

Mind Mapping Learning Model to Improve Learning Outcomes of Circle Material

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Abstract

This research is motivated by the fact that there are still many students who are less active in the learning process and still have difficulty answering the questions given by the teacher. The purpose of this study is to determine the application of the Mind Mapping learning model to improve students' Mathematics learning outcomes in class VIII-1 circle material of MTs Ja'fariyah Hutaibus. This research is a Classroom Action Research conducted using two Cycles, namely Cycle I with two Meetings and Cycle II with one Meeting. The instruments used are observations and tests in the form of test essays. The subject of this study was students in class VIII-1 MTs Ja'fariyah Hutaibus consisting of 27 students. The results of this study show that students' learning outcomes are improving. It can be seen from the scores and activities of students starting from pretests with a percentage of student completion of 19% (5 out of 27 students) with a grade point average of 48.33, Cycle I: 1st Meeting, percentage of completeness of siswa 52% (14 out of 27 people) with an average score of 78.81, Cycle I: 2nd Meeting, percentage of student completion 74% (21 out of 27 people) with an average score of 86.11 and Cycle II, 1st Meeting, The percentage of student completion was 89% (24 out of 27 people) with an average score of 88.51. This shows that the application of the Mind Mapping learning model can improve mathematics learning outcomes for grade VIII-1 MTs Ja'fariyah Hutaibus students.

Keywords: *Mind Mapping; Learning Outcomes; Circle.*

Abstrak

Penelitian ini dilatarbelakangi oleh masih banyaknya siswa yang kurang aktif dalam proses pembelajaran dan masih kesulitan dalam menjawab soal yang diberikan guru. Tujuan penelitian ini adalah untuk mengetahui penerapan model pembelajaran *Mind Mapping* dapat meningkatkan hasil belajar Matematika siswa pada materi lingkaran kelas VIII-1 MTs Swasta Ja'fariyah Hutaibus. Penelitian ini adalah Penelitian Tindakan Kelas yang dilakukan dengan menggunakan dua Siklus yaitu Siklus I dengan dua Pertemuan dan Siklus II dengan satu Pertemuan. Instrumen yang digunakan yaitu observasi dan tes dalam bentuk *essay tes*. Subjek penelitian ini adalah siswa kelas VIII-1 MTs Swasta Ja'fariyah Hutaibus yang terdiri dari 27 orang siswa. Hasil penelitian ini menunjukkan bahwa hasil belajar siswa meningkat. Hal ini dilihat dari nilai dan aktivitas siswa dimulai dari *pretes* dengan persentase keuntasan siswa sebesar

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19% (5 dari 27 siswa) dengan nilai rata-rata kelas sebesar 48,33, Siklus I Pertemuan I, persentase ketuntasan siswa 52% (14 dari 27 orang) dengan nilai rata-rata 78,81, Siklus I Pertemuan II, persentase ketuntasan siswa 74% (21 dari 27 orang) dengan nilai rata-rata 86,11 dan Siklus II Pertemuan I, persentase ketuntasan siswa sebesar 89% (24 dari 27 orang) dengan nilai rata-rata 88,51. Hal tersebut menunjukkan bahwa penerapan model pembelajaran *Mind Mapping* dapat meningkatkan hasil belajar Matematika siswa kelas VIII-1 MTs. Swasta Ja'fariyah Hutaibus.

Kata Kunci: *Mind Mapping*; Hasil Belajar; Lingkaran.

INTRODUCTION

Many things are factors in determining success in learning, including the curriculum that is used as a basic reference, teacher quality, learning programs, assessment techniques, learning strategies / models and teaching materials. The Mind Mapping learning model is a mapping of thoughts that are organized directly from the human brain visually from ideas or concepts. The flow of Mind Mapping learning starts from the middle of the book where there are already keywords. Keywords should be capitalized and bolded. Each piece of information is arranged correctly. The drawing must be alone and have its own lines. Draw a line and associate it with keywords. Use curved lines to associate keywords with subtopics. Develop Mind Mapping according to the desired style (Tony Buzan, 2019).

