

Optimizing Biology Learning Outcomes: A Group Inquiry-Based Learning Approach Utilizing School Environment

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Abstract

This paper presents a research study that explores how to improve student's learning outcomes by implementing the Group Inquiry-Based Learning Model while making use of the school's surrounding environment in the context of biology learning for grade X science students at Madrasah Aliyah Darud Da'wah Wal-Irsyad Kijang Island. This research adopts the Classroom Action Research (PTK) approach, with data analysis conducted through descriptive analysis. The research findings reveal that implementing the Group Inquiry-Based Learning Model through the utilization of the school's surrounding environment effectively enhances the biology learning outcomes of grade X science students at Madrasah Aliyah Darud Da'wah Wal-Irsyad Pulau Kijang. This improvement is evident in the assessment results across four cycles: pre-cycle, cycle I, cycle II, and cycle III. In the pre-cycle, the research shows an average student learning score of 63.88, with only 8 students or 30% achieving mastery. During cycle I, the average student learning score increases to 70.37, with 12 students, or 44% reaching mastery. In cycle II, the average student learning score further rises to 75.18, with 17 students or 63% achieving mastery. Finally, in cycle III, the average student learning score reaches 81.85, with 23 students or 85% reaching mastery. The research is terminated after cycle III as the learning outcomes meet the mastery criteria. These results collectively demonstrate a consistent improvement in students' learning outcomes, with an overall increase of 55% from the pre-cycle to cycle III.

Keywords: *Group-inquiry, Learning model, Learning outcomes*

1. Introduction

The rapid development of science and technology, including biological sciences, has created the right selection of materials, models, learning resources, and learning systems. Accuracy in using learning models carried out by teachers can increase student interest, motivation, and learning outcomes in the subjects given. The more appropriate the model the teacher uses in teaching, the more effective the learning activities will be. Of course, other factors must be considered, such as teachers, children, learning environment, media, and so on (Ngalimun, 2013). Supporting a person's personal development both for themselves and society so that they can walk optimally requires an educational process. With this process, a nation or state can pass on religious values, culture, thoughts, and skills to the next generation, so that they

are truly ready to face a brighter future for the nation and state (Nurkholis, 2013). The biology learning process emphasizes the importance of providing direct experience to develop skills in exploring and understanding the natural environment scientifically.

Madrasah Aliyah Darud Da'wah Wal-Irsyad Kijang Island is one of the schools in Reteh District, Indragiri hilir Regency, Riau Province. Currently the implementation of learning Biology at Madrasah Aliyah Darud Da'wah Wal-Irsyad Kijang Island is still dominated by conditions classes that focus on the teacher as the source of Study. Results of observations and interviews on November 15, 2022, with an eye teacher lesson biology class X Science, that the biology learning process is constrained by facilities lacking schools adequate, lectures, questions and answers, and discussions Still become the choice main teacher in teaching, meanwhile student-centered learning not yet developed in a way maximum in the learning process. The learning process with method lectures and discussions is not enough to interest students, thus causing students to just take notes and listen to the

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material presented by the teacher. With the learning process, it becomes a reason for a lack of understanding and mastery of material. This low impact results Study students. At the lesson, biology owns sufficient completeness low. Look at the results Study student Where there are 70% of students obtaining mark results Study below the KKM, namely 75. Achieved Success learning standard competence, depending on the teacher's ability to manage learning that can be done create possible situation student Study so that m constitute point beginning successful learning.

Face the problem that, then it is a necessary solution ie choose the right learning model For increase results Study students. One of the learning models that can be done the teacher chooses is the learning model cooperative type Investigation Group. Model investigation group is a learning model involving a cooperation group which is a small student Work uses inquiry cooperative, planning, project, and discussion group, and then presents them. Involving students in an way active can start from stage First until stage end learning, which will allow students For more sharpen ideas and teachers will know the possibility that students are wrong so the teacher can repair the mistake (Mardiyah, 2014). Solutions that can be implemented For increased results Study students by using an investigative model group, by implementing it investigative learning model group through the use of the environment around the school learning biology For increased results Study students on the material Plantae (Plant World). Implementation investigation group worthy applied because this model emphasizes student active from stage beginning learning until stage end learning, engagement students in learning makes learning more meaningful and easily understandable, so activities and results Study students can increase.

Model implementation investigation group This supported the environment around the school as a source of learning. Biology is related to how to find out and understand nature systematically, therefore it is not only mastery of knowledge in the form of concepts, factors, and principles, but also a process of discovery. Biology Education can become a suggestion for students to elite objects in a way directly in the laboratory. This is the laboratory in question. Not only building big, and closed like a laboratory at a school or college, but that becomes his laboratory in the environment around the school (Siahian, 2014). The use of the ideal school environment is applied to Plantae (Plant World) material because the use of the environment around the school is supported by the environmental conditions of Madrasah Aliyah Darud Da'wah Wal-Irsyad Kijang Island which can be used as a learning resource. Utilizing the environment

around the school in teaching learners biology can increase results Study students, That researcher implementing a group investigation learning model by utilizing the environment around the school to improve student learning outcomes at Madrasah Aliyah Darud Da'wah Wal-Irsyad Pulau Kijang. expected capable support a deeper learning process Good so that can improve student learning outcomes.

