

Mind Map Learning Models and The Development of Critical Thinking Skills in Social Studies at SMP Negeri 11 Semarang

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ABSTRACT

Various problems often occur during learning, such as what happens to class VIII students at SMP Negeri 11 Semarang. There is a phenomenon of a lack of critical thinking skills in students during learning. Teachers try to help improve students' critical thinking skills so that they can follow learning, especially on complex material. The purpose of this study was (1) to describe the use of mind map learning model in the development of critical thinking skills of grade VIII students in social studies subjects, (2) to analyze the effectiveness of the use of mind map learning model in improving critical thinking skills of grade VIII students in social studies subjects, (3) to identify factors that influence the success of the application of mind map learning model in the development of critical thinking skills. Critical thinking skills are essential for students in understanding and analyzing complex social problems. The mind map model is used as a learning tool that facilitates students' organization of information visually, connection to concepts, and increased active involvement in the learning process. This research used a qualitative method with a phenomenological approach, collecting data through observation, interviews, and documentation.

The research subjects were VIII-B and VIII-E students totaling 32 students from each class. Data analysis used interactive analysis techniques. The results of this study show: (1) The application of the mind map learning model significantly increases student involvement in the learning process, students show high enthusiasm and can collaborate in groups to compile mind maps, this model also creates more interactive and interesting learning to improve student understanding of social studies learning materials. (2) The results showed that applying Mind Map in social studies learning can improve students' critical thinking skills, such as analyzing, evaluating, and information-seeking skills. In addition, it increases students' understanding of learning materials but also helps them to think logically and creatively. (3) Evaluation conducted by social studies teachers covers 3 main aspects, namely reflection on the learning process, the accuracy of the teaching module used, as well as challenges and obstacles in learning. This research can conclude that the mind map learning model is a learning model used to convey concepts or ideas in a way that encourages brain creativity and can improve students' critical thinking skills.

Keywords: Mind map models, critical thinking, social studies learning, grade VIII students.

INTRODUCTION

Critical thinking ability is one of the fundamental skills that are indispensable in the era of globalization. Hamidah & Wulandari (2021). Critical thinking is a thinking activity that emphasizes reasoned and reflective decision-making about what to believe and what to do, Ardiyanti (2016). Critical thinking skills are defined as mental activities to gain knowledge, the contours of which are analysis and evaluation. Critical thinking skills are defined as the activity of identifying, analyzing, and evaluating arguments and claims, finding personal prejudices and biases, and how to proceed. According to Shihotang (2019) addressing it and designing and producing reasons to support the conclusion. According to Ennis (2011), critical thinking involves the ability to analyze, evaluate, and make decisions based on valid evidence. In the context of Social Studies learning, this skill becomes very important because students are faced with complex social problems, such as social inequality, environmental change, and economic dynamics.

According to Salim (2017), social studies is a very important and complicated field to study social phenomena that occur in social studies society, which will be the provision of students in community life. Bernhard G. Keller (1992) also stated the same thing, according to him, social science is a discipline that provides an understanding of how humans live, basic human needs, actions taken to meet these needs, and institutions created to meet these needs. According to Kuriulum (2006), social studies subjects in junior high school are an integration of the subjects of history, sociology, geography, and economics, as well as other social science subjects. According to the National Council for Social Studies (NCSS), the purpose of learning social studies is to develop the knowledge, skills, and attitudes needed to

live in a democratic society. According to the National Council for Social Studies (NCSS), the purpose of social studies is to "...help young people develop the ability to make informed and reasoned decisions in the public interest as citizens of a culturally diverse democratic society in an interdependent world. ". This is reinforced by the Regulation of the Minister of National Education Number 1 of 2006 Number 22 concerning Content Standards for Social Studies Subjects, namely: (a) understanding of concepts related to community life and the environment; Have basic abilities of logical and critical thinking, curiosity, investigation, problem-solving and social life skills; (c) Have a commitment and awareness of social and human values; (d) Can contribute to communication, local, national and global collaboration; and competence in a diverse society at all levels (Ginjar 2017: 121).

