



## Application of the Example Non Example Cooperative Learning Model to the Biology Learning Outcomes of Class XI MIPA Students at SMA Negeri 26 Bone

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### ABSTRACT

Students have difficulty solving a problem if they are not given visual learning stimuli, causing their analytical skills to be minimal. This study aims to describe the application of the *Example Non Example* cooperative learning model to the biology learning outcomes of class XI MIPA students at SMA Negeri 26 Bone. This research is quantitative research with a *pre-experimental* type of research with a *one group pre-test and post-test design*. The processed data is data on the number of population and student samples, *pre-test and post-test* learning outcomes, documentation, using a sampling technique that is *purposive sampling* with a sample of class XI MIPA 1 totaling 30 students. The research results obtained a significance value for paired sample t test pre-test post-test data of 0.000. Because the significance value is  $<0.05$ , it can be concluded that between the *Pre-test and Post-test* data there is a significant effect on the difference in treatment of each variable. This, the use of the *example non example* cooperative learning model can influence student learning outcomes.

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## INTRODUCTION

Education is a basic need that every human being must have as a provision for life future. The increasingly developing era makes many changes that require humans to have a different mindset from what they had before (Ilhami & Syahrani, 2021). The purpose of education is everything that includes readiness, problem solving skills, constructive

use of free time, and developing abilities and forming a dignified national character and civilization (Sujana, 2019). In general, students tend to often feel bored with the lesson material. Therefore, an innovative strategy is needed to increase students' enthusiasm and eliminate their boredom with the lesson material. Students tend to like new things that they rarely or have never seen before. The feeling of boredom and saturation

that dominates them will be able to be distracted by something that they think is interesting to pay attention to (Ali, 2021). The methods used by teachers play an important role in increasing students' focus and interest in learning.

A learning model is a conceptual and operational learning design that has a name, characteristics, logical sequence, facility arrangement that is relevant to learning needs (Asyafah, 2019). The learning model leads to a particular learning approach including its objectives, syntax, and learning environment (Djalal, 2017). In other words, a learning model is a conceptual framework that describes systematic procedures for organizing learning experiences to achieve certain learning goals (Andriani & Rasto, 2019). The learning model functions as a guide for designers and teachers in implementing learning (Harefa, et al., 2020).

One learning model that can improve learning outcomes is the cooperative learning model (Abdullah, 2017). The cooperative learning model is a learning model that is widely used and recommended by education experts (Thamrin, et al., 2019). Cooperative learning can improve student learning achievement because it can improve social relationships, attitudes, and respect for other opinions, and can meet students' needs for critical thinking and problem solving (Putra, et al., 2017).

Based on pre-research results in March 2023, researchers conducted interviews with teachers at SMA Negeri 26 Bone. The results of the interview stated that during KBM there were still many students who were less enthusiastic, less active and tended to be passive. This causes student learning outcomes to not yet reach the KKM (Minimum Completeness Criteria). Overall, only 60% of students have reached the KKM while 40% of students have not yet reached the KKM. The KKM standard for biology subjects set at SMA Negeri 26 Bone is 70. As an effort to improve

learning outcomes and student activity, the cooperative learning model is implemented, one of which is the example non example type cooperative learning model. The example non example learning model is one of the Group Investigation approaches in cooperative learning which is designed to influence student interaction patterns and improve academic results. The example non example type is learning that uses images as media with the aim of encouraging students to learn to think critically in solving problems contained in the images (Sari, et al., 2019). Example non example cooperative learning provides space or opportunity for each student to meet each other face to face, provide information, work together in groups, utilize each member's strengths and fill each other's shortcomings (Alexander & Pono, 2019).

Based on observations made at SMA Negeri 26 Bone, student learning outcomes are still low even though educators have used several learning models, therefore researchers are trying to present a cooperative learning model to improve student learning outcomes by submitting research with the title "Application of Learning Models "Cooperative Example Non Example Type on Biology Learning Outcomes of Class XI MIPA Students at SMA Negeri 26 Bone".

## **METHOD**

### ***Types of research***

The type of research used is quantitative. This research is a quantitative type of research using the *Pre-Experimental Design method*.

### ***Research Location and Time***

This research was carried out at SMA Negeri 26 Bone, Cenrana District, Bone Regency in May of the 2022/2023 academic year, even semester.