2. Method

The approach used in the study This is an approach both quantitative and qualitative. The type of classroom action research (PTK) used by researchers is the Collaborative PTK type. This research was carried out in class. The research was conducted on May 4, 2023, during the even semester of the 2022/2023 academic year. Design action used in the study This it's a plan for Classroom Action Research (PTK). Planning in study This is preparations have been made by the writer to carry out PTK. As for the number of cycles planned, the action researcher is 3 cycles.

This uses Kemmis and Mc design. Tanggart where each cycle consists of four stages, namely, planning, implementation, observation, and reflection. The procedures used in each cycle of this research include pre-cycle, cycle I, cycle II, and cycle III. The criteria for success in this classroom action research are seen from student learning outcomes through test results at the end of each cycle. It can be said to be successful if student learning outcomes reach 75% of the number of students. The sources of data collection in this research were teachers and students of X IPA Madrasah Aliyah Darud Da'wah Wal-Irsyad Kijang Island totaling 27 students consisting of 17 female students and 10 male students. The research instruments used in this research were observation sheets, tests, and Learning Implementation Plans (RPP) for cycle I, cycle II, and cycle III. Data collection techniques through observation, test, and documentation. For checking the validity of the internal data study This technique examination was used. Moelong (2014) viz perseverance observation, triangulation, and checking Friend colleagues through discussion.

Analysis of Learning Completion

Calculated use formula according to Ramadani et al (2016) as following:

$$P = \frac{Nt}{N} \times 100\%$$

Description :

- P = Percentage of learning completion
- Nt = Number of students who have completed their studies
- N = Number of students

Classical Completion Analysis

Calculated use formula according to Ramadani et al (2016) as following :

$$x = \frac{\sum xi}{n}$$

Information :

x = Average value

$\sum xi$ = Final value

n = Number of students

After knowing the average value of learning outcomes in percentage form, it is necessary to carry out a conversion to determine the criteria for the level of student learning outcomes :

Table 1. Categories of Student Learning Outcomes

The value of learning outcomes	Category
80%-100%	Very good
70%-79%	Good
60%-69%	Enough
50%-59%	Not enough
0%-49%	Very less

Source: Arikunto (2016)

3. Results and Discussion

Implementation of this research is done with 3 cycles, namely cycle I, II, and cycle III. The researcher carried out the pre-cycle before starting cycle I. In the pre-cycle stage, biology teaching and learning activities in class usually teachers still use lecture and question and answer methods and teachers have not implemented the group investigation model in learning by utilizing the environment around the school. Learning activities from Cycle I, cycle II, and Cycle III are carried out by implementing a group investigation model through the use of the environment around the school.

a. Pre Cycle

The initial step taken by researchers before carrying out classroom action research, namely initial pre-cycle observations to determine student learning outcomes. Observations were carried out by observing during learning activities as well as observing documentation of student learning outcomes in class X Science at Madrasah Aliyah Darud Da'wah Wal-Irsyad Kijang Island. Based on the results of observations and interviews with teachers on November 15, 2022, information was obtained that problems were occurring in the teaching and learning process in the classroom related to the large number of students who were still passive when learning. Only around 3-4 students asked questions. There are also only a few students who take notes. In the learning process, students only listen and

pay attention to the teacher's explanation, without asking questions and answers with the teacher.

Once interviews and observations of students to look for problems that occurred, it was found that when biology learning was carried out, students got low learning outcomes because the learning model that the teacher used was still conventional, meaning students were not involved actively and only waited for explanations and to get answers from the teacher. When the teacher observes the teacher, see a monotonous moment explained. The teacher lectures about material learning and at the end gives assignments to students. Seen moment learning student is not interested in learning and more fun himself alone, sleepy, no listening explanation material presented by the teacher as well seen as bored.

Based on the conclusions from the pre-cycle actions carried out on Monday 15 November 2022, it was found that the learning outcomes of students in class X Science when observed were stated to be still low. It can be seen from the daily test scores of students that there are still many who do not get according to the specified criteria, with a score of 75 to be completed. The average score obtained by students, it is 63.88, where the KKM has not been met with a minimum score of 75 set by the school. Only 8 students were able to get results according to the applicable criteria with a percentage of 30% and the remaining 19 students were not able to get a KKM score with a percentage of 70%. The lowest score obtained by students is 50, while the highest score is 80. Therefore, efforts are needed to improve this, solutions to problems encountered must be found so that student learning outcomes can be improved. The way that can be done is to utilize the group investigation learning model by utilizing what is in the school environment in class X Science MA DDI Kijang Island. This research was carried out in 3 cycles.

b. Cycle I

1) Meeting Planning Stage 1 Cycle I

Several activities were undertaken in the stage including :

- a) Researchers together with teachers created a lesson plan regarding the material discussed at the moment meeting. Internal teacher reference activity learning that utilizes existing RPPs arranged. The RPP contained steps in learning biology in a way detailed by using an investigative model group and utilizing the environment surrounding the school.
- b) Design an observation sheet and include multiple choice questions to carry out cognitive ability tests. The observation sheet is an internal tool evaluating the activities carried out by students at the time learning activities take place, then test-shaped choice

doubles are done to get an understanding of the results of student learning.

