The Implementation of Examples Non Examples Learning Model With Mind Mapping to Improve Biology Learning Outcomes of High School Students

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ABSTRACT
This research is a classroom action research that aims to improve student learning outcomes through the application of the Example non-Example Learning Model with the Mind Mapping Technique. The subjects in this study were students of class XIC in the even semester of SMAU BPPT Darus Sholah in the 2018/2019 academic year with a total of 20 students. This research was conducted in two cycles. The stages of one cycle include: planning, acting, observing, and reflecting. The stages in the next cycle are revised planning, action, observation, and reflection. This is so for the next cycle until the expected increase is achieved. The results of the study indicate that the student learning outcomes have improved both cognitive and affective aspects. In the cognitive aspect, the increase from pre-cycle to cycle 1 was 15%. Cycle 1 to cycle 2 has increased by 25%, and in pre-cycle to cycle 2 has increased by 40%. Meanwhile, the increase in the affective aspect from cycle 1 to cycle 2 was 5.14%. Based on the results found, that the application of the Example non Example learning model with the Mind Mapping technique can improve student learning outcomes in Class XIC SMAU BPPT Darus Sholah Jember.

Key Words:
Example non example, mind mapping, learning outcomes

INTRODUCTION
Education is an important and determining factor in the progress of Indonesia’s development, which is an effort to develop the quality of the human being in all its aspects. Education as a deliberate activity to achieve certain goals and involves various factors that are interrelated with one another to form a system that affects each other (Dimyati, 1999: 12). Quality education cannot be separated from the teaching and learning process as the main activity in schools. Teaching and learning is an interaction or reciprocal relationship between teachers and students in educational situations (Sudjana, 1992: 95).

Based on documentation data of learning outcomes and interviews that have been conducted at SMAU BPPT Darus Sholah Jember. The problem that occurs in class is the low learning outcomes in Biology subject matter. The completeness of the cognitive learning outcomes of pre-cycle students of class XIC at SMAU BPPT Darus Sholah Jember, namely...
the average value in class XIC is 72.9. The result of the class average shows that the XIC class has the lowest average score compared to the other classes, which is 72.9 out of 20 students. The average test score for class XIC students is low because student learning outcomes have not reached the Minimum Completion Criteria (KKM), which is 75. The number of students who completed the score reached the KKM was 8 people with a percentage of 40%, while for students who did not complete the number more than the number of students who completed, namely 12 students with a percentage of 60%. The low student learning outcomes are because students have not mastered the learning material optimally.

In addition to the low learning outcomes, there are also problems that occur at SMAU BPPT Darus Sholah Jember. When the learning process takes place in the classroom, namely: 1) the learning methods used by the teacher emphasize more on lectures and discussions, so that in this case learning is only centered on the teacher while students are still less active (in this case it results in the ability of students to absorb the learning material that is submitted by the teacher cannot be received well). 2) teachers convey more information and students as listeners only, 3) there is no feedback from students for the whole class, tend to be more passive.

One learning model that has the potential to improve student learning outcomes is the Examples non Examples Learning model with the Mind Mapping Technique. The examples non-examples learning model is a learning model that uses examples through cases or pictures that are relevant to Basic Competencies. Through this learning model students are expected to be able to select and adjust the existing examples through these images so that they are expected to improve student learning outcomes (Hamzah, 2012: 117).

The example method and not an example is a learning method that uses images as a medium to convey learning material. By using this method, students are encouraged to think critically and analyze the examples given (observations). Examples are not examples of methods included in cooperative learning. Therefore, it is the main consideration for implementing this method in this study. Another consideration in choosing this method is that it is suitable or suitable for collaboration with the discovery of learning models and scientific approaches. In the discovery of the learning model, students are required to be independent in learning through discovery. The findings cannot be separated from scientific activities, so they need a scientific approach. In addition, this discovery requires the media in Indonesia to convey information, such as pictures, so that it requires an example of a method not an example. This is in line with, contrast image is very important to support discovery learning (Faradiba, 2017).

