

CHAPTER I

INTRODUCTION

1.1. Background

Learning is a process of change in personality and human behavior in the form of habits, acquisition of cognitive or affective, and psychomotor based on training and experience in searching for information, solving problems, observe the environment to gather the knowledges through understanding, acquisition, retention, and disclosure back in the future. Learning is ongoing and should not be imposed but freely allowed to learn to make decisions and take responsibility for his decision (Suprihatiningrum, 2013).

Experts agree that the relationship between learning, memory and understanding very closely, so that each other can not stand alone. Memory is usually referred to as retention, but according to the Syah (2012) memory is the mental function that captures information from the stimulus, and a storage system, the storage system of information and knowledge that exist in the human brain. All sorts of learning activities necessarily involve memory and learning processes involving all sorts of aspects of memory. If we do not remember anything about the experience or our activity, then we can not learn anything.

Basically the human person and its activities are not only determined by the activities that occur at this time, but is also influenced by the activities of the past. Because of past activities can recall back, but there are things that can not be recalled or in other words, there are things that are forgotten by our memories.

Memory is a process of remembering a lesson before understand the subject matter. However can not be denied that there are still many teachers who do not give their attention about how students memorize easily and quickly. They only think that students have learned and understood. Many people believe that

understand is better than memorize, but if we think again, we can understand the subject matter should memorize the order of that subjects (Syah, 2012).

Biology subject is one of the science lessons which are dominated by Latin name, where we know about of writing and pronunciation is not easy to be remembered by students. One of subject matter biology that uses Latin name and requires memorization is human reproductive system topic at grade XI Science. This material review about male reproductive organs, male reproductive organs, spermatogenesis, oogenesis and etc. As we know for all of topic in Biology subject, students should have memorizing and understanding so that can make their learning outcome become good.

Learning outcome is as a change in a person's behavior can be observed and measured form of knowledge, affective and psychomotor. Such changes can be interpreted as the improvement and development of better previously not knowing to knowing. Learning outcome also can be used as indicator for teacher to know students mastering the lessons that have been taught. Of course, the good learning process will continue well if all students have retained well. Many factors can affect learning outcomes. There are factors that can be changed (such as teaching, the quality of the design, evaluation model, etc.), those factors must be taken for granted such as student background, school environment, etc (Arikunto, 2010).

Retention is a translation of the memory. Therefore in addition there is a use of retention some are using the term memory. In general, the experts view as the relationship between the memory of past experiences. Bring back the human process of each event on his past experience, requires the ability to recall the good. With the ability to remember in humans it suggests that man is capable of receiving, storing and renewing experiences that happened. Retention is important in learning process because it is part of memorizing that causes alteration permanently in learning outcomes. Students retention are able to be improves by involving students actively in learning process. The role of active students in

learning is able to be done in various ways from minimum to maximum (Higbee, 2003).

Good memory is a need for each student to learn optimally. This is because the results for students at school is measured based on student mastery of the subject matter, the process can not be separated from the activities given (the ability to use memory). So with a good memory, students will be able to learn easily and achieve optimal results. However, not every student has a good memory. In each class, for example, there must be a student who has a good memory and others have a poor memory.

The learning process in the classroom will run smoothly when all students have a good memory. But when most students have a poor memory is characterized by difficulty students in remembering the subject matter of course there will be problems because of the learning process becomes slow. The slow learning process will not affect the achievement of specified targets. Or if the target is reached, the power absorbed it is not reached. If this happens, it means that learning is not successful (Higbee, 2003).

From the interview with the biology teacher, researchers knew that some of the problems that arise in SMA Negeri 5 Medan that the students are difficult to understand and remember the lessons especially for Latin name. The writer can make the conclusion that the students are difficult to remember the names and the parts of human reproductive system topic because the teacher did not use the appropriate teaching techniques to help students remember the lessons easily and quickly. To help the problem there is Mnemonic memorize technique that can be used by teachers in teaching biology, especially in the mostly of Latin names.