2) Cycle I Planning Stage

Action Cycle I Meeting 1

Learning activities were carried out during the first cycle of meetings, held once for 2 x 45 minutes, which was held on Thursday, May 4, 2023. When carrying out the action, students were studying *Plantae material* regarding the characteristics of plants using the Investigation learning model. Groups through the use of the environment around the school. A more comprehensive explanation of the stages followed in the implementation of actions in cycle I, meeting 1 among them namely:

a) Initial activity

Initially, the teacher greets the students and then reads the learning prayer together by asking one of the students to lead the prayer. After this, the teacher took attendance students one by one and told the students to prepare before starting to study by preparing the necessary stationery. Next, the teacher begins apperception before entering the core material, namely by relating events that occur in students' lives to the learning material. Students receive an explanation regarding the competencies that must be mastered, the scope of the material, learning objectives and benefits obtained after learning, and the assessment method carried out by the teacher. The teacher divides students into several groups. Then the teacher asks the students to sit according to the groups that have been determined and the teacher distributes the topic to be investigated to each group.

b) Core activities

Students observe the teacher explaining the material to be investigated. Students are encouraged to ask questions about how to recognize names and groupings, the characteristics of each *Plantae group*, and what are the similarities and differences between mosses, ferns, and seed plants. Next, the teacher invites each group to carry out investigations in the environment around the school according to the topic they have chosen. Students choose a place to conduct the investigation. The teacher directs each group to take several bryophyte, pteridophyta, and spermatophyta plants. The students can differentiate through morphological characteristics between bryophyte, pteridophyte, and spermatophyte plants. Students record the observation data they have made. The teacher then guides the students when completing the observations made. Next, the teacher directs the students to go back inside. Last teacher strengthens material that has been studied with methods that explain return bullet points of important related material, then the teacher asks students from every

group to make a report with the data and information obtained from moment observations to report the can presented at the meeting next.

c) Closing activities

The teacher asks students what material they do not understand. The teacher invites students to conclude the learning material. The teacher reinforces the students' material conclusions. At the end of teacher activities, teachers appreciate the participation given by the students. Students listen to information from the teacher regarding the material studied at the meeting front. The teacher conveys the activities that students will carry out in the lesson next. Teachers provide motivation and moral messages. The teacher closes the learning activity with a joint prayer and greetings.

Action cycle I meeting 2

The learning implementation in cycle I, meeting 2, was carried out for 2 x 45 minutes on Tuesday, 09 May 2023 using the Group Investigation learning model. A more comprehensive explanation of the stages involved in implementation Actions in cycle I meeting 2 includes:

1) Initial activity

The teacher greets the participants and prays together before starting to study with one student leading the prayer. The teacher checks who is taking part in the lesson and who is not present, and then the teacher tells the students to prepare the supplies and equipment needed to study. The teacher carries out apperception by linking students' knowledge with the material to be studied. Students receive information about competencies, scope of material, learning objectives and benefits, learning activities, and how teachers carry out assessments that will be carried out. The teacher directs students to sit according to the designated groups.

2) Core activities

Students listen to the teacher's presentation of introductory material about the characteristics and classification of plants. Then students are asked to ask: Of the various types of plants, how do you know their names and groupings? What characteristics does each group have? Does the existence of plants benefit the earth? Next, the teacher directs students to sit in their respective groups. The teacher asks each group to present the results of their observations according to the topic given. Then the teacher asked other groups to ask or respond to the moderate group presentation. The teacher reinforces the concepts that students have conveyed.

3) Closing activities

The teacher asks students what material they do not understand. The teacher invites students to conclude the learning material. The teacher reinforces the students' conclusions about the material. The teacher gives a test

evaluating learning outcomes. The teacher gives appreciation for the wishes of all participants and educates For participation. Students listen to a briefing from the teacher for the material at the next meeting. Teachers provide motivation and moral messages to students. The teacher ends the lesson with prayer and greetings.

