

Application of the Mind Mapping Learning Model to Improve Student Learning Outcomes

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ABSTRACT

Learning activities in Social Sciences subjects often cause students to lose focus during the lesson, thereby affecting learning outcomes. This is seen in student learning outcomes in the pre-cycle. Only 4 students, with a 20% achievement rate, met the Minimum Completion Criteria. Therefore, the purpose of this study is to describe the application of the Mind Mapping Learning Model in Social Studies learning to improve student learning outcomes. The research method used was Classroom Action Research (CAR), conducted in two cycles. Data collection used post-test questions, LKPD, teacher activity sheets, and student activity sheets. The study concluded that learning in Social Studies subjects with Hindu-Buddhist History material that applied the Mind Mapping learning model increased. In the first cycle, 11 students (55%) met the standard. In the second cycle, 20 students (100%) met the Minimum Completion Criteria. Therefore, it can be concluded that applying the Mind Mapping learning model in Social Studies subjects can improve student learning outcomes.

Keywords:

Learning Model; Mind Mapping; Learning Outcomes.

ABSTRAK

Aktivitas pembelajaran pada mata pelajaran Ilmu Sosial seringkali menyebabkan siswa kehilangan fokus selama pelajaran, sehingga memengaruhi hasil belajar. Hal ini terlihat pada hasil belajar siswa pada siklus pra-kuliah. Hanya 4 siswa, dengan tingkat pencapaian 20%, yang memenuhi Kriteria Penyelesaian Minimum. Oleh karena itu, tujuan penelitian ini adalah untuk mendeskripsikan penerapan Model Pembelajaran

Mind Mapping pada pembelajaran Ilmu Sosial untuk meningkatkan hasil belajar siswa. Metode penelitian yang digunakan adalah Penelitian Tindakan Kelas (KAR), yang dilakukan dalam dua siklus. Pengumpulan data menggunakan soal post-test, LKPD, lembar aktivitas guru, dan lembar aktivitas siswa. Penelitian ini menyimpulkan bahwa pembelajaran pada mata pelajaran Ilmu Sosial dengan materi Sejarah Hindu-Buddha yang menerapkan model pembelajaran Mind Mapping meningkat. Pada siklus pertama, 11 siswa (55%) memenuhi standar. Pada siklus kedua, 20 siswa (100%) memenuhi Kriteria Penyelesaian Minimum. Oleh karena itu, dapat disimpulkan bahwa penerapan model pembelajaran Mind Mapping pada mata pelajaran Ilmu Sosial dapat meningkatkan hasil belajar siswa.

Kata kunci:

Model Pembelajaran; Mind Mapping; Hasil Belajar.

1. Introduction

Education is a systematic process aimed at optimally developing students' potential through planned learning activities, resulting in human resources possessing both soft and hard skills for future survival (Hidayati et al., 2024). In the context of the Independent Curriculum and the 2013 Curriculum, learning is expected to foster critical, creative, collaborative, and communicative thinking skills. One subject that plays a crucial role in achieving these goals is Social Studies (IPS). IPS not only teaches knowledge but also instills values, social understanding, and skills in historical and geographical thinking. This aligns with Nurlaela et al.'s (2023) explanation, which states that IPS learning is oriented toward student behavior, namely knowledge and understanding, skills, learning attitudes, and social values. Furthermore, according to Magdalena et al. (2021) and Rofiq (2020), social studies is a field of study closely related to students' daily lives, both formally and informally. The younger generation in schools needs to be equipped with social knowledge, social values, and social skills (Astawa, 2019). However, in practice, social studies learning is often considered boring and reduced to mere memorization. However, according to Purnomo et al. (2020), social studies has great potential to develop students' thinking skills because the subject's objects of study revolve around everyday life.

