



Application of Direct Learning Model to Improve Student Learning Outcomes on Digestive System Materials in Class XI Science 2 SMA Negeri 7 Southeast Maluku

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Abstract. This study aimed to describe students' learning outcomes using the Direct Instructions Learning Model on the digestive system material. This study is classroom action research. This study was conducted in class XI of SMA Negeri 7 Southeast Maluku. The subjects of this study were 22 students of class XI IPA. The study results showed that the percentage of classical learning completion in cycle I was 32% with an average score of 63.5% and cycle II was 82% with an average score of 80.22. With these research results, it can be concluded that applying the direct instructions learning model can improve student learning outcomes on the digestive system material in class XI of SMA Negeri 7 Maluku Tenggara.

Keywords: Learning Model, Direct Instruction, Learning Outcomes, Digestive System, Biology

1. INTRODUCTION

A teacher is a person who is always inspired and imitated. Therefore, becoming a teacher is not easy because a teacher is a profession or position requiring special skills and cannot be done by just anyone outside of education (Danil, 2017; Manizar, 2017). In Law No. 14 of 2003, it is explained that teachers and lecturers are professional educators with the main task of educating, teaching, guiding, directing, training, assessing and evaluating students in early childhood education through the formal path of primary education and secondary education (Darmadi, 2015; Maghfiroh & Eliza, 2021).

Learning or teaching and learning activities are activities that are directly related to students, which are inputs in the teaching and learning process and are expected to produce output in the form of students who have abilities that cover three domains, namely cognitive, affective, and psychomotor (Arifin, 2022; Novitasari, 2022). Direct Instruction is a model that uses teacher demonstrations and explanations combined with student exercises and feedback to help them gain the real knowledge and skills needed for further learning (Yanti, 2019; Sukardi, 2022). An outcome will be obtained from the teaching and learning process, generally called a teaching outcome, or in terms of learning objectives or outcomes (Malik & Putra, 2015; Imansyah, 2018).

Learning outcomes are the output of grades in the form of numbers or letters that students get after receiving learning materials through a test or exam delivered by the teacher. From these learning outcomes, teachers can receive information on how far students understand

the material being studied (Nasution, 2022). Learning outcomes are the abilities that children acquire after learning activities (Suwardi et al., 2016). The success of students in achieving learning outcomes in each student is different. Biology learning outcomes are shown by the achievements obtained by students (Suprijadi, 2015). These achievements are in the form of grades obtained when children follow the learning process in class (Abineno et al., 2019). Students carry out biology achievement, which produces change (Rijal & Bachtiar, 2015; Retnowati et al., 2016). These changes include aspects of science, changes in attitudes, values and skills (Ulfah & Arifudin, 2021; Hidayatulloh & Mardiyah, 2022).

Based on the results of observations made by researchers in class XI of SMA Negeri 7 Southeast Maluku, it can be known that the learning outcomes of Biology are still low. This can be seen from the completeness of the average student learning outcome of less than 75. Meanwhile, based on the minimum standards set at SMA Negeri 7 Southeast Maluku, it can be considered complete if the classical score is ≥ 75 . This is because the learning model used is not optimal, which results in students finding it difficult to understand the materials taught. The material taught uses more conventional learning methods such as lectures. At the same time, students only listen and take notes, in addition to the lack of student activity in learning, where students look awkward in giving opinions and there is no reciprocity between teachers and students during the learning process. Therefore, education and the learning model used greatly influence student learning outcomes. Then, the students of SMA Negeri 7 Southeast Maluku also seem to be unable to learn independently, so they need assistance or guidance from teachers so that students can receive the material taught well.

Digestive system material is one of the biology learning materials in class XI of SMA Negeri 7 Southeast Maluku. It needs to be developed through direct instruction to improve student learning outcomes.

2. METHOD

This research was conducted in class XI of SMA Negeri 7 Southeast Maluku to improve the biology learning process by applying a direct learning model (*Direct Instruction*). The research was conducted for 2 months, from July to August 2023.

The research method used by the researcher is classroom action research (PTK). In this study, the researcher used research according to Jhon Elliot. Elliot (2012) and Trianto (2012) said that classroom action research is action research as a method for teachers to act in the classroom as well as the designer.

The subject of this study is students of class XI Science of SMA Negeri 7 Southeast Maluku, which has a total of 22 students.

Variable Operational Definition:

1. Direct Learning Model

Direct learning model learning activities are learning activities that are designed in accordance with the characteristics of the direct learning model, namely systematic step-by-step learning whose indicators can be divided into stages: 1) Conveying goals and preparing students, 2) Demonstrating knowledge and skills, 3) Guiding training, 4) Checking understanding and providing feedback, 5) Providing opportunities for further training and application.

2. Biology learning outcomes

Biology learning outcomes are the result of an interaction of learning and teaching actions related to the achievement of teaching objectives. In this study, the learning outcomes of biology are the abilities/competencies that students master after learning with a direct learning model in the form of numbers or grades.