3) Observation stage Cycle 1

The observations carried out in cycle I have the ultimate goal of finding out whether the teaching and learning process is by the prepared plan or not. Observations in cycle I were carried out on the activities of teachers (researchers) and students. During learning activities, from the end to the beginning, the observation process is carried out. The conclusion from observing teacher activities shows that the teacher has carried out a perception of the material, the teacher has conveyed the learning objectives, and the teacher has not been optimal in dividing students into several groups so that some students are still noisy on their own. The teacher does enough to explain the material well so that it is easy for students to understand. Teachers are not optimal in directing students when making observations of the environment around the school, teachers are not optimal in directing students during investigative activities. Teachers are not optimal in guiding students to explain the results of group work guiding students to work together when students discuss group preparation and allowing students to dare to give their opinions about learning activities. This can be seen during learning, there are still many students who are passive during group activities, students are hesitant and afraid when they want to express their point of view, and good communication has not been established between group members. Regarding the results of observations of teacher activities in cycle I, it can be seen from the **Table 2**.

Table 2. Results of Observation of Teacher Activities in Cycle I

N o	Cycle I	Earned Score	Average
1	Meeting 1	33	73.33
2	Meeting 2	35	77.77
	Amount	68	75.55

The conclusions from observations regarding student activities in cycle I show that students have implied a positive attitude during learning activities in cycle I, for example, students are quite good at determining investigation procedures, students can determine locations for observation activities, and students are quite good at carrying out activities. observation. students listen to the teacher when the teacher explains

the learning material, record the results of observations well, students carry out learning activities well. There are still some students who have not been able to identify the components observed, there are still students who are not confident when presenting the results of their group discussions and do not dare to ask questions. This is because students feel embarrassed and are not used to appearing in front of their friends. The results of observations of student activities in cycle I can be seen in Table 3.

Table 3. Results of Observation of Student Activities in Cycle I

N o	Cycle I	Earned Score	Average
1	Meeting 1	16	76.19
2	Meeting 2	8	66.67
	Amount	24	71.43

Apart from data regarding the results of observations that researchers obtained, researchers also obtained data on student learning outcomes by giving test questions to students. At the end of cycle I the teacher carries out tests on all students to assess student learning outcomes during Biology learning activities by implementing the Group Investigation learning model by utilizing the environment around the school. The researcher then analyzed the test result data.

So it can be concluded that student learning outcomes in cycle 1 actions are categorized into medium level. This can be seen based on the average score obtained by students of 70.37 from the predetermined Minimum Completeness Criteria (KKM) score of 75. 12 students achieved above the KKM (44%). There were 15 students whose grades had not yet reached the KKM (56%). The lowest score obtained by the students was 55, while the highest score was 85. Because there were still quite a lot of students who got scores below the KKM, after knowing this the researchers and teachers tried to run the test again in the second cycle in the hope that the next cycle would be even better. and obtain satisfactory and accurate results according to the expectations of researchers and teachers so that student learning outcomes improve.

4. Reflection stage Cycle 1

Before the actions in cycle II begin, initially they must reflect based on the learning process carried out during cycle I. The researcher reflects on the implementation of the Group Investigation learning model through the use of the school environment in the Biology class X Science subject at Madrasah Aliyah Darud Da'wah Wal-Irsyad Kijang Island has not shown encouraging results. This is because there are still students who have not achieved the desired score or are

still below the KKM. Results Reflection activities in cycle I include :

- a. Some students do not understand the material presented by the teacher.
- b. Several students there have not been able to respond to questions given by the teacher.
- c. Seen students Still feel Embarrassed If want to ask the teacher.
- d. There are several current students Not yet focused on the moment to do an investigation.
- e. still divided students' focus so that difficult to center his mind during discussion group.
- f. When presenting results his group of students did not yet believe self so that moment of presentation was Still seen as shy.

Based on the reflection above, the actions taken in cycle II must be immediately corrected to increase the learning outcomes of the class

- a) Teachers need to improve their explanations of the material to be presented.
- b) Give to all over students more Lots Again motivation Study.
- c) Specialize For giving attention more Far For difficult students focus when activity discussion takes place.
- d) Guiding students in making observations.
- e) Cultivate a sense of courage and confidence in students to disclose opinions or the results of the discussion.

c. Cycle II

1) Planning Stage Cycle II Meeting 1

In carrying out learning in cycle II at the meeting, it was carried out with a duration of 2 x 45 minutes on Thursday, May 11, 2023. To carry out this action students will learn about *Plantae* Bryophyta (moss) and ferns (pteridophyta) using the Group Investigation learning model through the use of the environment around the school. Further explanation regarding the implementation of cycle II action steps, namely :

a) Initial activity

The teacher says greetings then the students read a prayer together before starting the lesson by ordering a student to lead the prayer. Then the teacher records how many students attended the lesson and directs the students to prepare the required learning equipment. Before entering the material, the teacher begins an apperception method that links students' daily lives with the material to be studied. Students receive an explanation about the competencies that must be achieved, the subject matter, learning objectives and benefits that arise after learning, the implementation of learning, and the system that the teacher will use in rate.