Buzan and Keen (1991) in England invented that Mnemonic technique which is used at competition, is useful for keeping technique and recalling information. Mnemonic is taken from Greek, namely mnemonikos discuss means "remember". There are many techniques to do mnemonic memory could be stronger and last stronger recitation in the head. Mnemonic is technique to

remember information that is very difficult to remember again. There are three basic principles when using the mnemonic, namely : imagination, association and location. Based on these definitions it can be said that the mnemonic is a technique to make it easier to remember something that is done to make a statement or expression, or connecting words, ideas, and fantasies. In other words meaningful mnemonic memory techniques to utilize in certain ways. The advantages of using the mnemonic is to make remember easily. Of course, it will also facilitate learning. Barriers to learning will be lost. It will raise the motivation of students to study harder, therefore it can eventually achieve optimal learning outcomes.

According to Gagne (1975) there are eight phases of processing which is essential for learning and must be done sequentially : (1) attending phase, (2) expectancy phase, (3) acquisition phase, (4) retention phase, (5) retrieval phase, (6) generalization phase, (7) performance phase and (8) feedback phase. From the steps above, teachers can make learning innovations for interventions and learning processes can be run in accordance with the intended purpose. Therefore from the description above, researcher will observe a research and conduct the research with title “ **The Effect Of Applying Scientific Approach By Using Mnemonic Technique Towards Students’ Learning Outcome And Its Retention On Human Reproductive System Topic At Grade XI Science SMA N 5 Medan A.Y 2015/2016**”.

1.2. Problem Identification

Based on the background above, the problem identification of this study, namely :

1. Students are difficult to understand the biology subject in human reproductive system topic especially for menstruation process and fertilization.
2. Students are difficult to remember the Latin name easily and quickly.

1.3. Problem Scope

By regarding the extent identified problems therefore in this research, the problem scope is limited in :

1. The using of Mnemonic Techniques as the instructional learning resource in Human Reproductive System subtopic at grade XI Science SMA Negeri 5 Medan academic year 2015/2016.
2. The improving of students learning outcome and retention on Human Reproductive System subtopic at grade XI Science SMA Negeri 5 Medan academic year 2015/2016.

1.4. Research Questions

In this study, research question are as follows :

1. Is there any significant difference on students learning outcome between class taught by using *Mnemonic technique* and without *Mnemonic technique* on Human Reproductive System at SMA Negeri 5 Medan ?
2. Is there any significant difference on students retention between class taught by using *Mnemonic technique* and without *Mnemonic technique* on Human Reproductive System at SMA Negeri 5 Medan ?
3. Is the *Mnemonic Technique* better than *Conventional method* to increase students' learning outcome and its retention on Human Reproductive System at SMA Negeri 5 Medan ?

1.5. Research Objectives

The objectives of this study are :

1. To know the differences between students learning outcome taught by using *Mnemonic technique* and those without *Mnemonic technique* on Human Reproductive System at SMA Negeri 5 Medan.
2. To know the differences between students retention taught by using *Mnemonic technique* and without *Mnemonic technique* on Human Reproductive System at SMA Negeri 5 Medan.

3. To know the comparison between *Mnemonic Technique* and *Conventional Method*.

1.6. Research Benefits

The research benefits from the result of this study are :

1. For teachers, Mnemonic Technique is expected able to enhance the innovative learning instructional by Mnemonic Technique in the classroom.
2. For teachers, Mnemonic Technique is expected able to improve the students learning outcome on Human Reproductive System.
3. For school, can increase the learning quality especially in learning Human Reproductive System.

1.7. Defeniton Operational

1. Mnemonic technique is a technique to make it easier to remember something done to make a statement or expression, or connecting words, ideas, and fantasies. In other words meaningful mnemonic techniques to utilize memory by certain ways.
2. Learning outcome is result obtained by students after learning process on biology subject that can show by score the test and the type of this learning outcome is cognitive domain.
3. Retention is the ability to remember material (such as: concepts, theorems) have been studied. Such as memory, retention is crucial results obtained by students in the learning process.