There has been a lot of research on the Mind Mapping learning model. Nurul Halimah, (2017) mentioned that the Mind Mapping learning model is proven to improve students' mathematics learning outcomes. Zuhriah Ulfa, (2012) stated that the Mind Mapping learning model can improve students' mathematics learning achievement. Fadhilaturrehmi, (2017) concluded that using the Mind Mapping method can improve student learning outcomes in low-grade Mathematics education courses.

This study aims to determine the application of the Mind Mapping learning model to improve mathematics learning outcomes for grade VIII-1 MTs Ja'fariyah Hutaibus, Lubuk Barumun District, Padang Lawas Regency.

RESEARCH METHODS

This research was conducted at MTs Ja'fariyah Hutaibus which is located at Jl. Sibuhuan-Gunung Tua, Hutaibus, Lubuk Barumun District, Padang Lawas Regency, North Sumatra. The research time will take place from June 13, 2022 to August 13, 2022.

The type of research is Classroom Action Research, which is research that performs actions carried out by teachers in their own classrooms through self-reflection, with the aim of improving teacher performance so that student learning outcomes are increasing. Classroom Action Research (PTK) is a teacher's effort in improving the quality of learning where the role and responsibility of the teacher, especially in classroom management, in solving problems faced by teachers and students so that students can easily understand the material that has been given by the teacher (Anjani Putri Belawati Pandiagan, 2019).

Classroom Action Research is carried out by the teacher in the classroom and is carried out in a structured manner and is carried out in order to solve problems through a series of activities and finally the problem can be solved. Action research is a study that can be carried out on an ongoing basis to get the best expected results (Tatang Ary Gumanti, dkk, 2016).

This research was conducted at MTs Ja'fariyah Hutaibus. The subjects of this study were class VIII-1 students totaling 27 students, all of whom were female students. The reason for choosing this class is because in this class the students' learning outcomes are still relatively low and below KKM. This is shown by observations and interviews that have been conducted by researchers with Mathematics teachers in class VIII MTs Ja'fariyah Hutaibus. The object of this study is the Circle material in the application of the Mind Mapping learning model.

The steps in Classroom Action Research in this study consist of two cycles. Classroom action research consists of four series that exist in each cycle, namely planning, action, observation, and reflection.

In this study, researchers used data collection instruments by means of:

1. Observation

Observation is a complex process composed of various processes directly and systematically and the most important thing from observation is observation and memory (Sugiyono, 2016). Observation is a data collection technique where researchers go directly to the field to observe things related to the place, purpose, actors, time, events and activities that take place.

Observation is used to explore data on student learning outcomes in the Circle material such as giving examples, accuracy in answering questions, and accuracy in answering questions during learning, both individually and in groups.

Observation activities are carried out when the lesson starts until the learning ends. Observations were made to see actions regarding student outcomes and actions using the Mind Mapping learning model.

2. Test

A test is an instrument or tool used to collect data on the subject of research by means of measurement, for example to measure the research subject to the extent of students' mathematics learning outcomes (Ika Sriyanti, 2019). The form of questions given is an essay test. Essay test is used to measure skills, explore ideas. Essay tests are more widely used to measure higher abilities in the cognitive area because of the neglect of the essay test students are invited to explain, express and compare something evaluation in learning. This test is used to determine students' learning outcomes on the Circle material for scoring. Each question is given a score of 10, if the answer given by the student is the way and the answer is correct. But if the path is right and the answer is wrong, it will be given a value of 5. In the other hand, if the answer is right and the path is wrong, then it is given 5 points.

The purpose of using this instrument is to use essay test questions to see the mathematics learning outcomes of class VIII students on the Circle material at MTs Ja'fariyah Hutaibus and also to encourage students to give their own answers according to the questions given.

Data Analysis Techniques

The standard criteria for success in this study are two kinds of success indicators to be achieved, namely indicators about the implementation of learning and indicators of improving student learning outcomes. If the increase in learning outcomes increases by at least 76%, it will be carried out properly. However, it is said to be successful if at least 76% of students get a score of ≥ 70 .