At SMP Negeri 11 Semarang, observations show that students in grade VIII often face difficulties in understanding social studies concepts in depth. Conventional learning tends to make students passive, so students' ability to think critically has not developed optimally. To overcome this problem, social studies teachers apply the mind map learning model as one of the innovative methods. Based on the results of interviews conducted by researchers with social studies teachers in social studies learning in class VIII, it is known that the current Merdeka Curriculum prioritizes a holistic and integrative approach, where various aspects of social science are not separated but taught simultaneously and interrelated. This approach has a significant impact on the development of students' critical thinking skills. By linking social studies learning with actual issues, such as climate change, social injustice, or technological developments, students can see the relevance of the material they are learning. This encourages students to think critically about the impact of these issues on society and the environment. But in reality that becomes a problem for students is the lack

of critical thinking, then in overcoming the problem social studies teacher Mrs. Dwi Mahardanik, S.Pd at SMP Negeri 11 uses one of the effective learning methods to support learning the use of mind maps to increase the critical thinking skills of students. Based on the results of observations made by researchers in class VIII SMP Negeri 11 Semarang through the learning process in the classroom conducted by teachers, especially in social studies subjects. The results of observations at the intended school, SMP Negeri 11 Semarang, during the learning process that the application of learning methods that are usually done by social studies teacher Mrs. Dwi Mahardanik S.Pd related to alternatives to improve students' critical thinking is the mind mapping learning method. The mind map method like tree branches helps the brain store information about how the brain works. In addition, as mediators of learning, teachers must have good listening skills, the ability to control tension in the classroom, and the courage to initiate constructive discussions. Educators must encourage discussions and debates that value multiple perspectives. By providing various learning resources, teachers can teach students to be smart and critical consumers. It can also help them acquire essential skills in the analysis of different points of view. This enhances students' research skills and enables more critical discussions in the classroom. A critical education approach incorporated into the curriculum can help students understand the material better. Teachers are crucial in providing the subject matter in the right context. Critical and engaging learning models can help students understand better what they are learning. The mind map method was first developed by Tony Buzan and is designed to maximize the potential of the human brain through information visualization. This technique helps students organize key concepts, connect them logically, and present them in an interesting form. With this approach, students are expected to not only understand the material but also be able to analyze

problems critically and creatively. According to Maria Setiani Putri (2021), mind mapping is a technique that can optimize both sides of the human brain. A mind map is a learning tool used to help students understand material in social studies lessons. As stated by can adapt the learning process to the way the brain works naturally. Note-taking uses the mind map system, which involves both the left part of the brain and the right part of the brain, allowing for the use of preferred symbols or images. In creating mind mapping, you can also use colors for branching that represent certain meanings. Using mind maps can also make notes with emotion, fun, and creativity. The use of mind media can help students recall the lessons they have learned. In addition, to help the brain absorb the information received, students can map the ideas of knowledge that students have learned from books to paper in the form of symbols, words, pictures, and colored lines. Learning media is a solution for teachers to anticipate learning that is considered less interesting by students. One way is to apply mind maps in the learning process. Mind maps allow teachers to find relevant learning resources based on their teaching material.

Based on the results of observations made by researchers in class VIII SMP Negeri 11 Semarang through the learning process in the classroom conducted by teachers, especially in social studies subjects. The results of observations at the intended school, SMP Negeri 11 Semarang, during the learning process that the application of learning methods that are usually done by social studies teacher Mrs. Dwi Mahardanik S.Pd related to alternatives to improve students' critical thinking is the mind mapping learning method. The mind map method like tree branches helps the brain store information about how the brain works. It makes learning in the classroom easier and helps students to think critically. This research aims to develop critical thinking skills of Class VIII students in social studies subjects using the mind map

learning model at SMP Negeri 11 Semarang which is an important step in developing students to be critical and intelligent in dealing with social problems.

MATERIALS & METHODS

This research used a qualitative method with a phenomenological approach. Data were collected through observation, interview, and documentation. The research subjects consisted of students of class VIII-B and VIII-E at SMP Negeri 11 Semarang. The qualitative method was chosen because it can provide an in-depth understanding of the phenomenon under study, namely the use of the Mind Map learning model in developing students' critical thinking skills. This type of research is a case study, which focuses on in-depth observation of the learning process in class VIII at SMP Negeri 11 Semarang. Sugiyono, in Alfianti (2017) states that description research is broadly speaking a research activity that wants to describe or try to describe an event or symptom systematically, factually and accurately. Descriptive method in the form of a case study, which is an approach to studying the status of human groups, objects, systems of thought, certain conditions, or types of events in the present. According to Nursalam (2016), case study research is an approach that aims to provide a detailed description of the background, nature, and characteristics of a particular case.

