

# Application of the Mind Mapping Method to Natural Resources in Class IV Elementary Schools

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**Abstract:** This research aims to improve learning results of the social studies content of natural resources materials through the Mind Mapping model in class IV Public Elementary School (SDN) Gembongan 5, Blitar, Indonesia. The results showed that teacher activity had increased, on cycles of 1 final meeting gained 93.35% and became 100% at the end of cycle II. Student activity has increased from 64.59% to 84.7%. The outcome of learning aspects of knowledge on the cycle I of the final meeting was obtained the classical 55.86% of the submission increased to 94.11% at the end of the cycle II meeting.

**Keywords:** learning outcomes, social science, mind mapping

## 1. INTRODUCTION

The problem that was obtained from the observation in class IV at SDN Gembongan 5 is: (1) the teacher dominates in the learning activity, meaning the teacher explains the material then the students just sit on and gather; (2) in the process of rarely use learning media; (3) teachers always use the method of lectures; (4) teachers also have not used the learning model; (5) students' interest in low social studies subjects, marked from 17 students who earned the rate reached the KKM is 7 students; and 10 students have not reached KKM ( $\geq 70$ ).

Regulation of Ministry of Education and Culture (Permendikbud) Number 103 Year 2014 article 1 and Article 2 explains that learning is the process of interaction between learners and educators and learning resources in a learning environment. Learning is carried out based on activities where learning must be interactive and inspiring, and the learning that is interacted, challenging and motivating students to active, in- Able to provide space for students to hone creativity and self-reliance according to students' talents, interests, abilities and physical and psychological development. In accordance with the observation results, interviews and the content of Permendikbud number 103-year 2014 occurs gaps in the learning process. The solution to solving this gap is to implement the Mind Mapping learning model.

Mind Mapping's learning Model or mind mapping according to Shoimin (2013) can help learners experience difficulties, know what to write, and how to organize ideas. According to Huda (2013) The Mind Mapping model is used to allow students to more actively and independently review the material in accordance with the students' creativity, so it is easy for them to learn and understand the material. With regard to IPS subjects whose material

descriptions do many make students bored easily, and this learning model is able to overcome it. Students can be motivated to record material, and students become more creative in writing materials using symbols, colors according to their terms so that students can record concepts according to the material. In addition, students are easier in remembering learning materials. It is also aligned in Buzan (2009) Mind Mapping is an easy way to put information into the brain and retrieve information from outside the brain.

The Mind Mapping Model can also train creativity and understand Social Studies lesson material on natural resources in the form of Mind Map. Not only summarizes or records the lesson material but the student makes interesting notes with the use of the desired color or image. Illustrated or colored notes impact students' interest in learning the material, so students are expected to be easier at capturing lesson materials.

## 2. METHOD

This research uses a qualitative approach with the type of class action research (PTK). The source of research data is grade IV teachers and students of 17 children. Research data includes process data and learning outcomes. Process Data is derived from observations of student and teacher activity, documentation, and field records. Learning Data is obtained through the assessment of knowledge, attitudes and skills of students. The research data that has been collected is then analyzed, the step-in data analysis is data reduction, data presentation, and withdrawal of conclusions. Data reduction is the activity of selecting, focusing, and simplifying the data, once the data is reduced as a table and narrative text, the latter is a withdrawal of conclusions to determine the classical. The

meeting, so it can be known an increase or not in each cycle.

**3. RESULTS**

The results of the study include two types of data, namely the process data consisting of teacher activities and student activities, the second is the result of learning data that includes the results of learning aspects of knowledge, attitudes and skills. Teacher activity of meeting I was 86.7% and included good criteria. Then the score percentage for meeting II is 100% included in the criteria is very good. The average percentage of teacher activity scores on cycle I was 93.35% including very good criteria. From the observation of teacher activity at meeting I there are 13 visible descriptors and meeting II there are 15 visible descriptors. This indicates that there is an increase in the teacher activity on the I cycle. Furthermore, at Cycle II meeting I reached 100% and at meeting II reached 100% with excellent criteria.