To find out the improvement of these learning outcomes quantitative data analysis techniques are used, as follows:

1. Test Assessment

The test assessment carried out by the researcher by summing the scores that have been obtained by the students, then divided by the number of students in the class, will be obtained on average (mean). The average value will be calculated using the formula (Zainal Aqib, 2009):

$$\bar{X} = \frac{\sum X}{\sum N}$$

Information:

\bar{x} = average

$\sum X$ = Number of all students

$\sum N$ = Number of students

2. Assessment of Student Learning Completion

To find out the percentage of student learning completion using the following formulation:

$$NT = \frac{ST}{N} \times 100\%$$

Information:

NT = Classical learning completion

ST = Number of Students Who Have Completed Their Studies

N = The total number of students in the class

This analysis is used at the time of reflection, to find out the extent of student completion and as material for planning in future meetings.

Meanwhile, quantitative data with observation and reflection results were analyzed using the Miles and Huberman model, as follows:

1. Reducing data, is a process of selecting, focusing and simplifying data that has been obtained from the beginning of collection to the preparation of activity reports.
2. Presenting data is an activity of organizing the results of reduction by compiling information obtained from the results of data reduction in order to be able to provide conclusion drawing and action taking in research.

Drawing conclusions or verifying data is drawing conclusions on the results of interpretation and evaluation to find the meaning of the data and provide a good explanation (Rangkuti, 2016).

RESULTS AND DISCUSSION

Description of Research Data

1. Initial Conditions of Students

Data on the results of preliminary studies in class VIII MTs Ja'fariyah Hutaibus obtained that the scores of learning outcomes obtained by students are still low that there are still many below average. From the initial data, it was found that there are many things that cause students to have difficulty in solving questions, so the results obtained are low. Many students say that they have forgotten the material they learned before, they only remember what lessons were learned at that time, and there are also students who solve problems not in the flow taught but in their own way. Many students are reluctant to ask questions, do not dare to make suggestions for the problems at hand, students do not need to be with their surroundings, there is no willingness to ask friends, and students are already satisfied with the questions that have been answered by themselves. Based on these circumstances, researcher plans a Mind Mapping learning model because with the Mind Mapping learning model students are invited to learn to develop thoughts through mind maps that can increase the strength of memory of past material in order to obtain the desired results.

2. Cycle I

From the Pre-test of students, before implementing the Mind Mapping learning model in Mathematics learning, the first step taken by the researcher is to discuss with the teacher of the Mathematics subject of MTs Ja'fariyah Hutaibus. The results of this study are as follows:

a. 1st Meeting

1) Planning

The next activity is to compile research instruments used by researchers in this study, namely: RPP which contains steps that support the implementation of Mind Mapping and tests at each meeting. This research instrument is based on preliminary observations that have been carried out so that it can support the learning process using the Mind Mapping model.

2) Action

Based on the RPP that has been planned in Cycle I, researcher will carry out learning activities in accordance with the learning procedures that have been prepared previously. The implementation of actions in Cycle I was carried out as many as 2 meetings where each meeting was given a test to measure the extent of the improvement in Mathematics learning outcomes on the Circle material.

Before explaining the circle material, the teacher first conveys the learning objectives, motivating students to understand the circle material. The actions performed include the following steps:

- a) Students are given outline material by the teacher regarding the circle
- b) Students form groups, where the total number of students of class VIII-1 is 27 students and in each group consists of 5 people and is divided into 5 groups.
- c) Each group analyzes questions about the circle material.
- d) The group that has answered the question regarding the circle material, is welcome to come to the front of the class to show and

present the results of the group's answers, and other groups pay attention.

- e) Teacher and students discuss the questions from the results of solving the questions done by the students.
- f) Researchers monitor student activity and response during learning and then put it in an observation sheet.
- g) The teacher tells the students to repeat the material that has been taught and draw conclusions.

