

## **Increasing Students' Learning Outcomes through Cooperative Learning Model Mind Mapping Type**

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### **Abstract**

The purpose of this study is to find out how to apply the cooperative learning model, mind mapping type to improve the learning outcomes of elementary school students. This type of research is classroom action research which consists of two cycles which each cycle is carried out 3 times. The research procedure includes planning, implementing actions, observing and reflecting. The subjects in this study were 26 fourth grade students at SD Inpres Batanghari Jambi. The research result showed that in the first cycle, from 26 students, only 14 students completed individually, with an average score of 67.30. This has met the minimum completeness criteria or is in the moderate category, but this result does not meet the classical completeness criteria because only 53.85% of students have studied thoroughly, while the classical completeness that must be achieved is 85% of the total number of students. In cycle II, from 26 students, there were 24 students (92.31%) who met the minimum completeness criteria. Classically, it has also been fulfilled, namely the average value obtained is 80.19 or is in the high category. Based on the results of the analysis, it was concluded that the learning outcomes of fourth grade elementary school students through the application of the Mind Mapping cooperative learning model had increased.

### **Keywords**

cooperative learning model, learning outcome, mind mapping type

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## INTRODUCTION

Education that is able to support development in the future is education that is able to develop the potential of students (Yasmin, Sohail, Sarkar, & Hafeez, 2017). Therefore those concerned are able to face and solve the problems of life they face. The concept of education is increasingly important when a person has to enter life in society and the world of work, because the person concerned must be able to apply what he has learned in school to deal with the problems faced in everyday life today and in the future.

According to Fox, Pittaway, and Uzuegbunam (2018) education can be seen from the relationship between the elements of learners (students), educators (teachers), and the interaction of both in the educational effort. The relationship between the elements of learners (students) and educators (teachers) should not only be one-way in the form of delivering information from teachers to students. The teaching and learning process is actually better if it is carried out actively by both parties, namely the teacher and students so that there is a balanced interaction between both.

Still often encountered in the teaching and learning process of language subjects at the elementary school unit level, teachers use conventional learning (Koul, Lerdpornkulrat, & Poondej, 2018). In line with that, (Kövecses-Gósi, 2018) stated that learning relies more on the lecture method so that students become bored and less active. Language subjects are still considered as subjects that require the ability to memorize, without the need for efforts to understand and relate to problems in everyday life. Basically, language subjects are directed so that students have mastery of concepts about social life. Language lessons should be able to make students active in the teaching and learning process in the classroom. Various problems in teaching and learning activities in the classroom will certainly affect learning outcomes. These problems should be a better concern for educators in delivering lessons.

Under these conditions, teachers should look for alternative learning methods that allow them to develop learning activities in the classroom (Lin & Chen, 2017). The emergence of several learning models today is an effort to improve language learning. One of them is the Mind Mapping learning model. The Mind Mapping learning model is one of the learning models that seeks a student to be able to explore creative ideas and be active in participating in learning activities. So that the learning carried out will be more lively, varied, and familiarize students with solving problems by maximizing the power of thought and creativity. Thus, according to Zilka, Rahimi, and Cohen (2019) the learning objectives that have been determined can be achieved.

The mind mapping learning model is a creative, effective way of taking notes that will literally map our minds (Hariyadi, Corebima, & Zubaidah, 2018). The mind mapping learning model is also very simple. In essence, the mind mapping learning model in addition to gaining memorization and understanding of students' concepts is strong, students can also increase their creativity through freedom of imagination. freedom of imagination poured in the form of images, and many colors. This then motivates researchers to conduct this research.

## **LITERATURE REVIEW**

Learning is a change in an individual that occurs through experience, and not because of the growth or development of his body or characteristics since birth. Learning is a process carried out by individuals to obtain new behavior changes as a whole, as a result of the experience of the individual himself in interacting with his environment (Zhou & Wei, 2018).