Student activities at meeting I amounted to 57.64% of the criteria need guidance, and then increased at meeting 2 so that the percentage of student activity amounted to 72.86% with sufficient criteria. Obtained an average percentage of 64.86 with less criteria. Then at cycle II increased from meeting I reached 81.17% and increased to 88.23% at meeting II. Below is the recapitulation table of teacher and student activity in learning activities using the Mind Mapping model (Table 1).

**Table 1 Recapitulation of Observation Results Teacher and Student Activity in Learning Activities using Model Mind Mapping**

No	Aspects	Cycle I		Cycle II	
		Meeting 1	Meeting 2	Meeting 1	Meeting 2
1	Teacher Activities	86,7%	100%	100%	100%
	Criteria	Good	Excellent	Excellent	Excellent
2	Student Activities	57,64%	72,15%	81,17%	88,23%
	Criteria	Need Guidance	Medium	Good	Good

The next is the exposure of learning outcomes that includes the assessment aspects of attitude, skills and knowledge. Assessment of attitudes covering the 3 aspects i.e. discipline, responsibility and self-confidence, the recapitulation of the assessment attitude on cycle I can be seen in table 5.

According to Table 2 it can be concluded that in all attitudes are assessed to have increased both from the attitude of discipline, responsibility or confidence. At the disciplinary stance at meeting I there were 15 students escalated to 17 students at the meeting II, then the original responsibility attitude there were 14 students rose to 17 students at meeting II and confidently at meeting I appeared 4 students increased to 6 students. The dominant stance appearing on the I cycle is a disciplined attitude with

an average emergence of 16 students. Then the attitude of responsibility with the average emergence of 16 students the least attitude appearing in cycle I is a confident attitude with the average emergence of as many as 5 students. The attitude assessment recapitulation on cycle II can be seen in Table 3.

Table 3 shows that the attitude of discipline and responsibility experiences an average occurrence of 17 students, in which each meeting appears 17 students each. As for the confident attitude increased from the meeting I originally 9 students went up to 13 students.

**Table 2 Reticulation of Cycle Attitude Assessment I**

Cycle I	Attitudes		
	Discipline	Responsibility	Confidence
	Appear	Appear	Appear
Meeting I	15	14	4
Meeting II	17	17	6
Amount	32	31	10
Average cycle I	16	16	5

**Table 3 The Attitude Assessment Cycle II**

Cycle I	Attitude		
	Discipline	Responsibility Experiences	Confident
	Appear	Appear	Appear
Meeting I	17	17	9
Meeting II	17	17	13
Amount	34	34	22
Average Cycle II	17	17	11

Table 3 shows that the attitude of discipline and responsibility experiences an average occurrence of 17 students, in which each meeting appears 17 students each. As for the confident attitude increased from the meeting I originally 9 students went up to 13 students. Teachers also give assessment of student skills when students create Mind Mapping. Cycle I Skill Assessment Data can be seen in Table 4.

In cycle I the skill value is increased from meeting I have 11 students completed and at meeting II to 13 students. At the meeting I obtained an average of 66 with a percentage of the submission of 64.70% (11 students completed). At meeting II was obtained an average of 82.58 with a percentage of the submission of 76.47% (13 students completed). While the grade of the class submission in cycle I is 70.58% with the C predicate (sufficient criteria).

Cycle II skill scores increased from meeting I had 13 students completed and at meeting II to 17 students or all students completed. At the meeting I obtained an average of 82.58 with a percentage of the submission of 76.47% (13 students completed). At meeting II was obtained an average of 82.94 with a percentage of the submission of 100% (17 students completed). Meanwhile, the class's submission in cycle II amounted to 88.23% with B predicate (good criterion). The following skills Assessment recapitulation in Table 4.