**Research design**

The research design used in this research is One-Group Pretest and Posttest Design, this

design is also known as the before and after design. The research design can be seen in Table 1.

**Table 1.** One Group *Pre-Test and Post Test Design*

| Class      | Pre-Test       | Treatment | Post-Test      |
|------------|----------------|-----------|----------------|
| Experiment | O <sub>1</sub> | X         | O <sub>2</sub> |

Information:

O<sub>1</sub> : Tests or observations carried out before treatment is given

X : Treatment

O<sub>2</sub> : Tests or observations carried out after treatment given

**Data collection technique**

Data collection techniques for learning outcomes tests use objective tests, namely tests in the form of multiple choice questions. Test questions will be given to the experimental class before being given treatment (pre-test) and after being given treatment (post-test) while documentation is carried out by obtaining documented data.

**Research Population and Sample**

The population in this study was 89 students of class XI MIPA SMA Negeri 26 Bone. The research sample was obtained using a purposive sampling technique with a total sample of 30 people consisting of 20 women and 10 men.

**Data analysis technique**

The data analysis technique used is descriptive statistical analysis by looking at the table of learning outcome scoring criteria and inferential statistical analysis using normality tests, homogeneity tests and hypothesis tests.

**Research Instrument**

The instruments used in this research consisted of learning outcome test instruments and documentation.

**Table 2.** Scoring Criteria

| Score  | Category  |
|--------|-----------|
| 90-100 | Very high |
| 80-89  | Tall      |
| 65-79  | Currently |
| 55-64  | Low       |
| 0-54   | Very low  |

**RESULTS AND DISCUSSION****Descriptive Statistical Analysis**

Descriptive statistical analysis is used to view student Pre-Test and Post-Test learning outcomes data. Descriptive analysis of the research is presented in Table 3. Based on Table 3, it states that the average student pre-test score is 38.67, the median is 40 and the mode is 45. The standard deviation or

standard savings is 7.98 indicating that the standard savings are very small compared to the mean, so the mean value can be used as a representative of the entire data. The highest score obtained by students was 55 while the lowest score obtained by students was 25. The range between the highest score and the lowest score was 25. The frequency distribution and percentage of pre-test results can be seen in Table 4.

**Table 3.** *Pre-Test* Statistics on Student Learning Results

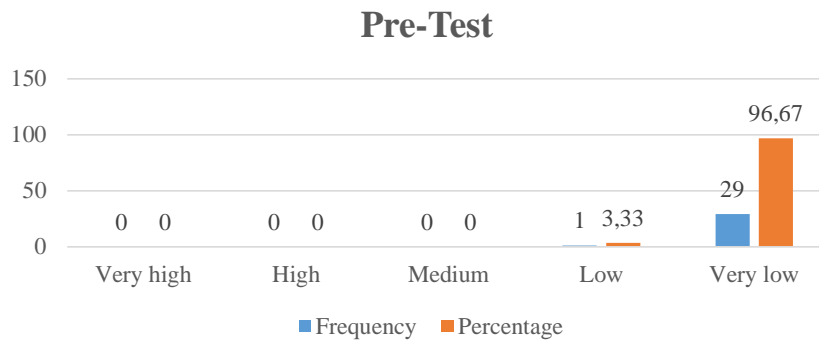
| Descriptive statistics  | Statistical value |
|-------------------------|-------------------|
| Number of samples       | 30                |
| Lowest value            | 25                |
| The highest score       | 55                |
| Average ( <i>mean</i> ) | 38.67             |
| Range ( <i>range</i> )  | 30                |
| Standard deviation      | 7.98              |
| Median                  | 40                |
| Mode                    | 45                |

**Table 4.** Frequency Distribution and Percentage of Student *Pre-Test*

| No | Score   | Percentage | Frequency | Category  |
|----|---------|------------|-----------|-----------|
| 1  | 90 -100 | 0%         | 0         | Very high |
| 2  | 80 -89  | 0%         | 0         | Tall      |
| 3  | 65-79   | 0 %        | 0         | Currently |
| 4  | 55 - 64 | 3.33 %     | 1         | Low       |
| 5  | 0- 54   | 96,67 %    | 29        | Very low  |

Based on the data in Table 4, it can be seen that there were 29 students who got a very low category or 96.67%, 1 person or 3.33% got a score in the low category and

there were no students who got a score in the medium, high or very high categories. . Data from Table 4 can be seen in Figure 1.



