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The Effect of the Concept Map Method on Student Learning Motivation in Geography Class XI Social Studies 3 in Public High School 8 Banjarmasin

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Abstract

Disaster mitigation material has many concepts that are prone to misconceptions and fragments. Mind maps are considered capable of providing a good understanding of concepts. This study aims to determine the application of the concept map learning method in natural disaster mitigation material to increase the motivation to learn the geography of grade XI Social Studies 3 students at SMA Negeri 8 Banjarmasin in the even semester of the 2022/2023 academic year. This is a class action research (PTK) carried out in 3 cycles. Each Cycle consists of stages of planning, execution of actions, observation, evaluation, and reflection. The study subjects were 35 grade XI Social Studies 3 students—data collection using four aspects of learning motivation questionnaires and five questions of learning outcomes tests. The results showed that the initial score of students' motivation to learn geography was 26% in Cycle I to 78.67% of motivated students, in Cycle II to 87.49%, and in Cycle III to 93.07% of students. The initial score of geography learning outcomes was 46% of students completed Cycle I, 77.14% of students completed Cycle II, 88.57% of students, and Cycle III, 94.29% of students. Based on the study's results, there was an increase in students' motivation to learn geography while applying the mind map method in disaster mitigation material. Preparing concept maps by students with the freedom to draw lines creates an independent and fun learning atmosphere. Mind maps provide an integrated understanding of the relationship between concepts in disaster mitigation materials.

Keywords: Learning Methods, Mind Maps, Learning Motivation, Learning Outcomes

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1. Introduction

According to Hanafi (2018), a quality teaching and learning process must reflect five crucial aspects of learning, namely: (1) systematic teacher teaching preparation, (2) systematic delivery of teacher material using various media, methods, sound, and motion, (3) time during the teaching and learning process is used effectively, (4) teacher teaching motivation and high student learning motivation, and (5) interaction between teachers and Students and students with harmonious students so that every learning difficulty can be overcome immediately. Learning motivation as one aspect of quality learning is essential in teaching and learning activities because motivation is a driver that converts energy in students into the form of actual activity to achieve specific goals in learning.

Learning is a change in behavior due to a series of activities, for example, reading, observing, listening, imitating, and so on (Hamdani, 2011). According to Zuldafrial (2012), learning is a mental process because people who learn need to think, analyze, remember, and draw conclusions. The teaching and learning process that develops in the classroom is generally determined by the roles of teachers and students as individuals who are directly involved in the process. Students' ability depends more or less on how the teacher delivers lessons to his students. Therefore, the ability and readiness of teachers in teaching play an essential role in the success of students' teaching and learning process. That shows the relationship between students' understanding and ability and teachers' teaching methods.

The role of motivation in clarifying learning objectives is closely related to learning outcomes (Iswayuni et al., 2019). Students will be interested in learning something if what they learn can at least be known or enjoy the benefits for students. A student motivated to learn something will try to learn it well and diligently to obtain good results. Motivation to learn causes a person to study diligently; conversely, if someone lacks or is not motivated to learn, it is easy to be tempted to do other things instead of studying. This learning condition shows that motivation is very influential in learning resilience and perseverance. Another problem in the geography learning process is that students feel that geography lessons are challenging and tedious, making students less understanding of the material the teacher has delivered. Students also feel too lazy to read textbooks, so they often feel inadequate and need more courage and opportunity to try to answer or express their opinions.

The condition of learning Geography at SMA Negeri 8 Banjarmasin shows that conventional methods are still dominant. Practically the teacher provides explanations to students, and students take notes accompanied by questions and answers as necessary, then proceed with giving sample questions and practice questions or assignments. In the learning process, the teacher's role is dominant in preparing, compiling, and programming the learning process in the classroom. Learning conditions are teachers' centered, and students tend to be passive so that the learning process does not involve the role of students physically and mentally in learning activities. Students, as learning subjects, are programmed to obtain better learning outcomes. However, the condition students, like one of the objects in learning, must listen, pay attention, understand, take notes, and store and reissue information conveyed by the teacher during the test. Such a learning process encourages students to be passive, ignorant, lazy, sleepy and bored so that low learning motivation results in learning outcomes tend to be low.