The research will be carried out in two cycles; each cycle is related to the other, and cycle II is an improvement from cycle I. The research procedure can be seen in Figure 1 as follows:

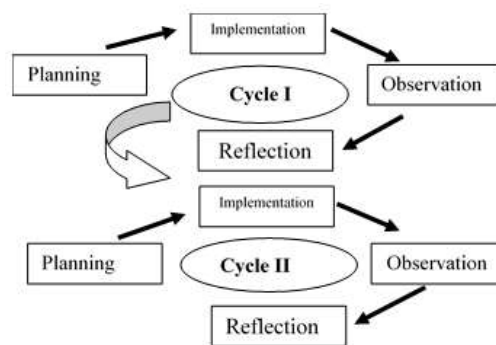


Figure 1. Research Procedure

In Figure 1, it can be explained as follows:

1. Cycle I

a. Planning Stage

In this planning stage, preparations are made to carry out the learning process. The activities that must be prepared at this stage are compiling learning tools in the form of a syllabus, lesson plans (lesson plans), LKS (Student Worksheets), test sheets, learning media, learning activity sheets for the direct learning model, and directions to observers about filling out learning activity sheets and learning sheets on the direct learning model.

b. Implementation Stage

The implementation stage is the implementation or application of the design's content. The learning stages will follow the learning step plan in the lesson plan that has been designed based on the indicators of the direct learning model.

c. Observation Stage

At this stage, observers carry out observation activities on the teaching and learning process by applying the direct learning model, both direct learning model learning activities and learning activities in the direct learning model during the learning process.

d. Reflection Stage

Reflection is the stage of assessing learning outcomes using a direct learning model, starting with planning, implementing actions, and evaluating. With this reflection, it will be known that what has not been achieved in this cycle will be corrected in cycle II.

2. Cycle II

a. Planning Stage

Based on the reflection of the actions in cycle I, preparations are made to carry out the learning process. RPP (Learning Implementation Plan), LKS (Student Worksheet), test sheets, and learning media are prepared in this planning.

b. Implementation Stage

The implementation stage is the implementation or application of the design's content. The learning stages will follow the learning step plan in the lesson plan that has been designed based on the indicators of the direct learning model.

c. Observation Stage

At this stage, observers carry out observation activities on the teaching and learning process by applying the direct learning model, both direct learning model learning activities and learning activities in the direct learning model during the learning process.

d. Reflection Stage

The collected data is then analyzed, and assessments are collected to measure the level of success of implementation in cycle II. This analysis is used to find the cause.

The instruments used to collect data in this study are observation sheets and test sheets.

e. Observation sheet of learning activities of the direct learning model

Observation data was used to obtain data on teacher activities/activities in the biology learning process of the direct learning model in class XI of SMA Negeri 7 Southeast Maluku.

f. Test Sheets

The test given to students in the study is intended to determine the extent to which students master the subject matter after applying the direct learning model (*Direct Instruction*).

The data analysis technique is carried out descriptively on the data of learning activities in the direct learning model, learning activities in the direct learning model and learning outcome data.

g. Test Data Analysis

a) Average grade of learning outcomes

The average score of learning outcomes is calculated using equations (Arikunto, 2006).

$$\text{Average learning outcomes} = \frac{\sum X}{N} \times 100\%$$

Information:

$\sum X$: Total student grades

N : Number of students

b) Learning Completeness

To calculate the completeness of learning, the following formula can be used, (Arikunto, 2006):

$$\text{Completeness} = \frac{n'}{n} \times 100\%$$

Information:

n' = Number of students who scored ≥ 75

n = Total number of students

Completeness of biology learning at SMA Negeri 7 Southeast Maluku using the following criteria: For individuals: If $\geq$ score 75 and For classical: If $\geq 75\%$ of students get ≥ 75 .

3. RESULT AND DISCUSSION

Results

Classroom action research (PTK) has been carried out using a direct learning model (direct instructions) to improve student learning outcomes in digestive system material in grade XI of SMA Negeri 7 Southeast Maluku. This research was conducted in 2 (two) cycles. Each cycle consists of 4 (four) meetings and 1 (one) meeting divided within 2 x 45 minutes. The stages in each cycle consist of planning, implementation, observation and reflection.

1. Analysis of the Completeness of Learning Outcomes Cycle I

a. Average Score of Learning Outcomes

Table 1. Classical Student Learning Outcomes in Cycle I

Score	Students	Percentage	Category
$XI \geq 75$	7	32%	Complete
$XI < 75$	15	68%	Incomplete
Total	22	100%	

In Table 1 above, the percentage of completeness of student learning outcomes in the first cycle test is 32%, and the test result data shows that the students who got a score of ≥ 75 amounted to 7 students. Meanwhile, 15 students received a score of < 75 with a percentage of 68% who have not completed the learning outcomes set at school.

b. Average Score of Learning Outcomes

Table 2. Average Score of Student Learning Outcomes

ΣX	N	Average
1.397	22	63.5

In Table 2 above, the average score of student learning outcomes in cycle I is 63.5. This shows that the average score of student learning outcomes in the classroom has not reached the 75% requirement set at school. So, it can be concluded that the average score of student learning outcomes in the classroom has not been completed. With these results, the researcher continued the action in cycle II.