Meanwhile, Mind mapping is a learning strategy that emphasizes individual activeness to generate ideas, record lessons, or plan new research. By instructing students to make a mind map, they will find it easy to clearly and creatively identify what has been learned and what is being planned. The mind mapping model is a creative way for individual students to generate ideas, record lessons, or plan new research. By instructing students to make mind maps, they will find it easy to clearly and creatively identify what they have learned and what they are planning (Silberman, 2009: 188).

According to Brett, Chloe, Jennifer, Britta and Chelsea (2012), mind mapping is a little different from concept mapping in that the mind mapping process starts with the topic in the center of the graph. The important concepts and phrases are then linked to a central topic in the branch which can continue to branch into other concepts and phrases. In addition, text can be accompanied by images, and colors can be used for emphasis or to facilitate organization.
Mind Maps allow students to create visual images to enhance their learning and can be used as metacognitive which allows them to make connections into material in meaningful ways.

The purpose of this study is to improve student cognitive learning outcomes through the application of the Examples Non Examples learning model with Mind Mapping technique in class XIC SMAU BPPT Darus Sholah and increase student affective learning outcomes through the application of learning models Examples Non Examples with Mind Mapping techniques in class XIC SMAU BPPT Darus Sholah.

As an activity that seeks to determine the level of student success in achieving the stated goals, evaluation of learning outcomes has objectives in the form of domains contained in the objectives. The domain of educational objectives based on student learning outcomes can generally be classified into three domains, namely: cognitive, affective, and psychomotor (Dimyati and Mudjiono, 2002: 201).

Cognitive learning outcomes are related to knowledge, recognition, intellectual skills and abilities (Gulo, 2002: 50). Cognitive aspects are divided into 6 parts according to the revision of Bloom's taxonomy, which are as follows: Remember, understand, apply, analyze, evaluate, and create.

Learning classification according to Bloom (in Sudjana, 2004: 30) reveals that there are several categories of affective domains as learning outcomes. The categories start from the basic or simple level to the complex level, namely: Receiving, Responding, Valuing, Organization, and Value Characteristics (value internalization).

Psychomotor learning outcomes appear in the form of individual skills and ability to act. There are six skill levels, namely: 1) Reflex movements (skills in unconscious movements), 2) Skills in basic movements, 3) Perceptual abilities, including visual differentiation, 4) cognitive, motoric, etc. 5) Ability in the physical field, for example strength, harmony, and accuracy. 6) Skill movements, ranging from simple skills to complex skills. 7) Ability related to non-decursive communication such as expressive and interpretive movements (Sudjana, 1992: 30-31).

METHODOLOGY

This research was conducted at SMAU BPPT Darus Sholah. This type of research is Classroom Action Research (PTK). The subjects of this study were students of class XIC even semester SMAU BPPT Darus Sholah Jember with a total of 20 male students. When this research was conducted in the even semester of the 2018/2019 academic year.

This classroom action research design uses Hopskin's action research media in a spiral form with action research stages in one cycle including: planning, action, observation, and reflection. The research begins with planning something that will be done, then taking action, while taking the action, observation is also carried out in order to collect data, then reflection. This research was conducted in two cycles, namely cycle I and cycle II.

The methods used to collect data in this study include: a) Observation methods: Observation is carried out. This research focuses more on observing all learning activities during the learning process carried out by the teacher (researcher). b) Interview: aims to find out a number of information about the conditions of the school and students, the learning process applied in schools, especially in class XIC, and to find out information about the learning process carried out by researchers while giving action, c) The test method used in this study to obtain student learning outcomes data. The test method in the form of a written test conducted by the researcher is a test at the end of the cycle. The tests used in the study were in the form of multiple descriptions and choices. d) The required documentation data is by collecting documents related to the title of this thesis which is carried out at SMAU BPPT.
Darus Sholah. The document can contain a list of names of XIC class students and photos of activities during learning.