**Figure 1.** Frequency and Percentage Distribution Diagram of *Pre-Test* Results

**Table 5.** *Post-Test* Statistics on Student Learning Results

| Descriptive statistics  | Statistical value |
|-------------------------|-------------------|
| Number of samples       | 30                |
| Lowest value            | 70                |
| The highest score       | 95                |
| Average ( <i>mean</i> ) | 84                |
| Range ( <i>range</i> )  | 25                |
| Standard deviation      | 6.99              |
| Median                  | 85                |
| Mode                    | 80                |

Based on Table 5, it can be seen that the average *post-test score* is 84, while the average score is 85 and the score most often obtained by students is 80. The standard deviation (standard deviation) is 6.99, indicating that the standard savings are very small compared to

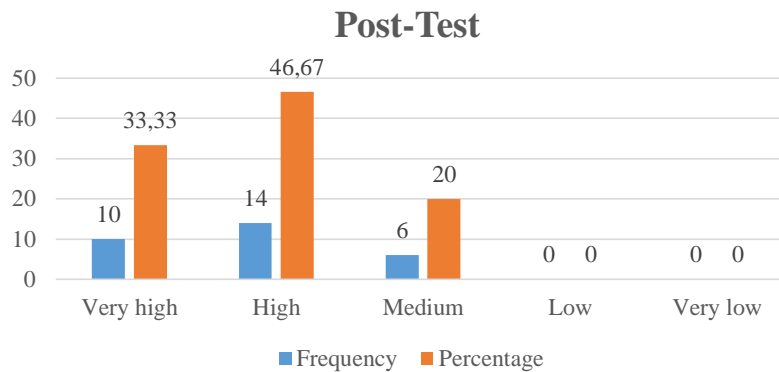
the mean. , so that the mean value can be used as a representative of the entire data. The frequency distribution and percentage of *post-test results* can be seen in Table 6.

**Table 6.** Frequency Distribution and Percentage of Student *Post-Test*

| No | Score   | Percentage | Frequency | Category  |
|----|---------|------------|-----------|-----------|
| 1  | 90 -100 | 33.33 %    | 10        | Very high |
| 2  | 80 -89  | 46.67 %    | 14        | Tall      |
| 3  | 65-79   | 20 %       | 6         | Currently |
| 4  | 55 - 64 | 0 %        | 0         | Low       |
| 5  | 0- 54   | 0 %        | 0         | Very low  |

Based on T able 6, it can be seen that the learning outcomes of class X I MIPA 1 SMA Negeri 2 6 students Bone, after carrying out *a post-test* from 30 students , it can be seen that there were no students who obtained category test scores very low and low category.

Meanwhile, the number of students who received the medium category was 6 people or 20 %. The high category is 14 people or 46.67 % and the very high category is 10 people 33.33 %. Data results T able 6 can be seen in Figure 2.



**Figure 2.** Frequency and Percentage Distribution Diagram of *Post Test Results*

**Inferential Statistical Analysis**

Example Non Example cooperative learning model on student learning outcomes.

**a. Normality test**

Based on the analysis of normality test results, it is known that the sigcount value for the pretest is 0.07 (sigcount > 0.05) and the sigcount value for the post test is 0.08 (sigcount > 0.05) so it can be concluded that the pre-test and post-test data normally distributed.

**b. Homogeneity Test**

Based on the analysis of the results of the pretest and posttest homogeneity tests, it is known that the sigcount value is 0.48 (sigcount > 0.05). Thus, the significance value is > 0.05, meaning the value comes from homogeneous data.

**c. Hypothesis testing**

Based on the output results, the significance value for paired sample t test pre-test post-test data was obtained at 0.000.

Because the significance value is  $<0.05$ , it can be concluded that between the pre-test and post-test data there is a significant influence on the differences in treatment for each variable.

The results of the research using the Example Non-Example type cooperative learning model were applied effectively to the biology subject material on the immune system for class XI MIPA SMA Negeri 26 Bone. This is in line with research conducted by Anisa (2011) that the application of the Example Non-Example type cooperative learning model can improve student learning outcomes. The research results stated that the average student pre-test score was 38.67. The learning results of class This is because there are still many students who lack interest in studying biology. Apart from that, students have difficulty understanding lessons so they are unable to solve the problems given if they are not accompanied by visual stimulation.

