

Increasing Student Interest and Learning Outcomes Through the Discovery Learning Model on Subject Human Respiratory System

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ABSTRACT

This study aims to determine the increase in student interest and achievement of student learning outcomes through the Discovery Learning model in science subjects on Human Respiratory System. The background of this research is the lack of interest of students in participating in learning and the lack of achievement of student learning outcomes. Students in participating in learning and the lack of maximum achievement of student learning outcomes. This is indicated by the achievement of student learning outcomes that still do not meet the Minimum Completeness Criteria (KKM). This research uses the type of Classroom Action Research (PTK) which was conducted in 2 cycles. Implemented in 2 cycles. Each cycle is described in four stages, namely planning; implementation; observation; and ends with reflection. The research design used Kemmis & Mc Taggart model. This research was conducted in the even semester of the academic year 2022/2023, namely in May 2023 with a research sample of 30 students. The data collection methods used were observation to measure students' interest in learning and evaluation tests used to measure the achievement of student learning outcomes. Evaluation test used to measure the achievement of student learning outcomes. This research uses data analysis techniques in the form of quantitative and qualitative descriptive techniques. The results showed an increase in student interest in learning from 68.33% in cycle I to 84.99% in cycle II. The achievement of student learning outcomes measured through tests also increased, from 36.67% in cycle I to 56.67% in cycle II. Thus the application of the Discovery Learning model learning model in science subjects about the Human Respiratory System can increase the interest and achievement of learning learning outcomes of students in class VIII A SMP Muhammadiyah Sewon.

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INTRODUCTION

Every human being is expected to be able to obtain quality education in his life. Education is said to be quality if it is not just accumulating knowledge or providing provisions to students in the form of science alone, but can achieve a learning competency. The learning competence in question is a combination of affective aspects (attitudes), cognitive aspects (knowledge), and psychomotor (skills) which are reflected in life so that they are able to form and foster good character in students.

Learning activities are a core activity in the entire series of educational processes. How the learning process is designed and implemented professionally is the key to achieving the expected educational goals. For this reason, the educational process needs to be carefully planned so that learning activities can be more meaningful and take place optimally.

Learning activities ideally always involve two main actors, namely teachers as educators and students as learners. Teachers as educators are expected to provide a comfortable, sustainable and structured learning atmosphere for students. Meanwhile, students as learners will enjoy the learning atmosphere created by the teacher. Students who are actively involved in learning activities will create an ideal learning process, namely a two-way learning process. Such learning activities are expected to increase students' interest in learning because they are directly involved in the learning process, not just listening to the material delivered by the teacher.

The development of science and technology requires teachers as educators to be able to create and develop a learning tool using learning strategies, models, and methods. Furthermore, from the learning tools learning tools that have been prepared, learning activities are packaged to be more interactive and interesting with the hope of being a benchmark for improving the quality of education. interesting in the hope that it can be a benchmark for improving the quality of education. The application of effective learning model will help teachers in choosing the right teaching techniques in bringing the desired changes in student behavior. techniques in bringing about the desired changes in student behavior.

Students' learning interest in science learning at SMP Muhammadiyah Sewon has so far been considered still lacking. This is shown during classroom learning, many students look less excited and motivated in participating in learning activities. In addition, there is no active student involvement in learning. The learning that takes place is still teacher centered which means that it is more dominated by the teacher. Students just become passive actors who listen to explanations from the teacher. In the end, the lack of student interest in learning also has an impact on the achievement of student learning outcomes which are still lacking. Departing from these two things, it is necessary to have innovation from teachers related to improving the learning process in the classroom using an effective learning model.

According to Suhana (2014), the learning model is a series of teaching and learning activities that take place continuously, which includes all learning activities between teachers and students. The activity is in the form of interaction between the two which is packaged in a certain learning design with the help of special teaching materials. Of the many learning models developed in Indonesia, one of them is the discovery learning model.

The Discovery Learning model has several characteristics including: (1) students are the center of all learning activities; (2) there are problem solving or problem solving activities and exploration so that knowledge can be connected and generalized; and (3) the combination of new knowledge with past knowledge (Kristin, 2016). The Discovery Learning model has a general purpose to help develop students' thinking skills as well as several other types of skills such as questioning skills, expression skills, identification skills, and skills to find answers that come from their curiosity. The application of the Discovery Learning model is one of the efforts that

can be made to help solve problems related to the lack of active student learning activities and results in a lack of interest and achievement of student learning outcomes.

Learning interests have seven characteristics, namely: growing along with physical and mental development, dependence in the process of learning activities, limitations in the development of interests, depending on whether there are opportunities to learn or not, influenced by culture in society, has emotional weight and is self-centered. (Susanto, 2013). Learning outcomes are defined as the main goal of a learning process carried out by teachers, either at school or wherever the learning process is carried out implemented by the teacher, either at school or wherever the learning process takes place. Learning results are said to get good results if they have reached or exceeded the predetermined criteria. or exceed the predetermined criteria. Purwanto (2011) states that learning outcomes learning results have indicators in the form of changes in student behavior in cognitive, affective, and psychomotor aspects arising from a process of learning activities. The existence of changes in behavior is due to the achievement of competence and student understanding of the material in a learning activity.