Observation was conducted to observe student interactions during the learning process using the Mind Map model. Researchers recorded student behavior, student involvement in group discussions, and the way students compiled Mind Maps. Interviews were conducted with the social studies teacher, Mrs. Dwi Mahardani S.Pd, and several students. The interview questions were designed to explore students' experiences in using the Mind Map model, as well as its impact on students' critical thinking skills. The interview with the teacher included questions about learning preparation, challenges faced, and

evaluation of the use of Mind Map. Interviews with students focused on students' experiences in using Mind Map, how this method helped students understand the material, and students' feelings towards learning. Documentation was used to collect additional data that supported the analysis, such as lesson plans, teaching modules, and students' Mind Map work. Researchers also collected photos and videos during the learning process to provide visual evidence of the activities taking place in the classroom.

Data obtained from observations, interviews, and documentation were analyzed qualitatively. The analysis was carried out with the following steps: Data Collection was used to collect all relevant data from observations, interviews, and documentation. Data Condensation is used to select and simplify the data that has been collected to focus on the information that is most relevant to the research objectives. Data Presentation is used to present data in a descriptive form that facilitates understanding, including quotes from interviews and observations. Data Verification and Conclusion Drawing: Verifying data to ensure consistency and validity, and drawing conclusions based on the analysis conducted. To ensure the validity of the data, this study used triangulation techniques, namely comparing data obtained from various sources (teachers, students, and documents) and using various data collection methods (observation, interviews, and documentation).

RESULT

SMP Negeri 11 Semarang is a public junior high school located on Jl. Karangrejo Tengah, Karangrejo, Kec. Gajahmungkur, Semarang City, Central Java. SMP Negeri 11 Semarang is an A-accredited school. The location of SMP 11 Semarang is quite strategic with easy access from various directions. This school is an Adiwiyata school that promotes environmentally friendly habits and behaviors. SMP Negeri

11 Semarang educates the school community to reduce plastic waste through the Students Bring Their Own Eating and Drinking Places (Si Manis) program, which is an invitation to always bring their drinking and eating places from home, it is done to reduce waste at school, so students will be more comfortable learning and have a sense of responsibility to maintain their goods. Furthermore, SMP Negeri 11 Semarang also prioritizes the 6S attitude (Smile, Greeting, Greeting, Politeness, Censorship) and anti-bullying. SMP Negeri 11 Semarang is a three-year program, starting from grade VII to grade IX, with each level consisting of grades A-H.



Figure 1. SMP Negeri 11 Semarang building

This study aims to analyze the effect of using the mind map learning model on the critical thinking ability of VIII-grade students in social studies subjects at SMP Negeri 11 Semarang. Data obtained from observations, interviews, and documentation showed significant results in increasing student involvement and students' critical thinking skills. In using the mind map learning model in class VIII students through social studies subjects, teachers utilize mind maps to help students understand complex material. The learning process begins with the introduction of key concepts, such as social mobility, intercultural interaction, and economic dynamics. Students are then asked to create mind maps individually or in groups. The

resulting mind map includes branches of the main concepts that are logically connected, helping students see the interconnectedness of the material studied. Observations showed that students were actively involved in this process, with a high level of participation in group discussions. During the learning process showed that students were very enthusiastic in participating in activities that used the mind map learning model. Students were seen actively participating in group discussions, sharing ideas, and helping each other in developing mind maps.



Figure 2. Students in Groups Make Mind Maps

The development of students' critical thinking skills, based on the results of observations, interviews, and document analysis, in social studies learning using the mind map learning model shows an increase in critical thinking skills. Analysis of students who can identify the relationship between social studies concepts, such as factors causing social mobility and its impact on society. The evaluation process is where students can evaluate information from various perspectives and relate it to real situations in society. Students can organize information into visual maps or mind maps that reflect a deep understanding of the material. The results of mind maps made by students and produced by students show the development of critical thinking skills, with concept maps that are more detailed and structured than before the use of this method. The results of interviews

with social studies teacher Mrs. Dwi Mahardanik S.Pd showed that the use of mind maps helped students organize information and understand learning materials well. The teacher reported that students are better able to analyze and evaluate the information they learn. In improving students' critical thinking skills, teachers also provide various triggering questions to find out whether students understand the material that has been taught using the mind map learning model. During the implementation of the mind map maker, students can improve their critical thinking skills by exchanging ideas or opinions with their groupmates, besides that students can also express their creativity through the mind mapping made.