Cooperative learning model of the Example Non-Example type which is able to provide visual stimulation in the learning process. According to Sari, *et al.* (2019) the Example Non-Example cooperative learning model has six learning syntaxes. In the initial stage the teacher conveys the goals and motivates students before entering the learning stage. In the second stage, the teacher presents information in the form of example non example picture material. Next, organize students in the form of study discussion groups. In the fourth stage, the teacher guides students in group study and presents the results of the discussion and then evaluates the learning experience. At the final stage, the teacher will give awards to the group.

In accordance with research conducted at SMA Negeri 26 Bone, the results showed that the application of the example non example cooperative learning model had a positive influence on student learning outcomes. This can be proven by the post-test results obtained by students after being given treatment. It can be seen that the average post-test score is 84

and is in the high category with a gain percentage of 46.67%. This is in line with research by Thamrin, *et al.*, (2019) that the student's post-test results were 84.16 and were in the high category. Based on the pre-test and post-test results of student learning outcomes, it can be said that before the implementation of the Example Non Example type cooperative learning model, student learning outcomes were in the very low category, then after the Example Non Example type cooperative learning model was implemented, student learning outcomes increased. This can be seen from the average value of the post-test results which are included in the high category and the completeness of the students' learning outcomes achieved. This is in line with research by Nadira & Nurvita (2021) which states that the example non example cooperative learning model is a learning model that can improve student learning outcomes, depending on how to implement the learning model.

Students who are complete because in using the Example Non Example type cooperative learning model in the learning process they are more focused and active in learning using pictures. Thamrin, *et al.*, (2019) in their research stated that the Example Non Example learning model is an activity carried out in groups in analyzing examples in the form of pictures, photos and cases containing problems. Students will be directed to identify problems, look for alternative solutions to problems, and determine the most effective way to solve problems, as well as carry out follow-up actions.

Students who do not complete are because these students are not focused and are not active in the learning process (Nariana, 2020). Students also have not achieved the learning mastery that has been determined by the school, namely KKM 70, this is because students during the teaching and learning process do not follow the directions of researchers to conduct discussions which

causes students not to understand the material that has been discussed. As a result, students are not able to answer the questions that researchers have given according to the level of correct answers during the post-test.

Example non example learning model can maximize student learning outcomes because it has advantages. The advantages of the examples non examples cooperative learning model include students being more critical in analyzing images and knowing the application of the material in the form of image examples and not forgetting to provide opportunities to express their opinions (Novianti, 2021). Apart from the advantages and disadvantages, example non example learning has disadvantages because not all material can be presented in the form of pictures. Apart from that, based on research by Hamdani (2022) another advantage of the examples non examples model is that students have an understanding of a definition and this is then used to expand their understanding of the concept in a deeper and more complete way. Apart from that, this model encourages students to be involved in discovery and encourages them to build concepts progressively through experiences from existing images (Kurniawati & Trisnawati, 2020). With these advantages, it can be said that the example non example learning model fully involves students in the learning process. So that it can provide meaningful learning to students.

After testing using normality and homogeneity tests, the data obtained were normally distributed and had a homogeneous variance. The normality test results for the Pre-Test data were obtained at 0.07 ( $\text{sig}_{\text{count}} > 0.05$ ) and the value for the Post-Test was 0.08 ( $\text{sig}_{\text{count}} > 0.05$ ) so it can be concluded that the pre-test and post-test data were normally distributed. . The homogeneity test results obtained a sigcount value of 0.48 ( $\text{sig}_{\text{count}} > 0.05$ ). Thus the data comes from homogeneous data. Furthermore, the results of hypothesis testing using a paired

sample t test obtained a significance value of 0.000 so it can be concluded that between the pre-test and post-test data there is a significant influence on the differences in treatment for each variable.

## CONCLUSION

Based on the results of the research and discussions that have been carried out and previously described, it can be concluded that the application of the example non example cooperative learning model can improve the biology learning outcomes of class XI MIPA 1 students at SMA Negeri 26 Bone. From the results of data processing, the significance value for paired sample t test pre-test post-test data was obtained at 0.000. The significance value is  $< 0.05$  so it can be concluded that between the pre-test and post-test data there is a significant influence on the differences in treatment for each variable. Thus, the use of the example non example cooperative learning model can influence student learning outcomes.

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