Several studies support that the application of the Discovery Learning model Learning model affects students' interest and learning outcomes, among others, are: (1) Research from Maharani & Hardini (2017) which shows that there is an increase in science learning outcomes using the Discovery Learning model compared to the Discovery Learning method. learning outcomes using the Discovery Learning learning model compared to conventional methods; (2) Research from Rini Siswanti (2013) which shows the results that the Discovery Learning model can increase student interest and learning outcomes; and (3) Research from I Made Putrayasa (2014) which shows that students' interest and learning outcomes have increased after the application of the Discovery Learning model. increased after the application of the Discovery Learning model.

Science learning activities at SMP Muhammadiyah Sewon so far are still limited to conventional learning that is carried out in class through the lecture method. This type of learning is teacher centered learning. In addition, there are limited learning models applied by teachers. This in fact has an impact on learning interest and student learning outcomes that are still not optimal. Whereas science learning, especially on the material of the Human Respiratory System, will be less than optimal if it uses conventional methods. In learning this material, students should be actively involved in learning activities. Thus students can directly relate the material to their daily lives, for example material related to the names and functions of human respiratory organs to disorders and abnormalities in the respiratory system.

One of the special characteristics of the Discovery Learning model is student centered learning. Therefore, the application of the learning model, it is hoped that it can increase the role of students in actively in participating in science learning activities which have an impact on increasing students' interest and learning outcomes.

METHODS

This research was conducted using a type of Classroom Action Research (PTK) with a design from Kemmis & Mc Taggart. This research design was chosen because the flow and stages of each action are simple and easy for researchers to understand. Classroom action research is a study by applying an approach, model, or method of learning to improve the quality of learning activities. method to improve the quality of learning activities so that learning objectives can be achieved. This research took place over 2 cycles, namely cycle I which was held on May 2-5, 2023, and cycle II which was held on May 15-19, 2023. Each cycle consists of four stages, namely planning; acting or implementing; observing; and reflecting.

Cycle I began with the planning stage. At this stage, initial reflection activities were carried out from the results of the previous study. In addition, research preparation was also carried out including the preparation of lesson plans and the preparation of assessment instruments containing 5W 1H (what, why, when, where, who, how). The preparation of the lesson plan was based on the syllabus as a guideline for achieving learning competencies.

In the implementation stage, the implementation of activities is carried out in the form of applying the Discovery Learning model to classroom learning. The process of implementing learning activities at this stage is carried out through 4 activities, namely: (1) apperception/initial activities; (2) core activities; (3); final activity; (4) closing. The observation stage is carried out simultaneously with the implementation stage because the observation is carried out while the action is being implemented. At this stage, the researcher will directly observe the student learning process assisted by a peer (collaborator) who will observe the learning process. The components of the observation are adjusted to the instrument that has been prepared by the researcher.

At the reflection stage, the researcher will discuss with the collaborator regarding the findings during the implementation of the activity. This reflection activity also includes identification, analysis, evaluation, and conclusion. Furthermore, the results of these observations and discussions are used to develop an action plan for the next cycle. Actions that are considered less useful in research will be improved, while actions that have provided good results are still carried out in cycle 2 activities.

Cycle II begins with the planning stage which is compiled based on the results of observations and reflections on cycle I. The action implementation stage is carried out in accordance with the learning improvement plan. Observation stages are carried out on every symptom of behavior change experienced by students. Important notes are made during the learning process, which can be used as research material, and observation of the teaching and learning process is carried out using observation guidelines. Using the results of observations, interviews, and daily notes of cycle II, researchers made corrections to identify actions that did not lead to the same goals, then made the necessary changes to achieve better results. If there were still gaps, further improvements were needed due to time constraints; these shortcomings were rectified outside of this study.

This research was conducted in the even semester of the 2022/2023 academic year, in May. The subjects of this study were students of class VIII A SMP Muhammadiyah Sewon consisting of 20 male students and 10 female students with a

total of 30 students. The object of this research is the interest and achievement of student learning outcomes. The research was conducted on the subject of Natural Sciences material on the Human Respiratory System.

The use of data collection methods in this study is adjusted to the type of data taken observation and evaluation of learning outcomes. Observation is an observation made and recording of events that are carried out systematically. The observation method is used to collect qualitative information about student and teacher learning in the context of teaching and learning activities. Information from this observation includes students' reactions and attitudes towards learning, students' reactions and attitudes towards the learning process situation, changes in student attitudes during learning, the relationship between learning planning and learning activities. In this method, data collection instruments are used in the form of observation guidelines and questionnaires. Questionnaires are written statements, or a set of questions given to respondents. While the data collection method in the form of evaluation of learning outcomes uses tests as an instrument. The test aims to measure the level of student ability, the achievement of learning outcomes, and the success of learning in accordance with the learning objectives that have been set.