Teacher evaluation of learning covers 3 main aspects, namely reflection on the learning process, the accuracy of the teaching module used, and challenges and obstacles in learning. The teacher's reflection process asks students to reflect on the learning process that has been carried out. In this reflection, students are directed to answer questions given by the teacher such as: "What have you learned from today's learning?", "what are the things that are still confusing from today's learning?", "how can today's material be connected to everyday life?". The reflection process has a very important role in helping students realize how to think, understand students' strengths and weaknesses in processing information, and help students assess and evaluate understanding independently while considering the perspectives of others. Thus, reflection not only increases students' metacognitive awareness but also encourages more meaningful and relevant learning, and improves essential aspects in the development of critical thinking skills. The teaching module used in this study was designed to support mind map-based learning. Evaluation of the appropriateness of the teaching module involves analyzing the structure and content of the module, as well as its suitability to the learning objectives. The teaching module has been

designed in alignment with basic competencies, with a focus on developing students' critical thinking competencies in social studies subjects. The module includes a step-by-step guide to making mind maps and analysis-based questions that encourage students to think deeply. The material in the module is also relevant to students' social context, such as examples of social mobility cases in the surrounding environment. The challenge in implementation was that not all students had the same speed in understanding and composing mind maps, so some groups needed guidance and direction to achieve optimal results. This reflection shows that although mind maps can increase student engagement and critical thinking skills, their application needs to be adapted to the needs of students and classroom conditions (Brookhart, 2010).

DISCUSSION

The results showed that the mind map learning model is an effective approach to developing critical thinking skills of grade VIII students. This learning model allows students to organize information visually so that they more easily understand the relationship between the main concepts in social studies material. The findings of this study are in line with the theory proposed by Buzan (2006), which states that a mind map is a learning tool that encourages the involvement of the brain as a whole, both in logical and creative thinking. By using mind maps, students can identify and analyze information more effectively than with traditional learning methods. The critical thinking skills developed include analysis, evaluation, and synthesis, as emphasized in Ennis' (2011) theory on critical thinking skills. Students who engage in Mind Map-based learning show the ability to connect complex concepts and draw conclusions based on the facts obtained. This research can also be related to the theory of critical thinking proposed by John Dewey. Dewey defines critical thinking as a reflective process that involves active evaluation of information to achieve deep understanding

and logical decision-making. In the context of this research, the mind map learning model allows students to follow the stages of critical thinking in line with Dewey's concept. John Dewey (1933), emphasized the importance of gathering and organizing information before analysis. Mind maps assist students in this process by providing a visual structure for categorizing information based on key themes or concepts. For example, students organize the main branches that include causes, impacts, and solutions related to social issues, which allows them to understand the relationships between concepts in depth. The application of the Mind Map method is in line with Dewey's critical thinking principles that emphasize reflective, active, and problem-based learning. By visualizing the relationships between concepts, students engage in a systematic and logical thinking process, which is the core of Dewey's theory. In addition, mind map-based learning also provides space for students to explore their ideas creatively, while still being focused on solving problems relevant to real life.

The main obstacles in applying this method are time constraints and students' understanding of mind maps. To overcome this, teachers need to provide initial training to students on how to make mind maps and simplify the material to better suit students' level of understanding. In addition, learning time can be extended or assignments can be completed outside of class to provide flexibility to students.

The results of this study strengthen the evidence that using the mind map learning model not only helps students understand the material in depth but also motivates them to think critically and creatively. Thus, mind maps can be one of the relevant innovative learning methods to support social studies learning in secondary schools. This research makes an important contribution to the field of education, especially in developing learning strategies that support students' critical thinking skills.

CONCLUSION

Based on the results of research that has been conducted on the Use of Mind Map Learning Models and the Development of Critical Thinking Skills of Class VIII Students in Social Studies Subjects at SMP Negeri 11 Semarang, it can be concluded that:

- 1) The mind map learning method conducted by the teacher proved to be able to improve students' understanding of social studies material. The use of mind maps as a visual aid makes it easy for students to understand the materials provided by social studies teachers. Mind maps can also help students to remember information better, and make learning more interesting and interactive.
- 2) Development of students' critical thinking skills through the process of making mind maps, students are trained to analyze information, evaluate, and connect various relevant concepts and help students to understand social phenomena more deeply and systematically. Group discussions conducted during mind map making also encourage students to communicate well, convey ideas or arguments logically, and accept different views.
- 3) Teacher evaluation related to the use of mind map learning model to improve students' critical thinking skills covers 3 main aspects, namely reflection on the learning process, the accuracy of the teaching module used, challenges, and obstacles in learning. This evaluation aims to determine the implementation of learning in the classroom with teaching modules that have been prepared, observe how students follow the learning process, and identify obstacles that arise during learning. The evaluation carried out is a step in improving the quality of learning in the future so that it is better and can be implemented optimally.

Declaration by Authors

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