3) Observation

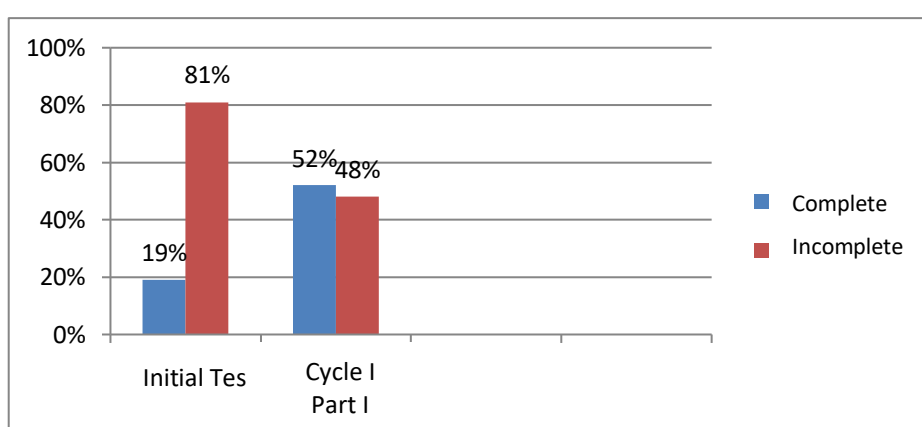
Through observation made by researcher who act as observers during the learning process takes place on circular material. The learning process using the Mind Mapping learning model can bring out students' enthusiasm and motivation for learning. This gave rise to his curiosity, giving rise to some questions and opinions of students.

Researchers saw many enthusiastic students in the discussion. The discussions were quite effective, but there were still group discussions dominated by less active students. It can be seen from the fact that there are still many students who do not pay attention to other groups at the time of the group presentation as evidenced by the few students who respond, ask questions and there are still many students who do not listen when explaining the circle material.

From the research on students' Mathematics learning outcomes test in Cycle I 1st Meeting, there was an increase in the average grade point average from the previous action of 48.33 to 74.81 in other words, 52% of students completed in Cycle I 1st Meeting (14 students completed). The average increase in classes in Cycle I of 1st Meeting can be seen in the following table and diagram:

Table 1. Classical Completeness Before Action and on Cycle I of 1st Meeting

Category	Value	Total Student	Percentage
Initial capability test	≥ 75 Completed	5	19%
	< 75 incompleted	22	81%
Test learning outcomes cycle I 1st Meeting	≥ 75 Completed	14	52%
	< 75 Incompleted	13	48%

**Figure 1. Classical Completion Percentage Diagram Before Action and Cycle I 1st Meeting**

4) Refleksi (Reflection)

Based on the implementation of learning in the first cycle of the first session with the aim of improving the learning outcomes of mathematics students in class VIII-1 MTs Ja'fariyah Hutaibus, it can be seen that after the test was carried out there was an increase in the average score of students, namely from 48.33 (5) completed students, increasing to 74.81 (14 people) students who were completed and 48% of students who were not completed. However, the increase in learning outcomes has not been maximized from what was expected by researchers.

The number of students who have been able to do the questions can be seen from the percentage of student learning completion and the increase in the number of students who are able to complete the questions from 5

students to 14 students. At 1st Meeting, student learning outcomes have begun to increase, we can see from the activities and completeness of student learning that have been observed. There are 14 students who are able to solve the questions in the circle material and 13 more students who have not been able to complete the questions.

The causes of students have not been able to solve the problem with circle material, namely:

- a) Students still do not understand the material described by the teacher
- b) Students are Lack of active in learning
- c) Students are not yet familiar with the Mind Mapping learning model because they usually use a teacher-centered learning model
- d) There are still many students who lack of courage in issuing opinions
- e) Group discussions that are still dominated by less active students. It can be seen from the number of students who did not pay attention to other groups at the time of the group presentation as evidenced by the small number of students who responded, asked, and there were many more students who did not listen during the learning process.

To be able to fix the problems that have been raised for the next meeting, it is hoped that teachers must be more active in attracting students' attention, maximizing the delivery of material, and motivating students to be more optimal in developing the abilities that exist in themselves.