**Table 4 The Skill Assessment Recapitulation**

No	Cycle I		Cycle II	
	Meeting 1	Meeting 2	Meeting 1	Meeting 2
1	11 (64,70%)	13 (76,47%)	13 (76,47%)	17 (100%)
Criteria	Less	Enough	Enough	Excellent

**Table 5 Knowledge Assessment Cycle I Recapitulation**

Cycle I	Score	Average	Completed	
			Completed	Incomplete
Meeting I	1.129	66,41	7 (41,17%)	10 (58,82%)
Meeting II	1.276	75,05	12 (70,56%)	5 (28,41%)
Average value		70,73		
Completed Cycle I		55,86%		

The recapitulation of the Student Knowledge assessment cycle I can be seen in Table 5. According to table 5 above, you can know that at meeting I and meeting II increased from 7 students completed to 12 students. At the meeting I obtained an average of 66.41 with a percentage of the submission of 41.17% (7 students completed). At the meeting II obtained an average of 75.05 with a percentage of the compensation of 70.56% (12 students who were completed).

The percentage of class submission in cycle I is 55.86% with an E predicate (including the criteria need guidance). In cycle I acquired classical tenuity of 55.86% so it can be concluded that the submission in cycle I has not reached the 80% mentioned Arifin (2016), then the research continues to cycle II. The recap of cycle II knowledge assessment can be seen in Table 6.

**Table 6 The Knowledge Assessment Cycle II Recapitulation**

Cycle II	Score	Average	Completed	
			Completed	Incomplete
Meeting I	1292	76,00	15 (88,23%)	2 (11,76%)
Meeting II	1418	83,41	17 (100%)	-
Average value		79,70		
Completed Cycle II		94,11%		

According to the table above, you can know that at meeting I and meeting II increased from 15 students who completed to all students or 17 students who completed. At the meeting I obtained an average value of 76.00 with a percentage of compensation of 88.23% (15 students were completed). At meeting II was obtained an average value of 83.41 with a percentage of the compensation of 100% (17 students were completed). Based on the recapitulation result in table 4.9, the percentage of the class's submission to the cycle II of 94.11% predicate is achieved with excellent criteria.

#### 4. DISCUSSION

The application of Mind Mapping model in class IV of SDN Gembongan 5 has been done during two cycles and

according to the steps in Lesson Plan (Rencana Pelaksanaan Pembelajaran / RPP) but in cycle I the learning activities run less well. The observation of the activity of meeting teacher I was 86.7% criterion. Teachers in the meeting I have not done the Mind Mapping model steps as a whole. The aspect that has not been seen is the teacher has yet to re-explain the material after presentation and the teacher has not done reflections.

In addition, teachers still need to manage the class further, for example, in controlling students who are less concerned when teachers explain the material and to passive students. Teachers should also repeat the explanation several times for students to understand how to create Mind Mapping. Some of these things because: (1) The teacher is still lacking in confidence; and (2) need habituation to deal with the entire student character.

The score percentage for meeting II is 100% criterion is very good. Teachers in meeting II have taken all steps of learning in RPP. Teachers have also carried out reflections from the first meeting. Only the teacher's voice is less loud so the students on the back are less attentive to the teacher. So, the average percentage of teacher activity scores on cycle I is 93.35% with excellent criteria. Results of observation of student activity in cycle I meeting I is 57.64% criteria need guidance. Students are less enthusiastic in meeting I.

Problems of the student activities that arise among others: (1) students are still unfamiliar with learning using the mind mapping model, so teachers need to provide explanations several times so that students can understand the steps of creating mind mapping; and (2) students are not confident because they feel unfamiliar with their teachers, so teachers need to approach that students are confident in asking or responding during presentation activities, in addition teachers need to give motivation and mentoring on passive students.

Then at the meeting II the observation results of the student activity increased by 72.15%, resulting in an increase of 14.51%. From the recapitulation results obtained average percentage cycle I of 64.89% D predicate with less criteria. Students have been enthusiastic about learning just that there are no students who dare to respond when the presentation activity is because the students are not confident. In addition, there are students who play alone on the back and do not focus on the lesson because the voice of the teacher who is less loud causes lazy students to listen to the teacher explanation.