One of the materials in the Social Studies subject that contains character complexity is the material "The Development of Hindu-Buddhist Religion and Culture in Indonesia. This material includes elements of historical chronology and correlation between events, important figures, the development of kingdoms, belief systems, social structures, and archaeological remains. The high information load makes it difficult for many students to understand and connect various concepts. However, the Social Studies materials use selected materials adapted for teaching and educational purposes (Rahman et al., 2022). For this reason, Social Studies learning is designed around the competencies students want to achieve. According to Yusi Natasia & Safrul (2022), stated that the very broad scope of Social Studies material requires various approaches that are interrelated with human social life. Social Studies is a social science that examines the relationship between humans

and the environment (Hasni et al., 2024). As social beings, students are required to expand their social circle by learning social skills (Polat et al., 2022).

According to cognitive learning theory, learning is more meaningful when students can connect new information to their existing cognitive structures. However, lecture-based and text-based learning tends to lead students to memorize without understanding the relationships between concepts, resulting in low learning outcomes (Mawanto, 2018). Even noted that the current school learning model is generally conventional, with teacher-centered instruction.

Therefore, the classroom learning dynamics remain teacher-centered, leaving students passive. This social studies learning dynamic is not unique to certain junior high schools, but is prevalent in almost all other schools. For example, a study (Fadillah et al., 2022) was conducted at Darusallaf Junior High School in Cirebon Regency. Based on the researcher's findings, no varied learning models have been applied in social studies instruction. At the school, teachers only use conventional methods, resulting in a learning process that makes students less active and even passive. In addition, a study by Saroinsong (2023) suggests that students pay less attention to teacher explanations. This learning phenomenon reinforces the statement made by Hernawan Satya Kurnia & Yari Dwikurnaningsih (2019) regarding teachers' perceptions of learning, including diverse student behavior, poor student concentration, less creative teaching, and a lack of interaction in lessons, and a frequent problem is the still-low learning outcomes in certain subjects (Kasanah et al., 2019).

Theoretically, teachers have an important role in the teaching and learning process. The role of teachers includes educating, training, guiding, and directing students towards positive things. Therefore, strategies, approaches, and learning models are key determinants of student success. This explanation aligns with Titu et al.'s (2023) explanation: in the world of education, teachers play an important role. In addition to teacher performance, strategies, approaches, and learning models also determine educational success. A learning model is a plan or pattern used as a guideline for classroom learning (Rozhana & Harnanik, 2019) and serves as a framework for the design and implementation of learning (Wati, 2022).

To address these issues, a learning model is needed that can organize complex material into simpler, more meaningful, and easier-to-remember materials. One model considered effective is the Mind Mapping learning model. The concept, initiated by Tony Buzan, is a thinking tool (Fauzi, 2020). Mind mapping is a method/technique for recalling and refining information (Sholikhudin, 2023), and the learning model used trains the ability to present material content using mind mapping (Maharrany et al., 2022). According to Shoimin (Iryanto et al., 2022), the Mind Mapping learning model is a creative way for each learner to generate ideas, record what is learned, or plan new assignments. According to Muhtar (2022), Mind Mapping is a creative, effective way to take notes and literally maps students' thoughts. Its main purpose is to make it easier for students to understand and remember the material taught by the teacher (Babadoğan, 2025). In the context of social studies learning on Hindu-Buddhist material in Indonesia, mind mapping is considered relevant. It can help visualize important concepts, such as the locations of kingdoms, main figures, and belief systems (Syafri, N. &. 2022). Because learning at various levels of education aims to equip students with creative thinking and to produce creative ideas in problem-solving (Khoiroh et al., 2024).

Thus, the application of mind-mapping learning models is not merely an alternative strategy but a necessity for providing more active, creative, and meaningful social studies learning. By using

mind maps, it is hoped that students will better understand the material on Hinduism and Buddhism in Indonesia, develop structured thinking skills, and improve learning outcomes. Therefore, research on the application of mind-mapping learning models is important to determine their effectiveness in improving the quality of student learning processes and outcomes in social studies.

2. Methods

This study employed Classroom Action Research (CAR) as the method. The study took place at State Junior High School (SMP) 5 in Southeast Maluku Regency.