The data analysis techniques used in this study are quantitative descriptive techniques and qualitative. Quantitative descriptive data analysis technique means that the data is interpreted objectively using numeric or numbers and analyzed statistically. While descriptive qualitative means that the data is descriptive or in the form of words and cannot be analyzed statistically. Data obtained from direct observation in class by the researcher as an observer and the data from the questionnaire filled out by students are types of qualitative data. Meanwhile, the data obtained from the results of the evaluation test carried out at the end of each cycle is quantitative data presented in the form of numbers.

The Discovery Learning learning model applied in this study consists of 6 stages of learning, namely: (1) stimulation; (2) problem statement; (3) data collection; (4) data processing; (5) verification; and (6) generalization. The six learning stages are outlined in the lesson plan which is then used as a guideline for implementing learning activities in the classroom.

RESULT AND DISCUSSION

Before the research was conducted, the researcher first conducted an initial pre-cycle observation which aimed to identify and find problems, shortcomings, and obstacles in learning activities at SMP Muhammadiyah Sewon. This pre-cycle observation activity was carried out by paying attention to the teacher's teaching style, and student activities in learning, as well as analyzing student learning outcomes.

By initial findings in pre-cycle observation activities, it is known that students' activeness in participating in learning is still not visible. Students tend to appear passive and only listen to explanations from the teacher so that the teacher dominates in learning activities. The lack of student involvement in learning causes students' interest in learning to decrease and ultimately also affects student learning outcomes.

Based on this, research was carried out which will be carried out over 2 cycles. Research conducted during these 2 cycles obtained data that students' interest in participating in learning activities had increased, both from the results of observations

and questionnaires distributed to students. The results of observations and questionnaires regarding the application of the Discovery Learning learning model can be seen in the following table 1.

Table 1. Student Learning Interest and Evaluation Results
 Using the Discovery Learning Model in Cycle I and Cycle II

No.	Description	Cycle I	Cycle II
A	<i>Student Learning Interest</i>		
1	Observation	63.33 %	86.67 %
2	Questionnaire	73.33 %	83.33 %
	Average	68.33 %	84.99 %
B	<i>Student Evaluation Test Result</i>		
1	Highest Score	86.00	92.00
2	Average Score	67.28	75.14
3	Student Completed	36.67%	56.67%

Students' interest in learning using the Discovery Learning learning model was measured using data collection techniques in the form of observations carried out directly by researchers as observers during learning activities and through questionnaires filled out by students as respondents. Based on table 1, it can be seen that the difference in the percentage increase in measuring student interest in learning from cycle I to cycle II was 16.66% and the increase in learning outcomes was 20.00%.

Increased student learning outcomes are measured through a criterion called Minimum Completeness Criteria (KKM). KKM is the lowest score limit that must be achieved by students through achieving competency from several predetermined learning indicators. Sewon Muhammadiyah Middle School, as the place where this research was carried out, set the KKM for class VIII, namely 70. Based on the data that has been obtained, it is known that there has been an increase in the average class score from 67.28 in cycle I to 75.14 in cycle II. The percentage of students who completed the KKM from 30 students in class VIII A, which was originally 36.67% in cycle I, became 56.67% in cycle II.

The increase in interest and achievement of student learning outcomes in this research is in line with the results of previous research conducted by Eko Wahjudi (2015) entitled "Application of Discovery Learning in Science Learning as an Effort to Improve Learning Outcomes of Class IX-1 Students at SMP Negeri 1 Kalianget" as well as research by Ni Ketut Intan Bahari (2018) entitled "The Influence of the Discovery Learning Model Assisted by Environmental Media on Natural Environment Learning Outcomes". The results of these two studies show that the Discovery Learning learning model can increase student interest and learning outcomes, especially in science subjects.

The application of the Discovery Learning learning model in science learning, especially in the Human Respiratory System material, becomes more interesting, meaningful, and fun. Apart from that, students can play an active role in the learning process through group discussion activities and presentations of discussion results. By actively involving students in learning, students become more motivated and

enthusiastic in participating in learning activities. This will ultimately also affect student learning outcomes.

Improvements made by teachers include providing motivation and reinforcement to students to dare to express opinions, provide answers to questions asked, motivate students to actively participate in learning activities through praise and appreciation, and encourage students to pay close attention to what is conveyed by friends and teachers.

CONCLUSION

Based on the research that has been conducted, it can be concluded that the application of the Discovery Learning learning model in science learning in class VIIIA of Muhammadiyah Sewon Middle School can increase student interest and achievement of learning outcomes.

Some suggestions given by researchers are as follows: (1) for schools, it is hoped that they can provide training to teachers regarding learning models so that learning activities become more quality, meaningful, and enjoyable; (2) for teachers, they should increase attention regarding students' learning interest in participating in learning and apply innovative models, methods and approaches so that students can be actively involved in the learning process; (3) For future researchers, it is hoped that they will be able to carry out more in-depth studies and literature studies regarding the application of the Discovery Learning learning model and can develop it so that it is more optimal to increase student interest and achievement of learning outcomes.

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