2. Results of Cycle II Research

a. Analysis of the Completeness of Learning Outcomes Cycle I

Table 1. Classical Student Learning Outcomes in Cycle II

Score	Student	Percentage	Category
$XI \geq 75$	18	82%	Complete
$XI < 75$	4	18%	Incomplete
Total	22	100%	

In Table 3 above, the completeness of student learning outcomes in cycle II has increased, where there are 18 students, or 82% of classical students, who have achieved completeness. Meanwhile, students who have not completed are 4 students or classically 18%.

b. Average Score of Learning Outcomes

Table 4. Average Score of Student Learning Outcomes in Cycle II

ΣX	N	Average
1.765	22	80.22

Table 4. Above, the average score of student learning outcomes in the first cycle is 80.22. This shows that the average score of student learning outcomes in the classroom reaches the requirements set at school, which is 75%. So, it can be concluded that the average score of student learning outcomes in the classroom has been completed.

3. Completeness of Student Learning Outcomes in Cycles I and II



Figure 2. Student Learning Outcomes in Cycle I and Cycle II

From the diagram, it can be concluded that the learning outcomes of students in cycle I and cycle II show an increase or an increase in learning outcomes. Where the completeness of student learning outcomes in cycle I is 32% or less than 75 with incomplete criteria. Then experienced learning completeness in cycle II of 82% with the completion criteria. This shows that the application of direct instructions to digestive system material in grade XI of SMA Negeri 7 Southeast Maluku can improve student learning outcomes.

Discussion

This research was carried out on digestive system material in class XI of SMA Negeri 7 Southeast Maluku. The results obtained after implementing the direct learning model (direct instructions) increased from cycle I to cycle II.

In the first cycle stage, the completeness of learning outcomes has not reached the score set in school, which is 75%. Students only obtained a completeness score of 32%, with an average score of 63.5%. During the implementation of actions in cycle I, some things make student learning outcomes in the direct learning model (*direct instructions*) still low. The low student learning outcomes in the first cycle are certainly influenced by several factors, including the fact that during the learning process, students still look confused and cannot answer the test for the questions given. Besides that, students are not optimal in participating in learning activities, many do not pay attention when the teacher explains so that students have difficulty observing and analyzing. Mobile phones become the center of their activities during learning, and not a few students also sleep during learning. Then, students are still not used to learning conditions using the direct instruction learning model, students are less interested in learning and even noisy because they are not used to learning conditions, and most students are not active in following the learning process. In addition, students are not familiar with the direct learning model, so students are less active during learning.

Thus, the completeness of learning has not been achieved in the first cycle, and the second cycle action plan aims to improve student learning outcomes in the digestive system material.

In the second cycle stage, the completeness of classical learning outcomes has reached the expected value of 82% with an average score of 80.22%. The completeness score increases from stage I because students are used to and already understand the technicalities of the direct learning model (direct instructions), so they have begun to be active and creative during learning and are able to answer the questions/questions given.

In the learning process in cycle II, there are changes for each student. Students seem to have started to get serious in working on the evaluation questions and show a calm atmosphere. In addition, students have also been seen starting to respond to what is presented by the researcher. So that the researcher also feels that he has sufficiently familiarized himself with the students and begins to know each student's abilities by seeing how often students ask questions and give responses when the researcher is explaining the material.

Thus, the completeness of the classical learning outcomes from cycle II has been fulfilled, so they will not be continued to the next cycle. For students who have not completed the second cycle stage, tutoring is carried out separately during break hours so that they can achieve the expected completeness. Based on the learning results in cycle II, it shows an increase compared to cycle I.

4. CONCLUSIONS AND SUGGESTIONS

Based on the results of the research on actions that have been carried out in class XI of SMA Negeri 7 Southeast Maluku on Digestive System Material, it can be concluded that The application of the direct instruction model can provide an improvement in the learning outcomes of grade XI students of SMA Negeri 7 Southeast Maluku on Digestive System Material. The increase in student learning outcomes can be seen from the completeness of classical learning outcomes in each cycle, where the percentage of learning completion in the first cycle of 32% increased in the second cycle of 82%. Meanwhile, the average score in cycle I of 63.5% can increase in cycle II, which is 80.22%. Thus, applying the direct instruction model can improve student learning outcomes in the digestive system material in Class XI SMA IPA II Negeri 7 Southeast Maluku.

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