Therefore, this research will be continued in the next cycle, namely Cycle I 2nd Meeting with the application of the same learning model, namely the Mind Mapping learning model.

b. 2nd Meeting

1) Planning

At this 2nd meeting the steps taken for the next action as planning are as follows:

- a) Preparing RPP on circle material by using the application of the Mind Mapping learning model with stages, namely introduction, the teacher provides apperception and motivation including starting each lesson

with greetings followed by praying, conveying learning objectives, and so on. In the core activity, the teacher conducts the tracking stage, which is the stage carried out by the teacher to deliver the core material to see the extent of the student's initial ability on the circle material. Furthermore, the confirmation stage is that the teacher will present the questions that will be discussed the questions that will be solved together. Then continued with the approach stage using the Mind Mapping learning model, which is in line with the confirmation stage, students are invited to solve problems with circle material about the area of the circle that has not been fully taught by the teacher where students are given the opportunity to express ideas to solve the problem, then given examples of questions about the area of the circle. In the closing activity, namely at this stage, it is the stage of drawing conclusions about the material that has been taught. Then the last stage of the Mind Mapping learning model is the transfer stage by presenting student Mathematics learning outcome test questions regarding circle material, especially on the area of the circle by the teacher.

- b) Encourage Students to ask questions and express their opinions, so that the student is excited during the discussion.
- c) Students are given an understanding of the importance of cooperation in solving problems or other problems in group discussions.
- d) Inspire students to increase self-confidence in the abilities of students and Inspire students that all the effort produced by is the best result
- e) Increase individual responsibility in a group.
- f) Maximize the position as a facilitator so that student-centered learning is expected to improve students' Mathematics learning outcomes in class VIII-1.
- g) Prepare test questions at the end of the meeting.
- h) Manage test results to assess the learning outcomes obtained by students.

2) Action

In the second meeting, teachers carried out learning based on RPP that had been prepared using the application of the Mind Mapping learning model. As for the actions performed with the following steps:

- a) Students are given material in outline by the teacher regarding circle material, especially on the area of the circle.
- b) Students form groups, the overall number of 27 people, divided into 5 groups, in one group of 5 people.
- c) Each group reanalyzes the methods used in the circle material.
- d) Groups that have found answers to circle material, especially on circle material, are welcome to come forward to show results and present them, while other groups listen and pay attention.
- e) Teacher and students discuss some sample questions in the material.
- f) Each group worked on a question that had been given by the teacher, and one of the 5 groups presented their group's answers, then the other group expressed an opinion and responded to the results of the group's work.
- g) The observer monitors student activities during the study and is poured into the observation sheet.
- h) The teacher tells the student to repeat the material that has been learned.
- i) Teacher and students together draw up conclusions and make key words on the circle material with the broad subject matter of the circle.
- j) Teacher and students reflect on what they have learned.
- k) The teacher gives 5 test essay questions to students about the circle material on the subject of the circle.

3) Observation

Based on the actions taken, researcher observed that the use of the Mind Mapping learning model has begun to see an increase in student enthusiasm and motivation. By using the Mind Mapping learning model,

students have begun to be active in the learning process even though not all students are active in issuing opinions and asking questions. The learning outcomes obtained by students have also begun to improve. This is evidenced by the test results obtained by students even though the results obtained by students have not been maximized.

From the assessment of mathematics learning outcomes tests on circle material, especially on the subject of circle area in Cycle I 2nd Meeting, there was an increase in the average class from Cycle I 1st Meeting by 78.81 to 81.11 in other words, 78% of students who were completed (21 students who were completed). The average increase in classes in Cycle I of 2nd Meeting can be seen in the following gamabr and table:

Table 2. Classical Completeness in Cycle I 1st Meeting and 2nd Meeting

Information	Value	Many Students	Percentage
Learning outcomes test Cycle I 1st Meeting	≥ 75 complete < 75 Incomplete	14 13	52% 48%
Learning outcomes test Cycle I 2nd Meeting	≥ 75 Complete <75 Incomplete	21 6	78% 22%