The reality found in geography learning in class XI Social Studies 3 shows that students tend to have low motivation in learning. Students lack responsibility in completing assignments; about 35% have low assignment scores, and more than 20% are sleepy during learning. Low student motivation is also reflected in student responses and

activities in learning from observations; less than 8% of students dare to point fingers to answer questions from the teacher, and less than 5% of students dare to point fingers asking questions to the teacher.

Based on the learning conditions in class XI Social Studies 3, it is necessary to overcome these problems by applying the mind map learning method. Learning the mind map method will improve student motivation and learning outcomes in class XI Social Studies 3. The method of teaching mind maps applies creative learning methods so that students can develop creativity in learning activities (Hudojo, 2002). Mind map learning improves student interest, motivation, and learning outcomes (Ander, 2020; Selasari &; Amaluddin, 2016; Syafruddin, 2019).

According to Dahar (2011), mind maps help identify what students already know and reveal misconceptions. The teacher must know what concepts the students already have when the new lesson begins. Students must demonstrate what concepts they already have in the face of the new lesson. By using mind maps, teachers can carry out what has been stated so that meaningful learning activities are expected to occur. Mind maps are considered related to the development of student knowledge in the learning process (Widiawati, 2022). Mind maps aim to create a structure of understanding from facts linked to subsequent knowledge. Mind maps also train how to organize information, facts, and concepts into a good understanding (Gavens et al., 2022; Puspitasari, 2020). This study aims to determine increased student learning motivation through the mind map method on natural disaster mitigation material.

2. Method

This type of research is classroom action research. Suyanto (2002) stated that there are four characteristics of classroom action research, namely: (1) carried out by teachers, (2) departing from factual problems, (3) there are actions taken to improve the learning process, and (4) collaborative. In this action study, researchers carry out an action that is specifically observed continuously then improvements are made to the most appropriate maximum effort (Arikunto, 2010). The subjects in this Classroom Action Research (PTK) are grade XI Social Studies 3 students of SMA Negeri 8 Banjarmasin for the 2022/2023 academic year, totaling 35 students, consisting of 14 female students and 21 male students. The research was conducted at SMA Negeri 8 Banjarmasin, Jalan SMA 8 RT. 26 No. 23 Kelurahan Alalak Tengah, North Banjarmasin District, Banjarmasin City, South Kalimantan Province. Research Implementation in the even semester (March - April 2023) of the 2022/2023 academic year.

Kemmis and McTaggart developed the class action research design model used in this study. This model follows a flow of four main components: planning, implementing actions, observations, and reflections (Sugiyono, 2013). The Kemmis and Mc Taggart design model was then developed in the flow of action implementation from the beginning to the end of the study (Figure 1). Classroom Action Research (PTK) activities are carried out in 3 cycles continuously, with the allocation of learning time for each meeting as two hours of lessons (2x45 minutes). Each Cycle is carried out with one subject. The subject matter used in Cycle I am the types and classification of natural disasters. In contrast, Cycle II uses the subject of the distribution of natural disaster-prone areas in Indonesia, and Cycle III uses the subject matter institutions of natural disasters in Indonesia.

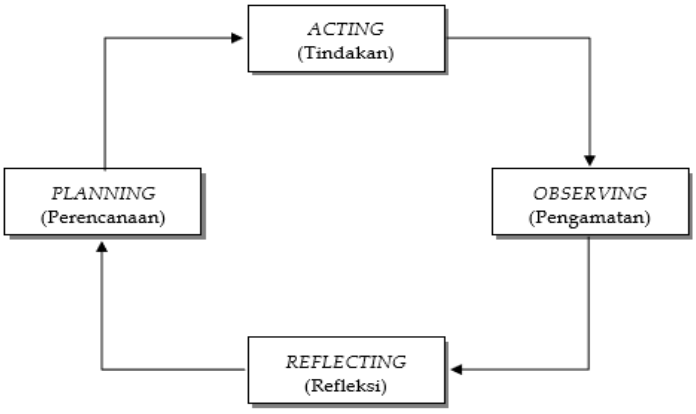

Figure 1. Stages of the Research Cycle

Data collection using learning motivation questionnaires has as many as four aspects: sincerity, concentration, activeness, and enthusiasm in following each stage of learning. Student learning outcomes are obtained from written questions in the form of multiple-choice questions totaling five questions in each Cycle. The data obtained from the research results were then analyzed with the following formula (Sugiyono, 2013):

$$P = \frac{Number\ of\ completed\ students}{total\ number\ of\ students}\ X\ 100\% \quad (1)$$

Where P = Percentage of students completed

3. Result and Discussion

A. Cycle I

Classroom Action Research (PTK) in the first Cycle will be carried out on Thursday, March 16, 2023, during the fifth and sixth learning hours with an allocation of time (2x45 minutes) with the subject matter Types and Characteristics of Natural Disasters.

