



**IMPROVING STUDENT LEARNING OUTCOMES THROUGH  
DISCOVERY LEARNING MODEL IN SCIENCE SUBJECTS  
ELECTRICITY AND ELECTRICAL TECHNOLOGY IN THE  
ENVIRONMENT OF CLASS IX SMP NEGERI 1 KUNIR LESSON YEAR  
2021/2022 ODD SEMESTER**

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**Abstract**

This study aimed to improve the learning outcomes of 9th grade students of SMPN 1 Kunir in following the science learning of electricity and electrical technology with a discovery learning approach. This research took place at SMPN 1 Kunir, Kunir District, Lumajang Regency, East Java Province. This research was conducted in the odd semester of the 2021 - 2022 school year from September to October 2021. The research subjects were students of Class IX SMPN 1 Kunir in the 2021/2022 academic year on science learning on the subject of electricity and electrical technology consisting of 32 students. Based on the results of the research conducted, it can be concluded that the application of discovery learning by teachers is considered to be able to improve student learning outcomes in learning electricity and electrical technology in the environment in class IX SMPN 1 Kunir. This can be seen through the results of observations and assessments made by teachers on student learning outcomes increased significantly starting from the pre-cycle with average results less increased to quite good in cycle I and became good in cycle II. So, it can be concluded that the implementation of the action of applying the Discovery learning type learning model in learning science electricity and electrical technology in class IX SMPN 1 Kunir can improve student learning outcomes in the classroom.

**Keywords:** Learning Outcomes, Discovery Learning, Science, Electricity

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## INTRODUCTION

Education at school is a learning medium to transfer knowledge. This knowledge is expected to be useful in everyday life both at home and in society. One measure of learning success is student learning outcomes. Because with student learning outcomes, student abilities can be known. There are various kinds of learning models that teachers apply in an effort to transfer their knowledge while at school. The learning model used is usually adjusted to the material and conditions of the students in the class.

The implementation of the 2013 curriculum according to Permendikbud Number 22 of 2016 concerning process standards uses 3 (three) learning models namely discovery learning model, problem-based learning model, and project-based learning model. Discovery/Inquiry Learning model is understanding concepts, meanings, and relationships through an intuitive process to eventually come to a conclusion. Discovery occurs when individuals engage primarily in the use of their mental processes to discover some concepts and principles. Discovery is done through observation, classification, measurement, prediction, determination, and inference. The above process is called Cognitive Process while Discovery itself is The Mental Process of Assimilating Concepts and Principles in The Mind.

In science subjects, one of the learning models used by teachers is the

discovery learning model. The discovery learning model is also called the inquiry-based and constructivist-based discovery learning method. With discovery learning, students are expected to utilize their own experiences and prior knowledge to solve problems. So that students learn independently, can manipulate objects and conduct experiments before making their own conclusions. The discovery learning model provides opportunities for learners to search, find, and formulate the concepts of learning materials. Brunner & Suddarth, (2013) explained that there are 3 (three) processes in discovery learning that take place simultaneously, namely obtaining new information, transforming information, testing the relevance and accuracy of knowledge.

Based on the background, identification and limitation of the problem, the research problem can be formulated as follows: "Can the discovery learning model improve the learning outcomes of 9th grade students of SMPN 1 Kunir in science subjects in learning electricity and electrical technology?".

## METHOD

This research took place at SMPN 1 Kunir which is located at Jalan Raya No. 3 Kunir, Kunir, Kunir District, Lumajang Regency, East Java Province. This research was conducted in the odd semester of the 2021 - 2022 school year from September to October 2021. The research subjects were students of Class IX SMPN 1 Kunir in the 2021/2022 academic year in Science Learning on the subject of electricity and electrical technology consisting of 32 students.

### Data Collection Technique

Data collection in this class action research was carried out in the following ways:

#### Observation

Observation is a direct observation carried out by researchers with the assistance of a team of observers to record all conditions that occur in the learning process, including aspects carried out in the learning process, systematic or implementation steps, how the teacher presents and student responses, and other things found during the research. The research instrument used for observation is an observation sheet filled in by peer observers.

#### Documentation

Documentation is done by utilizing existing documents to obtain data needed in research, such as learning programs, school profiles, student test results, teacher records, and others.

