum score was 90 and the minimum score 63. 19 of the 25 students have reached the Minimum Completeness Criteria. This means that classical learning completeness in Cycle II reached 76%. In Cycle III the total score of was 2,060 with an average score of 82.4. The maximum score was 97 and the minimum score was 63. 21 of the 25 students have reached the Minimum Completeness Criteria. This means that classical learning completeness in Cycle III reached 84%.

Here is presented a percentage recapitulation of students' classical learning completeness in Cycle I, II, and III:

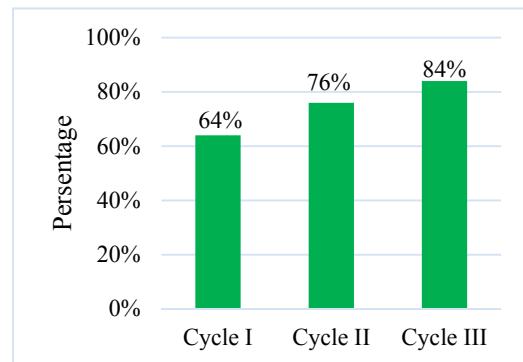


Figure 2: Recapitulation of Percentage of Classical Learning Completeness

Based on the diagram above, it can be seen that in cycle I to cycle III there was an increase in classical learning completeness. Cycle I reached 64%, cycle II reached 76%, and cycle III reached 84%. The percentage increase in classical learning completeness was also followed by an increase in the average score as shown in the following diagram:

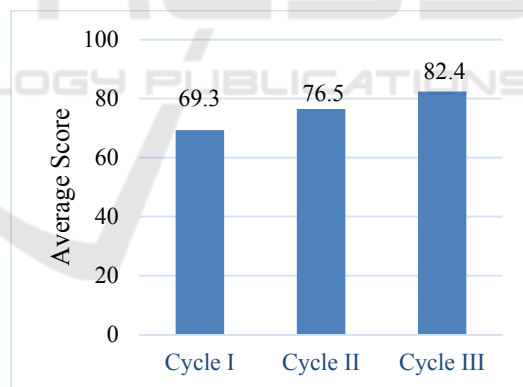


Figure 3: Recapitulation of Average Score of Students' Understanding Concept

From the diagram above it can be seen that the average value of students has increased. The average value of students in Cycle I reached 69.3, the average value in Cycle II reached 76.5, and the average value in Cycle III reached 82.4.

In addition to an increase in the percentage of classical completeness and average scores as explained above, the researcher also found an increase average score acquisition for every aspect of understanding the concept. Obtaining average scores

on aspects of students' concept understanding in cycle I, cycle II, and cycle III can be described in the table below.

Table 1: Recapitulation of Average Score of Concept Understanding Indicators.

No	Indicators of Concepts Understanding	Average Score		
		Cycle I	Cycle II	Cycle III
1	Explaining	69.7	76	82
2	Identifying/ Providing	68.9	77.3	83.1
3	Comparing	69.3	76	82
4	Inferring	69.3	77.3	82.7

Based on observation results on the activities of the researcher in applying mind mapping in Cycle I, II, and III, there were several learning steps that have been designed in lesson plan but were not implemented. There were 21 learning steps in each learning plan that has been compiled. In Cycle I, there were five learning steps that were not implemented, namely the researcher did not convey learning objectives to be achieved, did not involve students to actively ask questions in learning activities, did not ask questions about things that students have not understood, did not provide feedback and strengthening of students' answers, and did not provide conclusions about the material that has been delivered. In Cycle II, the researcher tried to improve the learning process, but there were still some steps that had not been carried out such as the researcher did not involve students to actively ask questions in each learning activity, did not provide feedback and reinforcement on students' answers, and did not ask questions about the material has delivered. In Cycle III, there was one step that has not been carried out, namely the researcher did not ask questions about things that students have not understood.

5 DISCUSSION

Based on the research results obtained, it can be seen that students' understanding of concepts in Social Studies increased in each cycle after the mind mapping was applied. In Cycle I, classical completeness was 64% with an average score of 69.3. It was a good start enough because the minimum completeness criteria in this subject is 70 but this research must be continued to Cycle II because it has not reached the criteria for success of the research that

has been determined, namely 80% of the number of students reach a score of 70. One of the causes of the lack of success of the research in this Cycle I was because there are several learning activities that have been arranged in the learning plan but not carried out by researchers. This certainly affected the quality of learning processes and outcomes.