The teacher asks the students to sit according to the groups they have determined. The teacher distributes the topic to be investigated to each group.

b) Core activities

Students observe the teacher in explaining clearly the material they want to investigate. The teacher invites each group to carry out investigations in the environment around the school according to the topic they have chosen. Students choose a place to conduct the investigation. Students record the results of observations they have made. The teacher directs each group to take several examples of bryophyte and pteridophyte plants found in the environment around the school. The teacher directs students when carrying out the observations made. Then the teacher directs the students back to class. Then the teacher gives reinforcement from the material that has been delivered. Master ordered each group to gather data and information resulting from investigations in the form of report assignments at the meeting furthermore reports can be presented.

c) Closing activities

The teacher asks students what material they do not understand. Teachers direct students to make conclusions together from the learning material discussed. The teacher again strengthens the conclusion of material from students. The teacher says to accept love Because participants already want to participate. Then the teacher explained material learning further to students at the next meeting day. Learning ended with an activity of praying together and the teacher gave greetings.

2) Cycle II Actions Meeting 2

The implementation of learning in cycle II at meeting 2 was carried out with a duration of 2 x 45 minutes on Tuesday, May 16 2023 using the Group Investigation learning model by utilizing the environment around the school.

a. Initial activity

The teacher greets the students and then prays together before starting the lesson, starting with one student leading the prayer. Furthermore, if there are students who are not present, the teacher urges students to prepare by bringing equipment for studying. The teacher begins learning with apperception where the teacher links the initial knowledge that students have with the learning material. Students get an understanding of the required abilities achieved, principal discussion, purpose of learning and the benefits achieved after learning, learning activities, as well method used For evaluation. The teacher directs students to sit according to their designated groups.

b. Core activities

Students observe the teacher explaining material about ferns. Next, students will be interested in asking questions about: What is the life cycle of ferns? How are ferns useful? Then the teacher ordered the students to sit according to their groups. The teacher asks each group to present an investigation based on the topic that has been given. The teacher directs the other groups to submit questions and provide responses regarding the results of the medium group investigation. The teacher reinforces the concepts that students have conveyed.

c. Closing Activities

The teacher asks students what material they do not understand. The teacher invites students to conclude along with learning materials. The teacher reinforces the students' material conclusions. The teacher gives a test evaluating learning outcomes. The teacher gives praise because all students participate. Students listen when the teacher gives directions about the material in the upcoming meeting. Teachers motivate and give moral messages to students. The lesson ended with a joint prayer and greetings.

3) Observation Stage Cycle II

In cycle II, observations were carried out with the intent of getting information regarding the teaching and learning process through plans that have been designed or are not appropriate. Implementation observation in cycle II was carried out through the activities of teachers (researchers) and students. Observation activities are carried out while learning is in progress until the learning ends. The activities of the teacher (researcher) in cycle II obtained the final results from observations which showed that the teacher had carried out apperception before entering this material. The teacher has allowed students to choose various questions related to learning, presented and answered by students. Students are distributed by the teacher to each group, teacher with maximum directing the moment students to the surrounding environment For observing at school, the teacher has maximally guided students in investigative activities, the teacher has encouraged students to ask about things they haven't yet capable of understood or the teacher asks the students a few questions regarding the material studied. So that it can increase students' courageous nature. However, when students make presentations of the results of their group work, the teacher does not guide students and guide students to work together during group discussions and allows students to express their opinions about the teaching and learning process. This can be seen through the passiveness of group activities carried out by students, and the lack of self-confidence in students if they want to explain their point of view. The results of

observations from teacher activities in cycle II can be seen in Table 4.

Table 4. Results of Observation of Teacher Activities in Cycle II

N o	Cycle II	Earned Score	Average
1	Meeting 1	47	78.33
2	Meeting 2	48	80
Amount		95	79.16

Observations of student activities showed that the results in cycle II showed that students obtained more satisfactory results than those from cycle I. This can be seen from the positive attitudes of students in the learning process in cycle II, such as students being able to determine investigation procedures, and students being able to determine locations for observation activities. Students are quite good at carrying out observation activities, students record the results of observations well, students listen with focus when the teacher explains the material, students go through the learning process well, and students can identify the components observed. However, there are still students who lack confidence in presenting the results of their group work in front of their friends, and students are still passive in asking questions to the group that is performing. The following are the results of observations of student activities in cycle II which can be seen from table 5.

Table 5. Results of Observation of Student Activities in Cycle II

N o	Cycle II	Earned Score	Average
1	Meeting 1	21	75
2	Meeting 2	12	75
Amount		33	75

Not only through results data observation, researchers also obtain data on student learning outcomes through tests (questions) filled in by students. At the end of cycle II, the teacher conducted a question test for all students to find out the level of student learning outcomes when learning Biology by implementing a group investigation learning model through the use of the environment around the school.