2.1. Research Design

The research activities were conducted through two cycles, beginning with the pre-cycle stage. No treatment or action was taken during this phase. The research approach adopted the research model developed by Kemmis and McTaggart (1998). This model was chosen because it is relevant for addressing learning issues that frequently arise in the classroom and provides opportunities for teachers to reflect on and continuously improve their learning (Yafiina et al., 2025).

2.2 Research Subjects

The research subjects were 20 seventh-grade social studies students, studying Hinduism and Buddhism in Indonesia. The subjects had varying abilities, ranging from moderate to very low. The use of the CAR method aimed to identify and improve the quality of planning, learning processes, and outcomes (Taswadi et al., 2025), as well as learning practices (Suwartono, 2024).

2.3 Data Collection Techniques

The data collection for this study included both test and non-test questionnaires. Data collection techniques included observation and testing.

2.4 Data Analysis Techniques

Data analysis was conducted through teacher activity analysis. Observation sheets filled out during the lesson were used to collect data on teacher activities. Furthermore, student activity analysis was conducted through observation sheets to document the processes and developments of activities during the learning process. The final data analysis was conducted through student learning outcomes.

3. Results and Discussion

3.1 *The Learning Process of Social Studies Subjects with the Application of Conventional Learning Models*

This stage begins with a pre-cycle in grade VII. According to Siti Soleha et al. (2019), pre-test results are used to determine students' initial abilities regarding the material presented and their mastery of the history-social studies subject matter before taking action in learning using the Mind Mapping learning model. The implementation description is in the following table:

Table 1. Stages and Description of Pre-Cycle Learning Activities

Stages of Learning	Description of Activities
Preliminary Activities	<ol style="list-style-type: none"> 1. The teacher greets and prays together. 2. The teacher asks about the students' condition. 3. The teacher prepares the class for the start of the lesson. 4. The teacher takes attendance. 5. The teacher directs the students to sing the Indonesian national anthem as a form of nationalism. 6. The teacher begins the apperception.
Core Activities	<ol style="list-style-type: none"> 1. The teacher introduces the social studies topic. 2. The teacher introduces material about the history of Hinduism and Buddhism in Indonesia. 3. The teacher provides an opportunity for students to ask questions.
Closing	<ol style="list-style-type: none"> 1. The teacher concludes the material. 2. The teacher gives students a test. 3. The teacher motivates students. 4. The teacher informs students about the material for the next meeting. 5. The teacher closes the lesson with a greeting and a prayer.

The results of student tests in the pre-cycle learning process can be described in the table below:

Table 2. Pre-Cycle Test Results

Intervals	Initial/Pre-Cycle Scores		Test	Classification
	Frequency	Presentation		
80 - 100	1	5%		Very good
70 - 79	3	15%		Good
60 - 69	11	55%		Enough
45 - 59	5	25 %		Not Enough
0 - 44	-	-		Fail
Amount	20	100%		-

Based on the pre-cycle test results in the table, 1 student with a 5% score achieved an 80-100, which is classified as very good. And 3 students, or 15%, obtained scores of 70-79, classified as good. 11 students, or 55%, obtained scores of 60-69, classified as sufficient. Meanwhile, 5 students with a 25% score obtained scores of 45-59 and were classified as less or low. Therefore, student learning outcomes in the pre-cycle indicate that some students have not achieved the school's Minimum Completion Criteria (KKM) score of ≥ 75 .

Based on the results of the pre-cycle test presented in Table 2, student learning outcomes have, in general, not met the Minimum Completion Criteria (KKM). The contributing factor is that teachers still apply conventional learning models, or, according to Purnomo et al. (2020), that social studies teachers have not implemented the concept of dialogic learning. (Astra et al., 2020), Rahayu & Hardini, (2019) states that the traditional approach is characterized by teacher-centered, one-way communication from teacher to student, leading students to appear passive and unfocused in the learning process. The subject of learning is explaining the material to the class, with a learning cycle

in which students only listen and work on problems (Rohmah & Kaltsum, 2023). Students are not required to analyze the material taught by the teacher; they are only required to use traditional methods critically.