Based on the implementation of learning and observation results in the Cycle I, the researcher made a reflection of the activities that have been carried out, namely: 1) There were still many students who need explanation several times in order to understand the assignment given; 2) Students were less active in learning, they only listened to the teacher's explanation and when the teacher gave the questions there were only a few students who answered; 3) There were many students who joked and did not pay attention when the teacher explained the material or when discussed with group friends; 4) The researcher was unable to take full advantage of learning time; 5) The researcher was unable to condition the class properly; and 6) There were many students who seem shy to read the results of the discussion in front of the class.

To improve the learning process and results in Cycle I, the researcher planned actions in Cycle II as follows: 1) The researcher provided explanations of tasks in stages, repeatedly and did not too quickly so the students will understand the tasks given; 2) The researcher must be more sensitive to students who were less focused on learning by approaching students and emphasizing to each student to actively asked questions if they experience difficulties; 3) Before starting learning, the researcher made an agreement first so that students will not joke when learning; 4) The researcher made maximum use of study time; 5) The researcher tried to condition the class well; and 6) The researcher must always provide motivation and guidance to students so that they were more confident, brave in expressing their opinions and ideas.

In Cycle II, classical completeness increased to 76% with an average score of 76.5. This result was quite good but the research still has to be continued to reach success criteria in this study. Although the researcher have tried to improve the learning process, there were still some activities in the learning plan that have not yet been implemented. Based on the results of observations in Cycle II, it was seen that students' attention to the subject matter was not maximized because there were still some students who played or joked with their friends when the teacher was explaining the material or when students were conducting group discussions. For that reason,

the improvement step in Cycle III was directing and motivating students to focus on the material.

In Cycle III, classical completeness increased to 84% with an average score of 82.4. With these results, the study was stopped because it had reached the research success criteria set out in this study. However, in this third cycle there was still one activity in the learning plan that has not been implemented. This needs to be a concern for further researchers to implement all learning plans that have been prepared so that they will get better results.

According to these results, it could be concluded that this research has been successful. Mind mapping could improve students' concepts understanding in Social Studies. Mind mapping made students easily in explaining concepts, identifying or providing examples of concepts that have never been met before, comparing with other concepts, and concluding the concepts.

This is in accordance with Buzan's (1993) opinion that the mind mapping strategy as a way to enable students to make connections that may improve one's ability to receive, hold, analyze, produce, and control information and concepts. The mind mapping supports constructive theory of premise knowledge acquisition through interaction with objects and events using one's senses to link new information with things already stored in the brain. (Vitulli & Giles, 2016).

The results of this study corroborate the results of previous studies. According to Al-Jarf (2011), creating a mind map of assist students in obtaining related rather than isolated knowledge. The mind maps provide students with meaningful displays so that learners can develop a holistic understanding of the content presented (Fiktorius, 2013). Balim (2013) was identifying the effects of the mind-mapping technique upon students' perceptions of inquiry-learning skills, academic achievement, and retention of knowledge. The result of the study shows that there is a significant difference in favour of the experimental group over the control group regarding the academic achievement, scores of retention of learning, and perception of inquiry-learning skill scores, both on cognitive and affective levels. Adodo's study (2013) showed that mind-mapping strategy as a SRL, helped to improve students performance in BST and should be employed in the classroom as a better approach to teach Basic Science and Technology (BST). Mind mapping was effective at improving learners' critical thinking and creative skills.

Rosciano (2015) stated that mind maps can help students to illustrate a vision, exhibit their contextual

knowledge and creativity, and make associations about a central theme during this activity. Buran & Filyukof's study (2015) concluded that mind mapping technique is considered to be up-to-date, creative, useful and available tool for students, educators and researchers. Parikh (2016) found that the mind mapping technique was more effective than traditional method. Merchie & Van Keer's study (2016) showed that the greatest overall gains for students in the student-generated mind-map condition as to the quality of their informative text traces and graphical design. Ravindranath, et.al study (2016) found that mind mapping can help in summarizing the PBL discussion.

Authors recommend to schools to support the application of mind mapping to improve the quality of learning in Social Studies as well as in other subjects that can be adjusted to the character and purpose of the subject matter, as well as the time and conditions at school to achieve the desired results. The teacher is expected to be able to apply mind mapping to convey the subject matter quickly, improve the students' concepts understanding, motivation and concentration in learning. The author also recommends other researchers to develop similar research in a wider scope.

6 CONCLUSIONS

Based on the results of the research and discussion, it can be concluded that mind mapping could improve concepts understanding in Social Studies. Mind mapping made students easily in explaining concepts, identifying or providing examples of concepts, comparing concepts with other concepts, and inferring concepts.

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