1) Action Planning Stage

In the action planning stage, the following activities are carried out:: 1) Disseminate teaching with the mind map method to geography subject teachers or practitioners as partners in the research process; 2) Create learning scenarios with the mind map method; 3) Compile observation sheets to record teaching and learning situations during learning; 4) Prepare Student Worksheets (LKS) by core competencies and essential competencies; 5) Prepare the media and facilities needed in learning with the mind map method; 6) Compile learning outcomes tests in the form of multiple-choice tests to determine student learning outcomes; 7) Forming study groups with the consent of heterogeneous teachers by taking into account learning achievement and gender.

2) Action Implementation Stage

The stages of implementing actions in Cycle I can be described as follows: a) Introduction: 1) Conveying learning objectives; 2) Assign students to prepare study supplies; 3) Motivate students. b) Development: 1) Socialize learning by applying the mind map method; 2) Explain learning materials by essential competencies; 3) Divide students into work groups, wherein one group consists of between 4 - 5 people; 4) Divide

LKS into each group; 5) Each student does the assignment in the LKS that has been distributed; 6) Students pair up in group study; 7) The teacher guides the study group; 8) Convey student perceptions and provide assessments of group learning outcomes. c) Application: 1) Provide Practice questions; 2) Ask students individually to do practice questions related to the material studied; 3) Ask a few students to write their answers on the board; 4) Assess student work and convey correct resolution steps if there are errors in student work. d) Closing: 1) Each group presents the results of group work in front of the class; 2) Together with students to convey conclusions on the material studied; 3) Informing the material to be studied at the next meeting.

Figure 2. Implementation of actions in Cycle I

3) Observation Phase

The results of the calculation of learning motivation in cycle one can be seen in Figure 3 below.

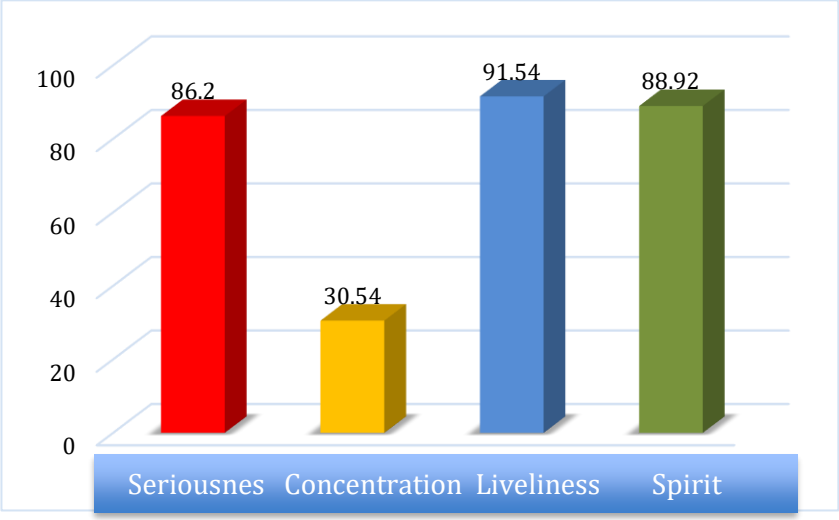

Figure 3. Student learning motivation in cycle 1

Based on the Figure 3, it is known that the learning motivation of grade XI IPS 3 students in the first Cycle shows: that 86.30% (20 students) expressed seriousness in the learning process, 30.54% (25 students) stated concentration to be able to master the substance of geography subject matter 91.54% (24 students) stated actively following the learning process, and 91.64% (30 students) expressed enthusiasm to be able to master the substance of geography subject matter. The conclusion in Cycle I is:

$$\frac{86{,}30\%+30{,}54\%+91{,}54\%+91{,}64\%}{4} = 75{,}01\%$$

Students stated that they were pretty motivated in following geography lessons with the mind map method.