Based on the data obtained by researchers in cycle II, it is known that the learning outcomes of class The percentage increase was 19%, namely from 44% to 63%. So it is concluded that the level of student learning outcomes in the first cycle of action is in the good category. This can be seen from the average score obtained by students of 75.18 from the predetermined Minimum Completeness Criteria (KKM) score of 75. There were 17 students (63%) who achieved above the

KKM. There were 10 students with grades that had not reached the KKM (37%). The lowest score obtained by students was 55, while the highest score was 85. Because there were still many students who got scores below the KKM, seeing these results, researchers and teachers tried to carry out cycle tests again in cycle 3. It is hoped that in the next cycle, they will get maximum results as expected. by researchers and subject teachers so that student learning outcomes become better.

4) Reflection Stage Cycle 2

Before the action in cycle III begins, reflection is carried out first through the learning process during cycle II taking place. Reflections carried out by researchers on the implementation of the group investigation learning model through the use of the school environment in the Biology subject class In cycle II, the results of the reflection include:

- 1) Some students can't focus when discussing group
- 2) Students have a visible lack of confidence at times when they present the presentation of results to their group.
- 3) There are still some students who get scores less than the KKM.

Based on this reflection, it is urgently needed to improve actions for cycle III to increase the learning outcomes of the class.

- 1) More attention is given to students who have difficulty focusing at the moment of the lesson.
- 2) Make the student believe more himself Alone moment explained to report the discussion.

In cycle II, the class average value is found improvements, but still, there are students with mark No included in the success criteria. There are 63% of students who get grades according to the KKM so required study to stage/cycle III.

d. Cycle III Research Results

1) Cycle III Action Planning Stage

Cycle III will begin on Thursday, 25 May 2023, and Tuesday, 30 May 2023. Cycle III will be carried out in 2 meetings. During cycle III, the group investigation learning model was implemented through the use of the school's surrounding environment in the Biology class X Science subject at Madrasah Aliyah Darud Da'wah Wal-Irsyad Kijang Island. This research is divided into the planning stage, action/implementation stage, observation stage, and reflection stage.

In essence, the planning stage is a very important stage to anticipate low student learning outcomes. It is hoped that the group investigation learning model by utilizing the environment around the school can improve student learning outcomes. Therefore, a good plan is needed before carrying out the action stage. Several plans implemented in the planning stage of cycle III are:

- 1) Designing a lesson plan regarding material is the main thing that will be studied by the participant. The RPP utilized For becomes inside reference activity learning later. The lesson plan contains various activity learning materials Biology using a group investigative learning model through the use of the environment around the school.
- 2) Arranging sheets observation as well as question For test cognitive form choice double. Evaluation tool form sheet observation used for activities students during the learning process taking place can evaluate and results Study student is known through answer choice double.

2) Cycle III implementation stage

Action cycle III meeting 1

Cycle III was implemented at the first learning meeting and was carried out for 2 x 45 minutes on Thursday, May 25, 2023. During this action, students will carry out a Study regarding *Plantae* material regarding seed plants (Spermatophyta) using the Group Investigation learning model through the use of the environment around the school. Explanation regarding the implementation of actions in cycle III meeting 1, namely :

a) Initial activity

The teacher says greetings then the students read a prayer together before starting learning and ask for help from one of the students who is willing to lead the prayer. The teacher then checks whether any of the students are absent and tells the students to prepare before starting to study by bringing their respective study equipment. The teacher carries out apperception by making connections with students' knowledge of the material to be studied. Students receive information about competencies, scope of material, learning objectives and benefits, learning activities, and assessment methods that will be implemented. The teacher asks the students to sit according to the groups they have determined. The teacher distributes the topic to be investigated to each group.

b) Core activities

Students observe the teacher explaining material about seed plants (*Spermatophyta*). Then Learners are interested in asking about: What are the classifications of seed plants? What are the main characteristics of seed plants? Next, the teacher invites each group to carry out investigations in the environment around the school according to the topic they have chosen. Students choose a place to conduct the investigation. The teacher directs each group to take several examples of spermatophyta plants in the environment around the school. The results of the observations that have been made are recorded by the students. Next, the teacher directs students when

observing activities are carried out. Next, the teacher directs students to enter the class. The teacher reinforces the material previously explained. Master ordered a student in a way group to make a report and end the investigation based on data and information obtained which will be utilized For material presentation on Sunday learning.

c) Closing activities

The teacher asks students what material they do not understand. The teacher invites students to conclude the learning material. The teacher reinforces the students' material conclusions. The teacher said to accept love Because participants who are educated Already give his attention. Next, students listen as the teacher gives directions for the material for the upcoming meeting. The teacher conveys the activities that students will carry out at the next meeting. Teachers provide motivation and moral messages. At the end of the lesson, the teacher closes with prayers and greetings.