In their research, Zappone, Di Renzo, and Debbah (2019) investigated learning is defined as a process of permanent behavior change from not knowing to knowing, from not understanding to understanding, from less skilled to skilled, and from old habits to new habits, as well as beneficial for the environment and the individual himself. Learning is a process to achieve a goal, namely change for the better. These changes are changes in knowledge, understanding, skills, attitudes, and behavior.

Learning is a change in behavior with a series of activities (Toğaçar, Ergen, Cömert, & Özyurt, 2020). For example reading, observing, listening and so on. In addition, learning will be better, if the subject of learning experiences or does it. Some characteristics of learning according to Thabtah and Peebles (2020):

1. Learning is done consciously and has a purpose. This goal is used as a direction of activity, as well as a benchmark for learning success.
2. Learning is one's own experience, it cannot be delegated to others. So, learning is individual,
3. Learning is a process of interaction between individuals and the environment. This means that individuals must be active when they are in a certain environment. This activity can be realized because individuals have various potentials for learning,
4. Learning causes changes in the person who learns.

Learning outcomes come from two words, namely results and learning, the term learning outcomes can be interpreted as an achievement of what has been done. While learning is the effort that a person makes in the process of changing behavior (Krishnaraj, Elhoseny, Thenmozhi, Selim, & Shankar, 2020). In this case, learning outcomes can be interpreted as learning outcomes achieved by students in the field of study after participating in the teaching and learning process. In line with that opinion, through an investigation research, Susanto, Rachmadtullah, and Rachbini (2020) found learning outcomes are a result of the learning process using measurement tools, namely in the form of tests that are arranged in a planned manner, both written tests, oral tests and action tests. Another opinion proposed by Huang et al. (2020) that learning outcomes are patterns of actions, values, understandings, attitudes, appreciation, and skills.

Goh, Leong, Kasmin, Hii, and Tan (2017) stated that learning outcomes can be seen from the results of daily test scores (formative), mid-semester test scores (subsumative), and semester test scores (summative). In this classroom action research, what is meant by learning outcomes is the results of daily test scores obtained by students in social studies subjects. Daily tests are carried out at the end of the learning process in a particular subject or competency. This daily test consists of a set of

questions that students must answer and structured tasks related to the concept being discussed.

Attitude is the ability to accept or reject an object based on an assessment of the object. Attitude in the form of the ability to internalize and externalize values. Attitude is the ability to make values as standards of behavior. It is clear that a teaching and learning process will eventually produce student abilities that include knowledge, attitudes and skills. In the sense that, the change in ability is an indicator to determine the results of student achievement. So, student activities have a very important role in the teaching and learning process, without student activities the teaching and learning process will not run well, as a result the learning outcomes achieved by students are low.

The essence of language learning, especially if it is highlighted from students, is knowledge that will foster the younger generation to learn in a positive direction. Language learning makes changes according to the conditions desired by the modern world or according to the creative power of development (Loewen et al., 2019). Learning also holds the basic principles and value systems adopted by the community and fosters the future life of the community in a brighter and better way. All of that is passed on to their descendants in a better way.

Furthermore, in physical growth and spiritual development in accordance with increasing age, one's introduction and experience of the life of the surrounding community is growing and expanding. The introduction of other humans outside of oneself is not only limited to people in the family, but includes playmates, neighbors, villagers, and so on. The social relationships experienced, the wider the experience, introduction and social relationships, in a person will grow knowledge about the intricacies of social life.

The learning model is a conceptual framework that describes a systematic procedure in organizing learning experiences to achieve certain learning objectives and serves as a guide for learning designers and teachers in planning teaching and learning activities. Cooperative learning is a group learning model with different student backgrounds in increasing interaction or cooperation between students (Kövecses-Gösi, 2018).

According to Casey and Fernandez-Rio (2019) to achieve maximum results the five elements in cooperative learning must be applied, namely:

1. Positive interdependence

This element shows that in cooperative learning there are two group responsibilities. Firstly, study the material assigned to the group. Secondly, ensure that all group members individually study the assigned material.