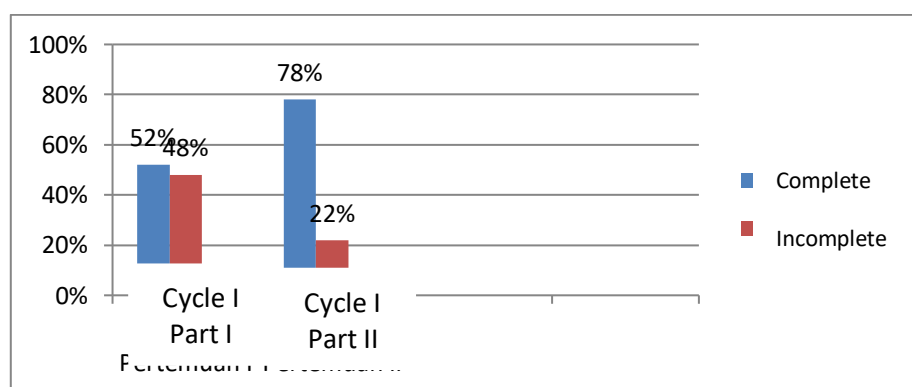


Figure 2. Diagram of Classical Percentage of Elasticity in Cycle I of the 1st and 2nd Meeting

4) Reflection

Based on the learning in Cycle I of 2nd Meeting which aims to improve the learning outcomes of mathematics students in class VIII-1

MTs Ja'fariyah Hutaibus was seen after the test was carried out, it was found that there was an increase in the average score of students, namely 74.81 (14 people) students who were completed increased to 81.11 (20 people) students who were complete and 26% of students who were incompleting.

In Cycle I of 2nd Meeting, the subject matter is the area of the circle. In the introductory activity, the teacher repeats the material that has been studied before and then continues to explain the material about the area of the circle. The teacher explains the learning steps on the core level. Student learning activities in core learning have started to be quite good, students have paid attention to the teacher when the teacher explains the material, students have begun to ask questions, students are already willing to respond about what they have not understood. In group discussions students have begun to understand the importance of responsibility as a group member.

In the stage of Cycle I of 2nd Meeting, there began to be an increase in student enthusiasm and motivation, although not all students were active in learning, expressing opinions, asking questions, daring to present the results of the discussions obtained, and using time as well as possible. The learning outcomes obtained by students have also begun to improve even though students still have not obtained maximum grades.

To correct errors in Cycle I of 2nd Meeting, teachers must encourage students to be more active in asking questions, expressing opinions and inviting passive students to be active in discussions, and make the best use of time.

3. Cycle II

a. 1st Meeting

1) Planning

From the results of the reflection of Cycle I 1st Meeting and 2nd Meeting, it can be seen that it has begun to increase student learning outcomes compared to the initial student ability test, therefore

researchers continue to apply the Mind Mapping learning model, as after reflection there are stages, namely it is necessary to remind students so that the desired lesson objectives are achieved. Therefore, researchers strive for teachers to give more encouragement to students about the benefits of the subject matter being studied, especially to groups that are still passive and still less enthusiastic in participating in discussions. For this reason, in planning Cycle II, the following steps are carried out:

- a) The teacher conveys the learning objectives and objectives that the students will achieve on mastering the circle material before doing the core learning.
- b) At 2nd Meeting of Cycle I, which has passed regarding the completion of questions in the circle material, this is the stage of re-implementing student learning outcomes on the circle material.
- c) The discussion group in this group is still divided into 5 permanent groups of one of the group members selected as a tutor.
- d) Prepare questions to be done by each group.
- e) Guide students at the time of the discussion.
- f) Insert observation sheets to see student activity during discussions.
- g) Planning the implementation of the test at the end of learning the purpose is to find out the extent of the abilities and learning outcomes that students have on the circle material.

2) Action

The actions to be performed are as follows:

- a) The teacher mentions the material to be discussed, namely the circle material on the subject of the circumference of the circle.
- b) Students form groups according to what the teacher determines, but one of each group becomes a speech in his group.
- c) Each student analyzes the questions given by the teacher.
- d) The teacher gives directions to the students on how to solve the problem, by approaching each group to see how much cooperation they have in solving the problem. Then the results of the group

discussion are drawn into conclusions and taken keywords that are easy for students to understand and solve the circle problem on the subject of the circumference of the circle and this is the stage of giving results.