3.2 Social Studies Learning Process by Applying the Mind Mapping Learning Model

3.2.1 Cycle 1

3.2.1.1 Action Planning

- a. Determine the material to be taught, namely the history of Hinduism and Buddhism in Indonesia.
- b. Design a Learning Implementation Plan (RPP) for each cycle, consisting of the school identity, subject/theme identity, class, core competencies, basic competencies, competency achievement indicators, learning materials, learning models, media and learning resources, and learning stages.
- c. Develop student evaluation instruments in the form of test questions and student worksheets.
- d. Complete instrumentation documenting teacher and student activities during the learning process.

3.2.1.2 Implementation of Action

The purpose of implementing the action at this stage is to advance the learning process using the Mind Mapping learning model, in accordance with the predetermined learning plan. The learning stages are as follows.

Table 3. Learning Stages

Stages of Learning	Description of Activities
Preliminary Activities	<ol style="list-style-type: none"> 1. The teacher greets and prays together. 2. The teacher asks about the students' condition. 3. The teacher prepares the class for the start of the lesson. 4. The teacher takes attendance. 5. The teacher directs the students to sing the Indonesian national anthem as a form of nationalism. 6. The teacher begins apperception. 7. The teacher provides motivation.
Core Activities	<ol style="list-style-type: none"> 1. The teacher introduces the Social Studies topic. 2. The teacher divides students into 5 groups of 4 students each. 3. The teacher distributes learning materials on the History of Hinduism and Buddhism in Indonesia. 4. Students are allowed to read the materials distributed by the teacher. 5. The teacher allows students to ask questions related to the material being studied. 6. The teacher distributes the questions provided in the Student Worksheet (LKPD). 7. The teacher guides students through an example of creating a Mind Map. 8. The teacher starts in the center of a blank sheet of paper with the long side horizontally, and students observe the teacher's

explanation.

9. The teacher places a picture of Hindu-Buddhist kingdoms in the center of the paper.
10. The teacher uses colored pencils to write what is in the picture.
11. The teacher draws connecting lines.
12. Then, the teacher writes one keyword on each line so that students can understand.
13. The teacher returns the pictures to each group to practice creating a Mind Map.
14. Each group works on the Student Worksheet in the form of a Mind Map with the teacher's guidance.
15. When the groups have completed their worksheets, the teacher asks a group representative to read out the answers. each group
16. The teacher asks students to compare the work of other groups
17. After that, the teacher evaluates the group's work results to give them a grade.

Closing

1. The teacher provides an opportunity for students to summarize the lesson and provides reinforcement.
 2. The teacher gives students a post-test.
 3. The teacher distributes reflection sheets to students.
 4. The teacher provides a moral message to students related to the Hindu-Buddhist material, describing the diversity of beliefs in Indonesia.
 5. The teacher presents the material for the next meeting.
 6. The teacher closes the lesson with greetings and a prayer.
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3.2.1.3 *Observation Activities*

Observations are conducted during the learning process, and the activities observed are related to teacher and student activities. The purpose of the observation sheet is to collect data related to teacher and student activities during the learning process

3.2.1.4 *Reflection*

The reflection section aims to recall all teacher and student activities throughout the learning process. According to Rani Noer Suciani et al. (2023), the purpose of reflection is to identify shortcomings in learning activities and plan improvements. The results of the reflection in cycle I can be explained as follows:

a. Teacher Activities

During the teacher activities in Cycle I, the teacher did not guide each group equally. Instead, the teacher tended to stay with specific groups or stand at the front of the class. Furthermore, the allotted time was too short, resulting in students' lack of focus while reading the material.

b. Student Activities

There were still several shortcomings in student activities during Cycle I. Some students were inactive in groups. Furthermore, students lacked focus, leading to

discussions that strayed from the learning material. Some students were also reluctant to ask questions.

c. Student Learning Outcome

Based on the learning process, student learning outcomes can be described in the following table.