4) Reflection Stage

Based on the results of observations on the implementation of the first Cycle of learning, several shortcomings are still found, namely: 1) The teacher can condition the class and provide motivation well but not so optimally; 2) Some groups are able and understand how to make mind maps, but there are still groups who are confused about how to connect images that match the subject matter; 4) Students are already active in groups, but there are still undirected; 5) Some students in the group still lack the courage to ask questions and answer.

2. Cycle II

Classroom Action Research (PTK) in cycle II will be carried out on Tuesday, April 4, 2023, during the first and second learning hours with an allocation of time (2x45 minutes) with the subject matter "Distribution of Natural Disaster Areas in Indonesia."
Activities in Cycle II consist of 4 stages, including:

1. Action Planning Stage

In the action planning stage, the following activities are carried out: 1) Creating learning scenarios for the mind map method; 2) Compile observation sheets to record teaching and learning situations during learning; 3) Prepare student worksheets (LKS); 4) Prepare media and facilities needed for learning; 5) Compile learning outcomes tests in the form of written tests (PG) to determine student learning outcomes; 6) Forming study groups with the consent of heterogeneous teachers.

2. Action Implementation Stage

At this stage, the learning design will be applied, and observations will be made following the observation sheet that has been prepared. The implementation of actions in Cycle II is almost the same as in Cycle I, namely the stages of preceding, developing, implementing, evaluating, and closing by paying attention to the improvements planned in Cycle I. In Cycle II, students are expected to understand and understand the material about the distribution of natural disaster-prone areas in Indonesia. In the implementation of Cycle II, in addition to the teacher again explaining the procedures for making mind maps as in the implementation of the previous Cycle I, the teacher also did several ways, such as: motivating all students, agreeing on some new rules to be implemented in class so that learning obstacles in Cycle I can be minimized, and the learning process in Cycle II is carried out correctly and purposefully.

Figure 4. Implementation of actions in cycle II

3. Observation and Evaluation Phase

The observation results showed increased motivation scores to learn geography from Cycle I. The calculation results can be seen in Figure 5.

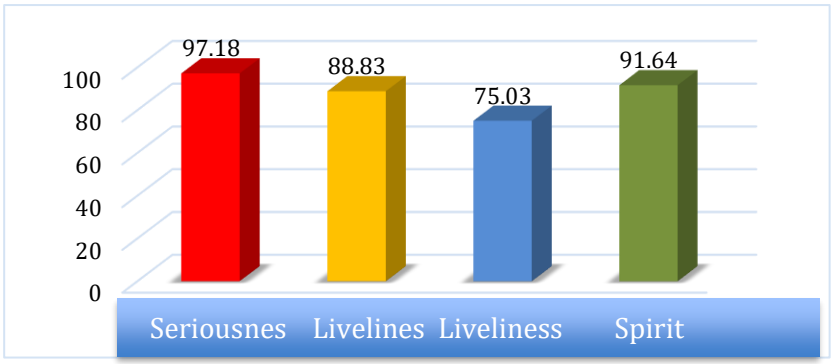

Figure 5. Student learning motivation in Cycle II

Based on the picture above, it is known that the learning motivation of grade XI IPS 3 students in cycle II (A) shows that 97.18% (29 students) expressed seriousness in the learning process. 88.83% (25 students) stated concentration to master the substance of geography subject matter. 75.03% (18 students) participated actively in the learning process. Furthermore, 88.92% (17 students) expressed enthusiasm to master the substance of geography subject matter. So it can be concluded in cycle II $\frac{97,18\%+88,83\%+75,03\%+88,92\%}{4}$ = 87,49% of students expressed motivation in following geography lessons with the mind map method.

4. Reflection Stage

Based on the results of observations and the results of student learning evaluation in Cycle II, it can be seen that several things have been implemented well in the implementation of teaching and learning activities that occur in Cycle II, including 1) Students are serious in following learning with the mind map method; 2) The enthusiasm and readiness of students in receiving learning has been better; 3) Most students have been able to ask questions and convey opinion and mastery of the material on further increased essential competencies; 4) Student interaction in the group is in line with expectations; 5) Student interaction with teachers when group guidance is practical.