- e) The results of the discussion will be concentrated by each group, then other groups will be given the opportunity to give their opinions or beta.
- f) The observer monitors the activities of the students during the discussion process in the observation sheet. For the planning stage using the embedding shorthand, the stage of obtaining information is obtained with a questioning approach, the managing stage is obtained with an experimental approach, the creative stage is obtained with an information management approach, and the evaluation stage is obtained with a reasoning approach and concluding results.
- g) Teacher and students jointly give conclusions and create keywords from today's material.
- h) Teacher and students reflect on today's learning.
- i) The teacher gives 5 essay questions to students about the learning that has been learned.

3) Observation

At this stage, observations are carried out by observing the learning that has taken place at the end of the study. Activeness in the classroom is increasing, both in terms of observing, asking, reasoning, trying, with the help of tutors in cooperation discussions is increasing. Students' confidence in solving the questions given by the teacher is increasing, as can be seen from the way students do the test questions. The results of the Cycle II test showed an increase in the average class of student learning outcomes from 74.81 (Cycle I 1st Meeting) to 86.11 (Cycle I 2nd Meeting) then in Cycle II it increased to 88.51 with a percentage of student learning completion of 89% of students who were completed and 3 students who had not been completed.

The results of the average increase in classes in Cycle II can be seen in the following table and diagram:

Table 3. Classical Completeness in Cycle I of 1st MeetingI and Cycle II of 1st Meeting

Category	Value	Total Student	Percentage
Learning outcomes test Cycle I 2nd Meeting	≥ 75 Completed	21	78%
	< 75 Incompleted	6	22%
Learning outcomes test Cycle II 1st Meeting	\geq completed	24	89%
	$<$ Incompleted	3	11%

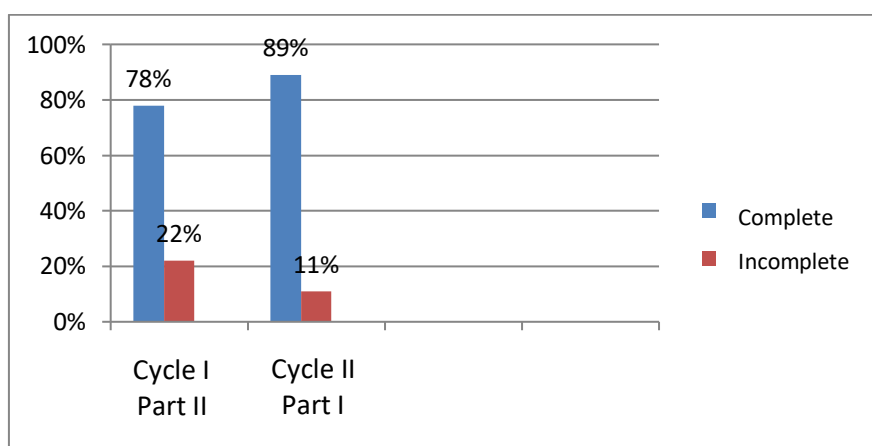


Figure 3. Classical Completion Percentage Diagram Cycle I 2nd Meeting and Cycle II 1st Meeting

4) Reflection

Seeing an increase in students' Mathematics learning outcomes, researchers came to the conclusion of stopping the research action in Cycle II of 1st Meeting, because the results obtained by students have shown an increase (more than 80% of completed students) and the percentage of incomplete students has decreased.

Based on the results of the learning test in Cycle II of 1st Meeting, it can be concluded that:

- a) Teacher can improve learning outcomes as can be seen from the average score obtained in Cycle II and the number completed in Cycle II has increased by 24 students.
- b) Teacher can increase student activity on circle material based on the results of the Second Cycle Ist Meeting.
- c) Students are familiar with and understand the use of the Mind Mapping learning model that has been applied by the teacher, this has an impact on the number of students who are able to discuss well, especially with the help of their friends during the discussion.
- d) The teacher really becomes a facilitator during the learning.

In Cycle II of 1st Meeting, The activeness of students in the classroom is increasing, both in terms of observing, asking, reasoning, trying, with the help of tutors in cooperative discussions increasing. Students' confidence in solving the questions given by the teacher is increasing, as can be seen from the way students do the test questions. This is seen from the observation results which showed an increase in the siawa observation sheet.

From the results of reflection, it shows that the application of the Mind Mapping learning model in Mathematics learning can improve student learning outcomes, reaching 89%, for that Cycle II is determined to have been achieved with a percentage of learning completion of more than 80%, so this research is ended in Cycle II.