Table 4. Test Score Interval and Cycle I Classification

Intervals	Cycle Test Value I		Classification
	Frequency	Presentation	
80 - 100	4	20%	Very good
70 – 79	7	35 %	Good
60 -69	6	30%	Enough
45- 59	3	15%	Not Enough
0 – 44	-	-	Fail
Amount	20	100 %	-

The test results data of cycle I showed that 4 students or 20% succeeded in obtaining a score between the interval of 80-100 with a very good classification, 7 students or 35% obtained a score between 70-79 with a good category, 6 students or 30% obtained a score between 60-69 with a sufficient classification and 3 other students or 15% obtained between 45-59 with a less classification while no students failed. The test results in cycle I showed that 11 students had met the minimum completeness criteria (KKM) and achieved a score of 75. Thus, the test results showed that in cycle I, the learning outcomes, as reflected in students' scores using the Mind Mapping learning model (concept maps), began to increase. Student learning outcomes improved more than the pre-cycle test results.

3.3 *Social Studies Learning Process by Applying the Mind Mapping Learning Model*

3.3.1 *Cycle II*

In cycle II, the material taught in social studies remains the same as in cycle I. However, with different indicators or sub-topics, namely, the Characteristics of Community Life during the Hindu-Buddhist Kingdom Period. The learning steps are as follows:

3.3.1.1 *Action Planning*

- a. Determine the material to be taught, namely the history of Hinduism and Buddhism in Indonesia.
- b. Design lesson plans for each cycle, consisting of school identity, subject/theme identity, class, core competencies, basic competencies, competency achievement indicators, learning materials, learning models, media and learning resources, and learning stages.
- c. Develop student evaluation instruments in the form of test questions and student worksheets.
- d. Complete instrumentation documenting teacher and student activities during the learning process.

3.3.1.2 *Implementation of Actions*

The actions carried out in cycle II are in accordance with the learning design by implementing the Mind Mapping learning model as created in the planning. The teacher provides an explanation regarding the lesson being taught and the indicators of success to be achieved. The teacher opens the lesson by explaining the material and providing motivation and perspective. At this stage, students are expected to: (a) be able to make Mind Maps properly and correctly, (b) Students can understand the content or material and discuss connecting lines according to the main topic proposed according to the instructions given by the teacher, (c) be able to present the results of group work made through discussion, (d) be able to correct errors in each group.

Learning activities in cycle II were carried out with more thorough preparation compared to cycle I. When learning improved in cycle II, it was expected that the student learning process and outcomes would also improve optimally. In this meeting, the teacher began providing lesson materials using the Mind Mapping learning model. The teacher distributed teaching materials and asked students to read and discuss them. Then, students made brief notes and presented the results in groups through discussions, following the learning steps. Students were allowed to ask questions, express opinions, and answer questions from other groups. Each group competed to present the outcomes of their discussions based on the mind map. Students were allowed to reflect, organize, and test ideas in their group discussions. The sequence of learning steps in cycle II was the same as the learning actions in cycle I. The learning plan still refers to the steps for creating a mind map as in cycle I, taking into account the revisions and improvements made to avoid repeating the errors from that cycle. The learning process includes the following steps:

- a. The researcher and teacher instructed the students to sit in their respective groups
- b. The teacher prepared the lesson material and conveyed the learning objectives

In this second cycle, the teacher allowed students to discuss, in their groups, making a mind map or concept map. The sequence of steps in the Mind Mapping learning model in cycle II can be explained by the researcher as follows: (1) The researcher and teacher divided the students into 5 (four) groups with the same number of members as in cycle I, namely 1 group of 4 students. (2) Next, the researcher and teacher arranged the process of making the Mind Mapping. (3) Each group prepared manila cardboard, colored markers, and rulers. (4) Students used an interesting picture in the center position and wrote the main topic or keywords. (5) Students made a concept map using colors to make it more attractive. (6) Students were asked to connect the main branches using rulers and colored markers, and connect the branches further according to the lesson material. (7) Students used one keyword or note for each line. (8) The notes that students make form a pattern of interrelated ideas, with the main topic in the middle and sub-topics and details as branches.