The study expressed by Baharuddin and Wahyuni (2015) is the process of changing both in terms of knowledge, affective and psychomotor in the self of a student so that in the cycle I judging from the realm of students 'attitude look less than the need was held cycle II to correct the deficiency.

In cycle II observation the results of teacher activity increased. At the meeting I the percentage was 100%. Teachers are already conducting learning activities in accordance with the RPP which has been compiled with

attention to the problems and deficiencies that arise in the I cycle so that learning can run better and according to the arranged scaffolding. Teachers are also confident in their learning activities. Reflections from cycle I have been done by the teacher well.

Then the percentage score for meeting II is 100%. Teachers are already doing activities according to the steps on the RPP. Teachers also approach, mentoring and motivate students who are passive or lacking confidence in learning. Teachers have also managed classes better than those done at the previous meeting. The teacher has also explained in detail the steps of how to create Mind Mapping. Acquired average percentage of teacher activity scores on cycle II is 100% predicate A very good criterion. Results of observation of student activity in cycle II meeting I is 81.17% good criterion.

Students have also been enthusiastic when learning but there are no students who dare to respond during presentation because students are still not confident. There are still students who play alone on the back but are immediately reminded by the teacher. Then increased at meeting II gained an average percentage of 88.23% resulting in an increase of 7.06%. Result of the recapitulation of the average percentage of 84.7% predicate B with good criteria. So that the students 'activities in learning ii have improved, namely: (1) the atmosphere of the class has been more conducive and calm; (2) students already understand how to create mind mapping; (3) students are more confident in asking or communicating presentations and some students are already active in responding to the group's answers to presentations; and (4) students become more creative in making mind mapping and this is because students are already adapting to learning using the Mind Mapping model.

The increased student activity described above corresponds to the advantages of the Mind Mapping learning model presented by Michalko (Buzan, 2005), among others: assisting students in activating the abilities of his entire brain, helping students To stay focused on the subject, helping to demonstrate relationships between the mutually separated parts, giving a clear picture of the overall information gained, allowing students to group concepts, and helping students to Compare (Putra, Ruminati, & Al Atok, 2017) . In addition, Mind Map can help students solve a problem, make decisions, and clarify key topics so that students can work on tasks even if they are given many tasks (Huda, 2013; Krismon, et al 2020).

The results of the percentage activity score of students cycle I with sufficient criteria, increasing to good criteria on cycle II. This proves that the application of Mind Mapping model can increase student activity, student confidence, hone students 'creativity, and facilitate students in understanding the material (Nawawi, Mahanani, & Putra, 2018).

Based on the explanation above, it is concluded that the learning in natural resources material that has been carried out in cycle I and II shows an increase in activity

performed by teachers and students in implementing the Mind Mapping model.

Learning in natural resources using the Mind Mapping model at SDN Gembongan 5 is carried out to improve student outcomes, in three spheres of knowledge, attitudes and skills. This is in accordance with the Ministerial regulation of the Minister of Education and Culture Number 23 of 2016 on the education Assessment Standard which states that student learning outcomes include the realm of attitude, knowledge and skills. Therefore, assessment of results and learning process is interconnected, because results are the result of a learning process that students do.

The activities were performed on Thursday, February 7, 2019, with a total of 17 students. At the preview stage of the researcher as an observer who performs observations on the study in class IV conducted by class IV teachers. In this activity, the average value of 51.47 is achieved. Of the 17 students only 7 students reach the passing grade while 10 other students have not reached the passing grade. It shows that the student's learning percentage only reaches 41.17%.

After the activities, the activity of the cycle is continued, consisting of assessment of knowledge, attitudes, and skills. In the realm of the knowledge cycle I gained a classical survival of 55.86% with the predicate of E criteria need guidance. Students who have been accomplished are from 7 students at meeting I to 12 students at the II meeting. Students still need guidance in learning activities, students need to be explained in detail and clearly how to create a mind map, and students still need to adapt to the teacher.