#### Test

Tests were conducted to measure students' learning motivation related to reading skills, so that the increase in student achievement as a result of the implementation of the action could be clearly described.

## RESULTS AND DISCUSSION

The discovery learning process can improve students' knowledge, skills, and attitudes. through stimulation, problem identification, data collection, data processing, proof, and drawing conclusions. drawing conclusions. This is in line with Uside et al. (2013) who stated that the discovery learning model can improve students' mastery of concepts and knowledge. Mahmoud (2014) also stated that discovery learning can improve achievement and metacognitive skills.

metacognitive ability.

Based on the table below, it can be explained that the results of learning outcomes by students before action and after action by the teacher have seen a significant increase. Based on research that has been carried out previously by carrying out observation actions, the results of the assessment of student learning outcomes in pre-cycle, cycle I, cycle II in student learning outcomes can be explained in the following table:

**Table 1.** Recapitulation of comparison of student learning outcomes pre-cycle, cycle I and cycle II

No.	Observed data	Action Percentage			Description
		Pra Cycle	Cycle I	Cycle II	
1	Highest score	80	82	85	Increased
2	Lowest score	60	60	68	Increased
3	Students who are complete (score > KKM)	10	20	28	Increased
4	Students who are not complete (score > KKM)	22	12	4	Increased
5	Average	64.94	70.69	77.41	Increased
6	Percentage who completed	31.25%	62.50%	87.50%	Increased
7	Percentage who did not complete	68.75%	37.50%	12.50%	Increased

In the pre-cycle, the average learning of electrical material and electrical technology in the student environment in the classroom was 64.94 which was in the poor category. Assessment in cycle I obtained the average result of student learning outcomes of 70.69 which is in the good enough category, these results increased compared to pre-cycle results with an increase of 5.75. The assessment in cycle II obtained an average mastery of material of 77.41 which was in the

good category, this result increased by 6.72 compared to cycle I. The results of student activity in learning electricity and electrical technology in the classroom environment also showed an increase. Based on research that has been carried out previously by carrying out observation actions, the results of the assessment of student activity indicators in the pre-cycle, cycle I, cycle II in the results of student activity in the classroom can be explained in the following table.

**Table 2.** Recapitulation of comparison of student activity results pre-cycle, cycle I and cycle II

No.	Student Activity Results	Action Percentage			Description
		Pra Cycle	Cycle I	Cycle II	
1	Total score	631	728	796	Increased
2	Average score	19.7	22.75	24.875	Increased
3	Percentage	65.7%	75.8%	82.9%	Increased
4	Categori	Kurang	Cukup Baik	Baik	Increased

In the pre-cycle, the average student activity in the learning process of electrical material and electrical technology in the classroom environment is 65.7% which is in the poor category. Assessment in cycle I obtained the average results of student activity in the learning process of electrical material and electrical technology in the classroom environment was 22.75 with 75.8% completeness which was in the good enough category, these results increased compared to the pre-cycle results with an increase of 10.1%. Assessment in cycle II obtained the average results of student activity in the learning process of electrical material and electrical technology in the environment in the classroom was 82.9% which was in the very good category, this result increased by 7.1% compared to cycle I. So that it is assessed that the actions taken in cycle II were carried out in the classroom. So it is considered that the actions taken in cycle II have succeeded in meeting the predetermined success criteria, for that there is no need for action in the next cycle.

## CONCLUSIONS AND SUGGESTIONS

### Conclusions

Based on the results of the research conducted, it can be concluded that the application of discovery learning by teachers is considered to be able to improve student learning outcomes in learning electricity and electrical technology in the environment in class IX SMPN 1 Kunir. This can be seen through the results of observations and assessments made by teachers on student learning outcomes increased significantly starting from pre-cycle with average results less increased to quite good in cycle I and became good in cycle II. So it can be concluded that the implementation of the action of applying the Discovery learning type learning model in learning science electricity and electrical technology in class IX SMPN 1 Kunir can improve student learning outcomes in the classroom.

### Suggestions

Based on the research results and conclusions, the researcher can propose several suggestions which are explained as follows:

1. There needs to be additional application with the use of learning methods that are in accordance with learning. The method will make it easier for students to understand the material so that learning outcomes will also increase.

2. There needs to be better media development and in accordance with classroom learning so that teachers can be more effective and efficient in teaching in the classroom.

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