Cycle III Actions Meeting 2

Implementation of learning in cycle III at meeting 2 was carried out with a duration of 2 x 45 minutes on Tuesday 30 May using the Group Investigation learning model through the use of the environment around the school. The description of the steps for implementing actions in cycle III meeting 2 is as follows:

a) Initial activity

The teacher says greetings then the students perform a prayer before studying (asking a student to lead the prayer). The teacher checks the students' attendance and asks the students to prepare the necessary supplies and equipment. The teacher carries out apperception by linking students' knowledge with the material to be studied. Students receive information about competencies, scope of material, learning objectives and benefits, learning activities, and assessment methods that will be implemented. The teacher asks the students to sit according to the groups they have determined.

b) Core activities

Students observe the teacher's explanation of introductory material. Then students are motivated to ask questions about: What are the benefits of spermatophyta plants? Next, the teacher asks each group to present the results of the investigation according to the main points already discussed and determined. The teacher invites other groups to submit questions and provide responses from the results of investigations into medium group presentations. The teacher reinforces the concepts that students have conveyed.

c) Closing activities

The teacher asks students what material they do not understand. The teacher invites students to conclude the learning material. The teacher reinforces the students'

material conclusions. The teacher gives a test evaluating learning outcomes. The teacher appreciates all students for their participation. Students listen to instructions from teachers for material at the upcoming meeting. The teacher gives the students Spirit Study and moral messages to students. The teacher ends the lesson with prayer and greetings.

3) Cycle III Stage Observation

Observations in cycle III focus on knowing whether the teaching and learning process is to the initial plan that has been designed or not. Observation activities in cycle III were carried out on the activities of teachers (researchers) and students. Observations are made during the learning process until the learning is completed. The results of observations of the teacher's (researcher's) activities in cycle III showed that the teacher had carried out an apperception of the material. The teacher has allowed students to identify various questions related to the learning presented and answered by students. The teacher has divided students into groups, the teacher has maximally directed students when making observations in the environment around the school, the teacher has maximally guided students in investigative activities, the teacher has given motivation to students to ask about things they don't understand or the teacher conveyed some questions to students related to the material being studied. So it can grow students' courage. The teacher has done his best in directing students in presenting the results of group work as well as guiding students to work together in group discussions and giving students opportunities to express opinions regarding learning activities. This can be seen from the group's activities which are active and confident in expressing their opinions. The results of observations of teacher activities in cycle III can be seen in the following table:

Table 6. Results of Observation of Teacher Activities in Cycle III

No	Cycle III	Earned Score	Average
1	Meeting 1	51	85
2	Meeting 2	54	90
Amount		105	87.5

Known student activities based on observations made in cycle III show that students are better than in cycles I and II. This can be seen through the positive attitude shown by students during the learning process in cycle III, such as students being able to determine investigation procedures, students being able to determine locations for observation activities, and students being quite good at carrying out observation activities. students focus their attention on the teacher

when delivering learning material, students have carried out the learning process satisfactorily, and students can identify the components observed. Students are no longer shy and brave, do presentations from results group discussions, and have actively asked friends and teachers. The results of observations of student activities in cycle III can be seen in the Table 7.

Table 7. Results of Observation of Student Activities in Cycle III

N o	Cycle III	Earned Score	Average
1	Meeting 1	26	92.85
2	Meeting 2	15	93.75
Amount		41	93.3

Apart from data obtained from observations, researchers also input data on student learning outcomes by using test questions. In the final stage of cycle III, the teacher conducts test questions for all students to measure student learning outcomes in Biology learning by implementing a group investigation learning model through the use of the school environment.

Based on the data obtained by researchers in this cycle, it was concluded that the learning outcomes of class The percentage increase at the end of cycle III was 22%, namely from 63% to 85%. So it can be concluded that the level of student learning outcomes in cycle III actions is in the very good category. This can be observed from the average score obtained by students of 81.85 from the predetermined Minimum Completeness Criteria (KKM) score of 75. There were 23 students (85%) who achieved above the KKM. There were 4 students with grades that had not reached the KKM (15%). The lowest score obtained by students was 70, while the highest score was 90.

a. Reflection stage

Based on the data presented and the findings obtained in cycle III, as follows are several things obtained:

- 1) The learning process has gone according to plan
- 2) The average student learning outcomes in *Plantae material* in cycle III using the group investigation learning model through the use of the school environment is 81.85 with the highest score being 90 and the lowest score being 70.
- 3) The learning outcomes students experience improvement from the previous cycle. Student learning outcomes increased by 22%. Of the 27 students, 23 students got scores according to the KKM or a percentage of 85% of students got a score ≥ 75 . Concluded that in cycle III all has fulfilled Good completeness of student learning outcomes according to the KKM and completeness of student

learning classically \. Actions executed moment cycle III can conclude Already by targets and better from the cycle before. Students can understand the material explained and are capable of learning hook material with their lives. In cycle III, students also can focus Alone when learning and pay attention when the teacher explains the material. This can be seen through the results obtained in cycle III can be said to fulfill criteria minimal and increasing completion Good If compared to cycle before. The Biology learning outcomes for the class.