Data analysis in this classroom action research used qualitative and quantitative analysis. The data analysis used in this research is descriptive qualitative and quantitative data analysis. Qualitative data analysis in this study was obtained from observations and interviews. Quantitative data analysis in this study is data analysis in the form of numbers obtained from test results and observation results. The data analysis process is as follows: Student cognitive learning outcomes and Student Affective Learning Outcomes.

The indicator of success in this study is if the researcher can improve the learning outcomes of class XIC students at SMAU BPPT Darus Sholah Jember by applying the Examples Non Examples learning model with the Mind Mapping technique. Learning outcomes measured in this study are cognitive aspects and affective aspects. The completeness of learning outcomes in this study is the learning outcomes of students using the learning completeness standards set by the school which are declared complete if they meet the KKM, namely 75

RESULT AND DISCUSSION

Based on the results of the research that has been done, it was obtained an increase in student cognitive learning outcomes from the pre-cycle, cycle 1 to cycle 2 which can be seen in Table 1.

Table 1 the percentage of pre-cycle student cognitive learning outcomes

<table>
<thead>
<tr>
<th>Σ Students Percentage completeness (%)</th>
<th>Σ Students Complete</th>
<th>Σ Students don’t complete</th>
<th>Average learning outcomes ±SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Complete</td>
<td>don’t complete</td>
<td></td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>8</td>
<td>12</td>
<td>72.9 ± 9.346</td>
</tr>
<tr>
<td>40%</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

It is explained that Table 1 shows that the average cognitive result of students in the pre-cycle is 72.9. Students who complete the pre-cycle learning process are 8 students. Meanwhile, there were 12 students who were still incomplete. The percentage of completeness of the learning outcomes of class XIC students in the pre-cycle is 40%. The percentage of the completeness of the cognitive learning outcomes is still below the classical completeness standard at SMAU BPPT Darus Sholah Jember, namely 75%. So that the completeness of student learning outcomes still needs to be improved.

Table 2 Percentage of student cognitive learning outcomes cycle 1

<table>
<thead>
<tr>
<th>Σ Students Percentage completeness (%)</th>
<th>Σ Students Complete</th>
<th>Σ Students don’t complete</th>
<th>Average learning outcomes ±SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>20</td>
<td>11</td>
<td>9</td>
<td>75.35 ± 14.250</td>
</tr>
<tr>
<td>55%</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Based on Table 2 it shows that student learning outcomes after being implemented using the Example non Example learning model with mind mapping techniques have increased compared to learning outcomes in the pre-cycle. The average result of students' cognitive scores in cycle 1 was 75.35. This value has reached the minimum completeness standard in SMAU BPPT Darus Sholah Jember, which is 75. Students who complete the learning cycle 1 are 11 students and 9 students who do not complete. Completeness of classical learning outcomes in cycle 1 was 55%. The implementation of learning in cycle 1 is said to be incomplete because the percentage of completeness has not met the classical completeness standard, which is 75%. The learning implementation for the next cycle must still be carried out, this is because in cycle 1 it is still incomplete.

**Table 3. Improved cognitive learning outcomes from pre cycle to cycle II**

<table>
<thead>
<tr>
<th>Percentage</th>
<th>Students</th>
<th>Average learning outcomes ±SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Complete</td>
<td>20</td>
<td>72.9 ± 9.346</td>
</tr>
<tr>
<td>Don’t Complete</td>
<td>12</td>
<td></td>
</tr>
</tbody>
</table>

Based on table 3 shows that student learning outcomes have increased from cycle I to cycle II. The completeness of student learning outcomes has increased from pre-cycle to cycle II.