3. Cycle III

Class Action Research Cycle III was held on Thursday, April 6, 2023, with the subject matter "Natural Disaster Institutions in Indonesia." Activities in Cycle III consist of 4 stages, including:

1. *Action Planning Stage*

In the action planning stage, the following activities are carried out: 1) Creating learning scenarios for the mind map method; 2) Compile observation sheets to record teaching and learning situations during learning; 3) Prepare student worksheets (LKS); 4) Prepare media and facilities needed for learning; 5) Compile learning outcomes tests in the form of written tests (PG) to determine student learning outcomes; 6) Forming study groups with the consent of heterogeneous teachers;

2. *Action Implementation Stage*

At this stage, the learning design will be applied, and observations will be made by the observation sheet that has been prepared. The implementation of actions in Cycle III is almost the same as in Cycle I and Cycle II, namely the stages of preceding, developing, implementing, evaluating, and closing by considering the improvements planned in Cycle II.

In the third Cycle, students are expected to be able to understand and understand the material about natural disaster institutions in Indonesia. In the implementation of Cycle III, in addition to the teacher again explaining the procedures for making mind maps as the implementation of the previous Cycle II, the teacher also did several ways such as motivating all students, agreeing on some new rules to be implemented in class so that learning obstacles in Cycle II can be minimized. The learning process in Cycle III is carried out correctly and purposefully.

Figure 6. Implementation of actions in Cycle III

3. *Observation Phase*

The results of calculating students' motivation to learn geography in Cycle III can be seen in Figure 7.

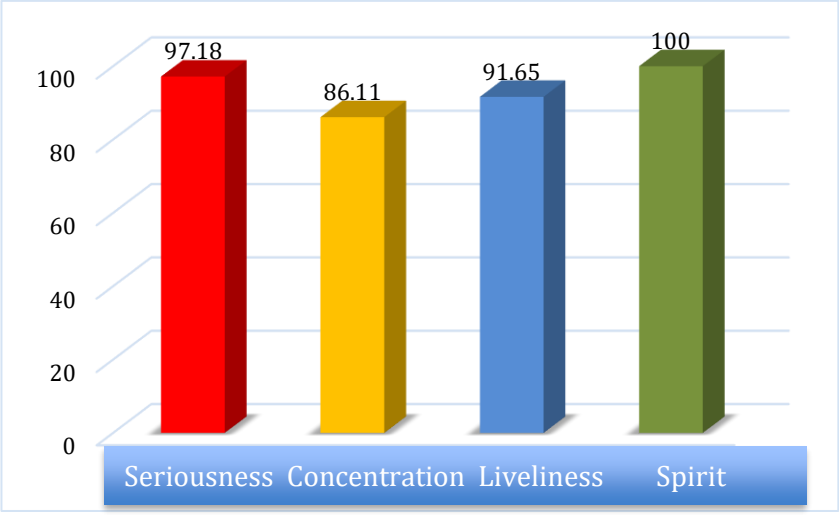

Figure 7. Student learning motivation in Cycle III

Based on the Figure 7, it is known that the learning motivation of grade XI IPS 3 students in cycle III showed an increase of 97.18% (29 students) expressed seriousness in the learning process. 86.11% (20 students) stated concentration to master the substance of geography subject matter. 91.65% (24 students) stated that they actively participated in the learning process, and 100% (35 students) expressed enthusiasm to master the substance of geography subject matter.

So, it can be concluded on Cycle III $\frac{97,18\%+86,11\%+91,65\%+100\%}{4}$ x 100% = 93,7

4. Reflection Stage

Based on the results of observations and the results of student learning evaluation in Cycle III, it can be seen that several things have been implemented well in the implementation of teaching and learning activities that occur in Cycle III, including 1) Students are serious in following learning with the mind map method 2) Student enthusiasm and readiness in receiving learning has been better 3) Most students have been able to ask questions and express opinions 4) Mastery of material on essential competencies is further improved. 5) Student interaction in groups is by expectations 6) Based on the previous Cycle, learning in Cycle III is considered to have reached a saturated and maximum value, so the mind map method has been considered able to increase student motivation to learn geography.

The value of student learning outcomes also supports increased student motivation scores during learning. Student geography learning outcomes measured by learning outcomes tests at the end of each Cycle can be seen in Figure 8.