Table 8 . Recapitulation of Biology Learning Results in pre-cycle, cycles I, II, and III

Results	Pre cycle	Cycle I	Cycle II	Cycle III
Lowest value	50	55	55	70
The highest score	80	85	85	90
Students who did not complete	19	15	10	4
Completed students	8	12	17	23
Average	63.88	70.37	75.18	81.85

Based on data obtained by researchers, it was found that there was an increase in student learning outcomes. This data is observed from students who get a score ≥ 7 , students who get a score ≤ 75 , as well as the average student score. At the beginning of the learning activities or pre-cycle, the students' learning outcomes obtained an average success rate of 63.88 and only 8 students, or 30% were above the KKM, so the classroom action research treatment had the aim of increasing the learning outcomes of class X Madrasah Science students. Aliyah Darud Da'wah Wal-Irsyad Kijang Island. Then during the first cycle, student learning outcomes produced an average of 70.37 with 12 students achieving the KKM or 44%. In cycle II the average student learning outcome reached 75.18 with 17 students achieving the KKM or 63%. Furthermore, in cycle III the average student learning outcomes reached 81.85 with 23 students achieving the KKM or 85%. This shows that student learning outcomes increase in learning in each cycle. Increased student learning outcomes from pre-cycle to cycle III by 55%. The increase in test results can be said to be significant. Based on these results, it can be stated that the learning outcomes of class.

The results of classroom action research that was carried out in class. This is because by implementing a group investigation learning model through the use of the environment around the school is very liked by many students. Students feel that learning by utilizing the environment around the school is very enjoyable and makes it easier for students to feel bored while studying,

and students feel happy if they study in groups because it makes it easier for students to understand the lesson. Students can ask questions if they are confused and can work together with friends so that it is easier to carry out learning because the assignments are done together. Answer questions become easier too because searching for friends. This learning model helps teachers connect learning material with students' daily lives and encourages students to create connections between the material studied and their daily lives.

The group investigation model makes students actively involved where students can determine the material to be discussed according to their group, this will make it easier for students to understand the learning material being studied. This agrees with Kaharuddin's (2020) theory that students make choices from various sources of information, choose subject matter, and then students enter study groups with the same choice of subject matter.

The group investigation model carried out with students will motivate curiosity about the Plantae material and have a good impact when carrying out assignments given by the teacher. Students became very active in asking questions about things they didn't know during discussions, students felt enthusiastic when solving existing problems, to the point that some students even forgot about break time. S full of students Spirit and active when activity This is what learning is capable of creating learning results increases. In line with Artini's theory (2016) which states that the group investigation model opens up opportunities for students so that they can organize various abilities or competencies within themselves so that students can carry out various activities actively and constructively through the learning process. Wasingah (2017) also stated that by implementing the group investigative learning model students will experience increased learning outcomes because students do not feel afraid or hesitant to express opinions. personal.

Implementation of the group investigation learning model in the biology subject Plantae material can improve student learning outcomes. The group investigation learning model has become a solution to overcome the lack of student learning outcomes. By using this group investigation model, students will be better able to think, communicate, solve existing problems, and make it easier for students to understand the material being studied so that learning outcomes improve. According to Anita's (2013) research, the group investigation learning model also has advantages, including students being trained to think scientifically, practicing their communication skills, practicing

respecting other people's opinions, and working together in the same group to solve the same problem.

All activities faced by students in the group investigation learning model enable students to have better self-confidence and this has a good impact on improving learning outcomes. Success in the learning process is closely related to existing obstacles because students' habits only rely on explanations from their teachers so students act passively in class. However, researchers can find solutions to all of these things by providing a lot of guidance, as well as encouraging, giving direction, or showing students the way to be serious and disciplined so that the learning process is carried out well and successfully.

Based on the research that has been carried out, it can be concluded that with the implementation of the group investigation learning model through the use of the school environment for class, students can think actively individually or in groups so that they can carry out learning well and according to learning objectives.

4. Conclusion

Based on the results of researchers and data analysis, it can be concluded that the group investigation learning model through the use of the school environment can improve student learning outcomes in Biology class subjects. X IPA Madrasah Aliyah Darud Da'wah Wal-Irsyad Kijang Island. This can be seen from the results of student test assessments in the pre-cycle with an average student learning of 63.88 and only 8 students completing or 29%. In cycle I the average student learning was 70.37 with 12 students completing or 44%. In cycle II the average student learning outcome reached 75.18 with 17 students or 63% completing. Furthermore, in cycle III the average student learning outcomes reached 81.85 with 23 students completing or 85%. This shows that student learning outcomes increase in learning in each cycle. The increase in student results from pre-cycle to cycle III was 55%. Based on the research results obtained, in efforts to improve student learning outcomes, the author suggests to biology subject teachers should apply the group investigation learning model by utilizing the school environment in biology learning by the material to be studied so that biology learning outcomes can improve. For future researchers who wish to study similar research to further deepen the application of the group investigation learning model so that the expected results are more effective.

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