At the end of the Mind Mapping learning process, each group was given several minutes to discuss and take important notes. After all the mind-mapping entries had been paired, the teacher

administered an assessment. The teacher, together with the students, concluded the lesson material. The final step in the learning activity was for the teacher to compare each group's results and provide any necessary reviews on the topic. During the teaching and learning process in this second cycle, the researcher and the teacher observed the students' mind-mapping process using observation sheets and documented the learning process. During the learning process, the teacher occasionally helped groups that were having difficulty creating mind maps and explained questions for students who did not understand. The researcher also provided motivation and took photographs documenting the learning research. Observations made by the researcher and the teacher included students' attention and seriousness during the learning process, as well as improvements in student learning and outcomes.

The actions in cycle II provided optimal learning processes and outcomes, thereby enhancing students' social studies learning. Both students and teachers performed well, demonstrating a focus on mind mapping, not rushing, but rather on connecting topic lines in a coherent flow using attractive colors. Students' outcomes were also excellent, as they appeared serious and enthusiastic in creating concept maps. The teacher's activities in cycle II demonstrated optimal implementation of the mind-mapping model, demonstrating students' ability to understand and follow the steps for creating them correctly. Furthermore, throughout the learning process, the teacher consistently provided guidance and motivation, ensuring students' interest and success. At the end of the learning process, the teacher compared each group's work and the accuracy of their questions and answers for each concept map. Afterward, the teacher provided reviews and summaries as needed. At the end of the learning process, students completed a final test (cycle II) to assess their learning outcomes. The following table summarizes the results of the test:

Table 5. Cycle Test Score Percentage II

Intervals	Cycle Test Value II		Classification
	Frekuensi	Presentase	
80 - 100	12	60%	Very good
70 - 79	8	40 %	Good
60 -69	-	-	Enough
46- 59	-	-	Not Enough
0 – 44	-	-	Fail
Amount	20	100 %	-

According to the test results in cycle II, 12 students, or 60%, successfully obtained a score between 80-100, with a very good classification; 8 students, or 40%, obtained a score between 70-79, with a good classification. The test results in cycle II showed that 20 students had successfully achieved the minimum completeness criteria (KKM) of 75. Thus, the test results indicate that, in cycle II, student learning outcomes can be improved using the Mind Mapping learning model. The Mind Mapping learning model is an effective approach to developing students' critical thinking skills. This learning model allows students to organize information visually, making it easier for them to understand the relationships among the main concepts in social studies material. The findings in this study align with the theory put forward by Buzan (Ramadhan & Purnomo, 2025), which states that mind maps are a learning tool that engages 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.

4. Conclusion

Based on the results and discussion, it can be concluded that applying the Mind Mapping learning model in social studies subjects can improve student learning outcomes. Student learning outcomes exceed the specified standards or Minimum Completion Criteria (KKM) ≥ 75 . Student learning outcomes are measured using post-test questions administered at the pre-cycle, cycle I, and cycle II. Improving student learning outcomes in social studies subjects by applying the Mind Mapping learning model is achieved through learning modification: delivering material using a modified Mind Mapping method; students look for keywords in the reading material; and the teacher asks students to make a Mind Map. Students present the results of the Mind Mapping.

In the pre-cycle learning of Social Studies subjects using the Conventional learning model, only 4 students (20%) met the KKM. In the learning of Social Studies subjects using the Mind Mapping learning model carried out in cycles I and II, there was an increase. In cycle I, 11 students, or 55%, met the KKM standard. In cycle II, student learning outcomes with a percentage of 100% or 20 students met the KKM.

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