**Table 4. Average Percentage of Learning Outcomes for the Affective Aspects of the Learning Model Examples non Examples with the Mind Mapping Cycle 1 technique**

<table>
<thead>
<tr>
<th>Percentage</th>
<th>Amount</th>
<th>Average value ±SD</th>
<th>Category</th>
<th>The number of students</th>
</tr>
</thead>
<tbody>
<tr>
<td>Meeting</td>
<td>20</td>
<td>78.43 ± 9.51</td>
<td>Very good</td>
<td>17</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Well</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Pretty good</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Not good</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Amount</td>
<td>20</td>
</tr>
<tr>
<td>Meeting</td>
<td>20</td>
<td>77.18 ± 9.80</td>
<td>Very good</td>
<td>18</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Well</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Pretty good</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Not good</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Amount</td>
<td>20</td>
</tr>
</tbody>
</table>

Final Average Cycle I 77.80 ± 9.62
Based on table 4 it can be seen that the learning outcomes of the affective domain in the first cycle of meeting 1 of 20 students obtained a mean value of 78.43 with students in the very good category, namely 85% (17 students), the good category, namely 15% (3 students), good enough category, namely 0% (0 students) while for the less good category it was 0% (0 students). In the first cycle of meeting 2, the mean value was 77.18 with students who were in the very good category, namely 90% (18 students), for the good category, namely 10% (2 students), for the good enough category, namely 0% (0 students) while for the poor category as much as 0% (0 students). The mean of learning outcomes in the affective domain of cycle 2 is 77.80.

<table>
<thead>
<tr>
<th>Activities (%)</th>
<th>Σ Students</th>
<th>Class Average ±SD</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cycle I</td>
<td>20</td>
<td>77.80 ± 9.62</td>
<td>77.8</td>
</tr>
<tr>
<td>Cycle II</td>
<td>20</td>
<td>82.94 ± 10.85</td>
<td>82.9</td>
</tr>
<tr>
<td>Enhancement</td>
<td>5.14</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Based on table 5, there is an increase in student learning outcomes in the affective aspect. In cycle 1, from 20 students the percentage of the affective aspects of the students was 77.8%, the class average was 77.80. In cycle 2, the percentage of students' affective aspects was 82.94. This means that there is an increase of about 82.9% from cycle 1 and the class average in cycle 2 is 82.94 so that there is an increase in the class average of 5.14.

This research is a classroom action research. This research is a classroom action research which aims to determine the improvement of student learning outcomes in class XIC SMAU BPPT Darus Sholah Jember through the application of the Example non Example learning model with mind mapping techniques. This classroom action research was conducted based on the findings of existing problems in the class through interviews, observation, and data collection. In the application of the example non example learning model with mind mapping techniques, in addition to improving student learning outcomes in the learning material being taught and student learning outcomes can be observed through cognitive learning outcomes and student affective learning outcomes, namely through tests (post-test).

**Improve student learning outcomes**

Application of the Example non Example learning model with mind mapping techniques the thing under study is the completeness of student learning outcomes. To determine the increase in student learning outcomes and completeness, researchers got it from the cognitive test results in the form of a written test (post-test) which was carried out at the end of each cycle, both pre-cycle, cycle I, and cycle II. Based on the analysis of learning outcomes in the pre-cycle, the average student learning outcomes were 72.9. This has not met the minimum completeness in SMAU BPPT Darus Sholah Jember, namely 75. The completeness of classical learning outcomes in pre-cycle was 40% with 8 students completing and 12 students not completing. The percentage of completeness is also still below the classical completeness standard, namely 75%.
Learning cycle I is applied the Example non example learning model with mind mapping techniques, this aims to improve learning in the previous cycle using conventional methods. In cycle I student learning outcomes have increased compared to previous learning (pre-cycle). This is evident in the average cycle I of 75.35 which is high when compared with the average results of the pre-cycle tests. In completeness learning outcomes also increased compared to pre-cycle learning, namely 55% with 11 students complete and 9 students not yet complete. These results indicate that the completeness of classical learning outcomes in the first cycle is said to be incomplete. This percentage is less than the classical completeness standard of 75%.

The increase in completeness of student learning outcomes in the first cycle can be caused by the establishment of the Example non Example learning strategy with mind mapping techniques. According to Suadnyana (2014: 3), one model of cooperative learning that involves the participation of all students is the example non-examples cooperative learning model. This model is a group learning model with the help of attractive pictures and is in accordance with the scope of the learning material. The use of appropriate and interesting pictures will reduce the dominance of the teacher in learning activities and indirectly students can construct their own knowledge. This model also involves student activeness and cooperation in learning that students carry out group discussions and convey the results of the discussion.