2. Personal responsibility

This accountability arises when the group's success is measured. The purpose of cooperative learning is to form all group members into strong individuals.

3. Promotive interaction

This element is important because it can produce positive interdependence. The characteristics of promotive interaction are helping each other effectively and efficiently, providing each other with the necessary information and means, and reminding each other.

4. Communication between members

To coordinate the activities of students in achieving goals, students must know and trust each other, be able to communicate accurately and not ambiguously, and accept and support each other.

5. Group processing

Group processing implies judging. Through processing, groups can be identified from the sequence or stages of group activities and the activities of group members.

Through group work will be able to help the emergence of associations with other events that are easy to remember. For example, if disagreement occurs between groups, then fierce debate is inevitable. After this debate, it is usually easier to remember what was discussed than other issues that just pass by. Because of this incident, there are ears that hear, mouths that speak, emotions that intervene and hands that write. Everyone remembers it in their head. If you read alone, only recordings from your eyes reach your brain, of course this is less effective.

Cooperative learning has a significant effect on the wide acceptance of racial, cultural and religious diversity, literature, abilities and disabilities. According to Aghajani and Adloo (2018) cooperative learning provides opportunities for students with different backgrounds and conditions to work through the use of cooperative reward structures, learning to respect each other. Social or cooperative skills develop significantly in cooperative learning. Cooperative learning is very appropriate to practice cooperation and collaboration skills.

Mind mapping is a form of learning that presents the content of the subject matter with mind mapping. According to Buchmann, Ghiran, Osman, and Karagiannis (2018) mind mapping is a technique of summarizing the material that needs to be studied, and projecting the problems encountered into the form of maps or graphic techniques so that it is easier to understand them. This activity is an effort to optimize the function of the left brain and right brain, which in its application is very helpful to understand the problem quickly because it has been mapped. The result of mind mapping is in the form of a mind map. Mind mapping is a diagram that is used to present words, ideas, tasks, or something else that is linked and arranged around the main idea keywords.

Khodabandeh (2021) formulated the mind mapping learning model as follows:

1. The teacher conveys the competencies to be achieved, then explains the teaching material clearly and in detail so that students are able and easily understand the material being taught.
2. The teacher proposes a concept/problem that will be responded to by students. Problems should be chosen which have many alternative answers, so that students are not confused in finding the concept or problem that is being responded to.

3. Students identify alternative answers in the form of a mind map or diagram, then connect the main branches to the central image (main idea). The branches that have been made are connected with pictures, because the brain works according to associations, the brain likes to associate two, three, or four things at once. If we connect the branches, it will be easier to understand and remember.
4. Some students are given the opportunity to explain the idea of mapping their thinking concepts in front of their friends then the teacher responds.
5. From the data from the discussion, students are asked to make conclusions and the teacher gives a map that has been provided as a comparison.

## RESEARCH METHOD

The location of this research is in SD Inpres Batanghari Jambi. The research subjects are 26 students consisting of 13 male students and 13 female students. This classroom action research is carried out through two cycles consisting of planning, implementation, observation, and reflection. There are two types of data in this study, namely quantitative data obtained from student learning outcomes, and qualitative data representing student activities and student responses to the mind mapping type cooperative learning implementation model.

The instruments for collecting research data are:

1. Learning Outcomes Test: To obtain data on student learning outcomes, the researcher used essays on student learning outcomes in the form of essays made by the researcher.
2. Observation Sheet: In the form of an entry format to record student attendance and activity in the learning process.
3. Questionnaire: Contains questions to reveal student responses to Mind Mapping Type cooperative learning.

The data that has been collected is then analyzed using qualitative and quantitative analysis techniques. For the quantitative analysis technique, descriptive statistics are used, namely describing the increase in student learning outcomes through the Mind Mapping Type cooperative learning model. For the purposes of qualitative analysis, the categorization technique with a scale based on standard categorization is shown in table 1 below.