Then continued cycle II the realm of knowledge that reached the classical survival of 94.11% with predicate A criteria is very good. Students who have achieved a complete value of 15 students at the meeting I become 17 students at the II meeting. Improved learning outcomes that students have achieved in cycle I and cycle II due to changes made by the teacher in conveying the material and mind map steps clearly and according to reflections performed at the meeting Previously, in addition to managing teacher classes has also been well adapted. Thus, based on the pre-determined classical survival of 80% according to Arifin (2016), in cycle II can be completed.

In the realm of the attitude of all observed attitudes (discipline, responsibility and self-esteem) increased. On average, the emergence of the discipline and responsibility of cycle I reached 16 students, and the attitude of confidence reaches 5 students. Furthermore, in the cycle II the realm of the observed attitude increased from the cycle I. The average appearance on the discipline and responsibility of reaching 17 students and confident attitude reaches 11 students. Cycle II can be completed because it exceeds the specified target. The increased outcome of observed attitudes can increase as the teacher has already done a good reflection on the cycle I, to approach students so that students become accustomed to

the teachers and learning performed using the Mind model Mapping.

The skill realm of the cycle I gained a classical survival of 70.58% while the cycle II reached 88.23%. In the I-cycle of 11 students, students at meeting I became 13 students at meeting II. Then in the cycle of II the student's submission reached 13 students at meeting I and became 17 students at the II meeting. So, on cycle II can be completed. The increase in the outcome of the skills can increase because the teacher has already done the reflection on the cycle I well and correctly, in addition students have also adapted to the learning done using the Mind Mapping model.

The learning process from the students 'learning process or the teacher's teaching process affects students 'learning outcomes in both attitude, knowledge and skills. This is in line with the opinions expressed by Susanto (2016) learning outcomes are the ability that students gained after through learning activities. Because learning is a person's attempt to acquire a sedentary knowledge or change of behavior. As a teacher, you have to set a learning goal to measure students 'success in their learning activities.

The results of the study showed that while learning gained the learning outcomes of students experienced improvement. From these results, it can be said that the use of the Mind Mapping model on the learning of natural resources materials can improve the learning outcomes of grade IV students at SDN Gembongan 5. It is in accordance with the results of the research of Fauziah (2017) where there is an increase in learning outcomes for students who perform learning activities, especially the social studies payload using the Mind Mapping model.

## 5. CONCLUSION

The application of the Mind Mapping model on natural resources materials in grade IV students at SDN Gembongan 5, has been implemented very well in accordance with the steps of Mind Mapping model. Known from the average outcome of observing teacher activity on cycle I is 93.35% criterion is very good then 100% criterion is very good. In addition, the observation results of students 'activity on cycle I from the average percentage of 64.89% D predicate with less criteria to 84.7% of B predicate with good criteria. Thus, the implementation of Mind Mapping model can increase student activity, student confidence, enhance student creativity, and facilitate students in understanding the material. Therefore, it can be concluded that the learning in natural resources material that has been carried out in cycle I and II shows an increase in activity performed by teachers and students in implementing the Mind Mapping model.

Students learning results in natural resources materials using the Mind Mapping model have increased. In the realm of the knowledge cycle I gained a classical survival of 55.86% with the predicate of E criteria need

guidance. Continued cycle II the realm of knowledge achieving A classical survival of 94.11% with predicate A criteria is very good. In the realm of the average appearance of the discipline and responsibilities of the cycle I reached 16 students, and the attitude of confidence reaches 5 students. Furthermore, in cycle II the realm of the observed attitude increased from the I cycle. The average appearance on the discipline and responsibility of reaching 17 students and confident attitude reaches 11 students. Then, in the sphere of skill in cycle I acquired classical survival of 70.58% while in cycle II reached 88.23%. Inferred from all spheres of knowledge, attitudes and increased skills, so it can be said that the use of the Mind Mapping model on the study of natural resources materials can improve students 'learning outcomes at SDN Gembongan 5.

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