Analysis of Action Results

Based on the actions that have been taken, conclusions can be drawn, namely that learning using the Mind Mapping learning model can improve students' Mathematics learning outcomes in class VIII-1 on circle material. The actions taken are to motivate students by providing learning methods which in this study used the Mind Mapping learning method so that students are not saturated in learning. Creating a conducive classroom atmosphere is one way to make the class more conducive. A conducive atmosphere will make students encouraged to follow the learning process. Giving credit to students is also one of the factors that

will be one of the factors that will be one of the motivations of students, as a teacher we are expected to give appreciation to students either in the form of words or in the form of rewards.

In addition to motivating students, teacher must also be able to attract students' attention during the learning process, this is useful so that the learning objectives to be implemented can be achieved effectively and efficiently. Maximum delivery of material will also make the learning process will run well, this will have an impact on learning outcomes and the class will be even more active judging from students who ask questions and express their opinions.

This can be seen from the average grade point of class and the percentage of learning skills that students have obtained up to Cycle II, can be seen in the following table:

Table 4. Improving Student Mathematics Learning Outcomes from Before the Cycle to Cycle II

Test categories	Meeting	Number of completed students	Average score of all students	Percentage of completed students
Cycle I	I	14	74,81	52%
	II	21	86,11	74%
Cycle II	I	24	88,51	89%

Thus the researcher considers that there is no need for the next cycle and ends the class VIII-1 Casroom action research of MTs Ja'fariyah Hutaibus and the answers to questions on the formulation of problems regarding the problem of applying the Mind Mapping learning model to improve students' Mathematics learning have been answered. The results of this study show that the application of the Mind Mapping learning model can improve students' mathematics learning outcomes. The findings of this study are in line with the research of (Abdul Hakim Ma'ruf, et. al, 2019; Hakimah, 2013; Rahma Faelasofi, 2016; Siti Iva Mufida, 2013) who stated that the Mind Mapping learning model can improve learning outcomes.

CONCLUSION

Based on the results of research conducted in the field as many as II cycles show that: The application of the Mind Mapping learning model can improve students' Mathematics learning outcomes on circle material in class VIII-1 MTs Ja'fariyah Hutaibus. Before applying the Mind Mapping learning model, students could not do the questions on the circle material that had been given by the teacher, most of the students were still noisy, confused and even did not understand the questions. However, after applying the Mind Mapping learning model, students become more active and excited in the learning process. In Cycle I of 1st Meeting, there was an increase in the average score of students before the implementation of Cycle I by 48.33 (19%) to 74.81 (52%). At 2nd Meeting students became even more active, daring to ask questions and respond to the results of group discussions, increasing at the Cycle I of 1st Meeting by 74.81 (52%) to 86.11 (74%) in Cycle I of 2nd Meeting. In Cycle II of 1st Meeting, student activity is increasingly visible, both in the form of asking, responding, reasoning, or presenting the results of the material that has been discussed in front of the class with an average score of 88.51 (89%) in other words, the percentage of completeness of learning mathematics students increases.

The improvement of the Mind Mapping learning model provides an improvement for teachers in MTs Ja'fariyah Hutaibus, Lubuk Barumun District, Padang Lawas Regency is proven by the results obtained by researchers, namely:

1. The use of the Mind Mapping learning model in MTs Ja'fariyah Hutaibus can provide a clear direction in the presentation of learning so that teachers can present learning materials easily and systematically.
2. The application of the Mind Mapping learning model in MTs Ja'fariyah Hutaibus can make it easier for teachers to compile the questions desired by the teacher.
3. Through the Mind Mapping learning model, it can be seen the successes and failures as well as the advantages and disadvantages that will be passed by teachers to realize an even better evaluation of learning success in MTs Ja'fariyah Hutaibus.

Thus, the application of the Mind Mapping learning model can improve students' Mathematics learning outcomes in class VIII-1 on the Circle material in MTs Ja'fariyah Hutaibus has exceeded 80% of the average before the action is in accordance with the goals that the researcher wants to achieve.

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