**Table 1. Category of Learning Outcomes**

No	Quantitative Value	Category
1	0-54	Very less
2	55-64	Less
3	65-79	Medium
4	80-89	Good
5	90-100	Very good

## FINDINGS AND DISCUSSION

The results of learning observations at the first meeting in cycle I, were qualitatively obtained through the results of observing student attitude activities during the learning process. The student activities at the first meeting can be seen in table 2 below:

**Table 2. Frequency Distribution of Student Activity Observations in Cycle I**

No	Observed Indicators	Cycle I						Average (%)
		Frequency			Percentage (%)			
		M.1	M.2	M.3	M.1	M.2	M.3	
1	Students' attendance	25	23	26	96,15	88,46	100	94,87
2	Students who listen to the teacher's explanation (students who seem to pay attention to the teacher's explanation)	19	18	20	73,08	69,23	76,92	73,08
3	Students' activeness in groups when looking for answers to worksheets	15	21	20	57,69	80,76	76,92	71,79
4	Students who take notes or copy what the teacher has explained	20	21	24	76,92	80,76	92,31	83,33
5	The student who answers the question asked	7	8	11	26,92	30,77	42,31	33,33
6	Students who give feedback	5	5	7	19,23	19,23	26,92	21,79
7	Students who ask for teacher guidance in completing LKS.	19	15	12	73,08	57,69	46,15	58,97
8	Students who carry out other activities both in the process of providing learning materials and when doing assignments (playing, going out of class, making noise, doing other work and so on)	12	10	10	46,15	38,46	38,46	41,02
<b>Average</b>								<b>59,77</b>

From the table 2, data shows that from 26 students, the frequency of activity observed in this study is emphasized on 8 options as listed in the table. The percentage of these activities is based on filling out the observation sheet. Based on the data from observations, at the beginning of the implementation of the first cycle, namely meetings at meetings 1, 2, 3 there are still some difficulties, especially in dealing with students, the thing that stood out was that students who answered and gave responses were still very few students who took notes on the subject matter showed good cooperation. both fellow members, we also saw that students who paid attention to the teacher's

explanation were also still very less than the number of students in the class. Another response noted that the attitude was less passive and less supportive so that the class atmosphere was noisy, especially students in the backseat, students pacing around while disturbing their friends and playing. In addition, there are students who talk to their group friends who are not related to the lesson, are not enthusiastic in learning and seem still confused about the learning model applied. The results of this observation indicate that the attitude, attention and activeness of students towards the application of this learning method is still lacking.

In the first cycle the mind mapping type cooperative learning model that was applied was not perfect. This has an impact on the ability of students to carry out activities and results in low student achievement in the acquisition of learning test scores in table 3 below:

**Table 3. Class Student Learning Outcomes Based on the Final Test in Cycle I**

Statistic	Statistic Value
Number of students	26
Ideal Score	100
Highest score	100
Lowest Score	40
Score Range	60
Average Score	67,30
Median	70
Standard Deviation	16,81

The learning outcomes obtained based on the evaluation of the first cycle showed that the highest score was 100 and the lowest score was 40. This value was far from the predetermined standard of completeness for each individual, which was 65, if the student learning outcomes were averaged, the score obtained was 67.30. So it can be said that the learning outcomes in the first cycle are still moderate.

The activeness of students in teaching and learning can be seen from the results of observations at each meeting conducted by the observer. In cycle II there were three meetings as shown in table 4.

**Table 4. Frequency Distribution of Student Activity Observations in Cycle II**

No	Observed Indicators	Cycle II						Average (%)
		Frequency			Percentage (%)			
		M.1	M.2	M.3	M.1	M.2	M.3	
1	Students' attendance	26	24	26	100	92,31	100	97,44
2	Students who listen to the teacher's explanation (students who seem to pay attention to the teacher's explanation)	24	25	26	92,31	96,15	100	96,15
3	Students' activeness in groups when looking for answers to worksheets	25	25	26	96,15	96,15	100	97,43
4	Students who take notes or copy what the teacher has explained	24	25	26	92,31	96,15	100	96,15
5	The student who answers the question asked	10	12	16	38,46	46,15	61,54	48,72
6	Students who give feedback	12	13	17	46,15	50	65,38	53,84
7	Students who ask for teacher guidance in completing LKS.	11	12	10	42,31	46,15	38,46	42,31
8	Students who carry out other activities both in the process of providing learning materials and when doing assignments (playing, going out of class, making noise, doing other work and so on)	5	4	2	19,23	15,38	7,69	14,1
<b>Average</b>								<b>68,27</b>