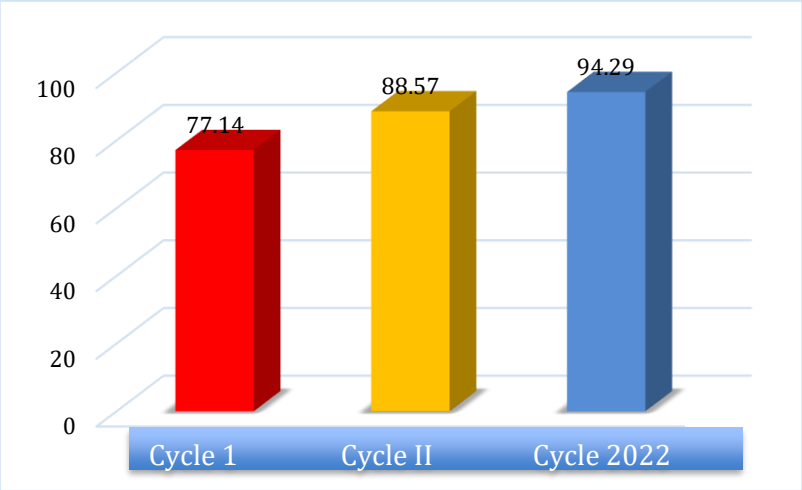

Figure 8. Student geography learning outcomes during learning

In this classroom action research, teachers apply mind map learning methods to increase student motivation on essential competencies of natural disaster mitigation. Learning begins with presenting learning objectives, providing perceptions, concept discovery through joint thinking activities and demonstrations with guidance through LKS, strengthening and applying concepts through practice questions, and finally, making conclusions. This research activity is carried out in 3 cycles consisting of 3 meetings, including the learning process is an evaluation activity to find out the extent to which students absorb the material that has been learned together.

The research results above show that the mind map method can increase student motivation in geography subjects in class XI Social Studies 3. Applying the mind map method in the learning process as a whole takes place in a pleasant atmosphere. Based on student learning motivation, the average student learning motivation score in the first Cycle was 75.01%, with the average student learning outcome score being 77.14%. Learning in Cycle II increased to 8, 7.49% for learning motivation and 88.57% for learning outcomes. Then in Cycle III, there was another increase to 97.3% for student learning motivation and 94.29% for geography learning outcomes. Thus, the actual indicators have been achieved in Cycle II. However, seeing that there are still shortcomings in improving the learning process to increase student motivation and learning outcomes, activities are continued in Cycle III. The drawback is that students still need to maximize their ability to make mind maps. Making mind maps requires skill and time to express ideas in forms, images, abbreviations, associations, and creative sentences (Yuliyanto et al., 2020). Students who lack confidence will be afraid of making wrong mind maps and ashamed of their work being judged poorly.

The shortcomings mentioned above occur more when students first get the task to make a mind map or, in other words, these shortcomings arise only at the beginning of the learning application. In contrast, for subsequent learning, these shortcomings get smaller. Therefore, it can be said that this deficiency is only temporary; after students are familiar enough with learning, the shortcomings that occur as intended continue to experience a reduction, some of which are even missing (Sari, 2010). A mind map is a relationship between concepts and principles represented like a network of concepts that need to be constructed, and this network of constructed concepts is called a mind map. Such learning can encourage the realization of a fun learning process and ultimately can increase student motivation and learning outcomes (Hudojo, 2002; Sari, 2010).

According to Tony Buzon (2007), *mind maps* are an easy way to explore the inner and outer formations of the brain, a new way to learn and practice that is fast and powerful, a way to take notes that are not boring and the best way to create new ideas in planning projects. Mind maps in geography learning can increase knowledge about learning strategies, easily remember lessons and create a pleasant learning atmosphere (Hudojo, 2002; Kontrová, 2015).

4. Conclusion

Learning with the mind map method can increase student motivation in geography subjects. It can be seen from the value of the first Cycle is 7.5.01%, with the average value of student learning outcomes being 77.14%. The increase continues in cycles II and III. Cycle II increased to 8, 7.49% for learning motivation and 88.57% for learning outcomes. Cycle III became 97.3% for student learning motivation and 94.29% for learning outcomes. Applying the mind map method can foster a more pleasant learning atmosphere, increase seriousness, concentration, activeness, and enthusiasm in learning, and train and develop creativity and inventiveness in students. Research on individual differences in building independent concepts needs to be known to determine the increase in personal motivation.

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