In addition to gaining understanding and mastery of material from working with groups, students can also remember the material that has been studied through notes with mind mapping techniques. According to DePorter and Hernacki (2001: 172), notes with mind mapping techniques can focus attention, because students do not need to think to capture every word that is spoken. On the other hand, students do not need to think to catch every word that is spoken. On the other hand, students can concentrate on their ideas. So that students can take notes more quickly and efficiently.

Mind mapping is a way of taking notes that accommodates how the brain works naturally. In contrast to conventional notes which are written in the form of a long list down. Mind mapping will invite the mind to imagine a subject as a connected unit (Edward, 2009: 63).

The implementation of the next cycle is cycle II. In cycle II, learning is carried out as in cycle I using the Example non Example learning model with mind mapping techniques. In cycle II, there is an increase in learning outcomes, an increase in learning outcomes from cycle I. It is proven that the average learning outcome in cycle II is 79.25, the percentage of learning outcomes is 80% with 16 students completing and 4 students not completing. The cognitive learning outcomes indicate that the classical learning outcomes using the Example non Example learning model with mind mapping techniques in class XIC SMAU BPPT Darus Sholah Jember have been said to be complete. This percentage has exceeded the classical completeness standard of 75%, so the cycle was stopped in cycle II. Thus it is evident that the increase in student learning outcomes is influenced by the application of the learning model Example non Example with mind mapping technique.

The increase in learning outcomes in cycle II is because students are used to implementing the Example non Example learning model with mind mapping techniques, so that students look more active in the learning process.

The results of the interview with the biology subject teacher after the cycle activity ended, admitted that they were interested in the learning strategy applied. Students are more interested in the material presented, because students can carry out an activity during the learning process. The teacher acts as a companion, facilitator, and motivator. In addition,
teachers are required to think creatively in order to get strategies that are in accordance with
the material being taught, so that teachers feel more challenged to find new ideas in teaching.

Student responses to the learning that have been applied are also very positive. Based on
the observations made, it was seen that the students were more active in working together and
daring to express their opinions. Students do not feel bored when the lesson takes place
because with the implementation of this learning strategy students are not only stuck sitting
on the bench listening to the teacher deliver the material, but students can interact with the
group.

Overall, the results of this study indicate that the application of the Example non
Example learning model with mind mapping techniques in biology learning can improve
student learning outcomes. This is evidenced by the increase in the percentage of student
learning outcomes that can meet classical mastery standards.

Based on the results of previous research conducted by Rodhiyah (2013), it is concluded
that the application of the Non Examplled Example model can improve the completeness of
student learning outcomes from cycle I to cycle II. Classical completeness of learning
outcomes up to 84%. Another study conducted by Sutarni (2011) concluded that the
application of mind mapping techniques can improve student learning outcomes from cycle I
to cycle II, completeness of classical learning outcomes up to 87.5%, so it is indeed proven
that the Example non Example learning model with the technique Mind mapping can
improve student learning outcomes.

CONCLUSION

Based on the results of the discussion that has been described, the following conclusions
can be drawn: There is an increase in student learning outcomes from pre-cycle, cycle I to
cycle II. During the learning process, learning went well, students who were initially
unfamiliar with the Example non Example learning model with mind mapping techniques in
cycle II had started to get used to it and seemed active in activities group discussions and
students are not ashamed to give their opinions or ask questions about material that is
difficult to understand.

In the application of the Example non Example learning model with mind mapping
techniques can improve student learning outcomes in the affective and cognitive aspects of
class XIC in the 2018-2019 school year on the material "Motion Systems" at SMAU BPPT
Darus Sholah Jember. The increase in cognitive learning outcomes can be seen from the pre-
cycle average of 72.9 (40%), which then in the first cycle there was an increase to 75.35
(55%), and the highest increase in learning outcomes occurred from pre-cycle to cycle II,
namely the average 79.25 (80%).

REFERENCES


Depdikbud.