The result of the observation of the implementation of the action in cycle II there was a change in the attitude, attention and activity of students, and the most prominent thing was that the number of students who carried out other activities in the class was no longer there. Likewise, the number of students who ask for teacher guidance when working on LKS has decreased. In addition, students who answered and submitted responses also showed quite good progress. Meanwhile, students who took notes and listened to the teacher's explanation also showed very good progress. The most prominent thing is also shown in the activity of students in working on LKS more compact. However, there are still some students in one group who are not active.

Descriptive analysis of student learning outcomes after applying the Mind Mapping type cooperative learning model can be seen in table 5 below.

**Table 5. Student Learning Outcomes Based on the Final Test in Cycle II**

Statistic	Statistic Value
Number of students	26
Ideal Score	100
Highest score	100
Lowest Score	60
Score Range	35
Average Score	80,19
Median	82,5
Standard Deviation	13,89

The learning outcomes obtained in the final test of the second cycle showed that there was an increase in the social studies learning outcomes of fourth grade students, it could be seen from the increase in the student's acquisition score after an evaluation test was held where the highest score obtained by students was 100 and for the lowest score of 60 the score almost reached the standard. completeness of each individual that has been determined is 65. In addition, the average class for the second cycle also increased 80.19. So it can be said that the learning outcomes in cycle II are high.

Application of Mind Mapping cooperative learning model. In cycle II, it has shown an increase in learning activities from the first meeting to the second meeting in cycle II. However, at the end of cycle II, some problems were still found in the learning process, the problems found could be used as reflections for improvement in cycle II.

Some of the obstacles faced in the second cycle will serve as a reflection for which improvements will be made, including encouraging students to be more active in the teaching and learning process and providing more in-depth explanations, it is also emphasized to students how to be tolerant, responsible, cooperative, and respectful of fellow groups.

This study shows that in the first cycle, the highest score obtained by students was 100 and the lowest score was 40. If the grade IV students' learning outcomes were averaged, the score obtained was 67.30. If it refers to the value of learning completeness, the number of students who are in the complete category is 14 students, while the remaining 12 students are in the incomplete category. Reviewing the success indicators in this study, it can be said that the research for the first cycle has not been successful, therefore this research is then forwarded to the second cycle by reviewing (reflecting) what must be addressed, improved and improved to enter the second cycle so that later student learning outcomes can be further improved.

Seeing this, what becomes a reflection to enter the second cycle as a solution is that before ordering students to work on the LKS, the teacher first explains the instructions for filling out the LKS so that in the end students no longer feel confused in

solving the questions contained in the LKS. Another item that experienced a decrease in the percentage value from cycle I to cycle II was that many students carried out activities or other activities during the teaching and learning process. This is felt to be quite encouraging because it is a positive development where student activities that are considered to be interfering with the teaching and learning process can be resolved. The decrease in the number of students who carry out other activities during the learning process is due to the fact that teachers do not hesitate to reprimand students who commit violations. Based on the results of the research and the description of the discussion above, information was obtained that the use of the Mind Mapping type of cooperative learning model can improve student learning outcomes.

## CONCLUSION

The application of Mind Mapping Type cooperative learning can improve student learning outcomes based on the average learning outcome score of 67.30 in the first cycle to 80.19 in the second cycle. This means that there is an increase of 12.89 in the value of student learning outcomes. The application of Mind Mapping type cooperative learning can improve student learning activities. This is clearly seen in the distribution of student activity observations in the first cycle with an average of 59.77% to 68.27% in the second cycle.

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