

## CHAPTER I

### INTRODUCTION

#### 1.1. The Background of The Study

Education is one of important point in human life to survive in this world. Human Beings were given advantage by the Creator with a form of mind that no creature for others, to process the mind needed a pattern of education through in a learning process. In this globalization era, our government through the Department of Education evaluate out by following various types of International assess programs, such as Trends in International Mathematics and Science Study (TIMSS) and Programme for International Student Assessment (PISA).

PISA assesses the extent to which 15-year-old students have acquired key knowledge and skills that are essential for full participation in modern societies. The assessment, which focuses on reading, mathematics, science and problem-solving, does not just ascertain whether students can reproduce what they have learned. In 2012, Indonesia still have low performances in mathematics, reading and science, it had been shown from the score that we got below on OECD average, where in reading get score 396 from 496, mathematics 375 from 494 and in science 382 from 501 in average (Gurria, 2013). In other hand, in TIMSS Indonesia also have low rating in mathematic and science. In 1999 Indonesia was at 34 of 38, in 2003 Indonesia was at 35 of 46 and in 2007 Indonesia was at 35 of 49 countries (litbang.kemendikbud.go.id.2013).

One cause of the quality of education in Indonesia is still low is at the learning process. In the learning process, children are less encouraged to develop the ability to think. Science subjects are not able to develop a child's ability to think critically and systematically, because the thought of learning strategies are not used properly in any learning process in the classroom (Sanjaya, 2011). Kemp in Sanjaya (2011) explained that the learning strategy was a learning activity that must be do by the teacher and student so that learning objectives can be achieved effectively and efficiently. In line with the above opinion, Dick and Carey in Sanjaya (2011) also mentioned that the learning strategy is a set of learning

materials and procedures are used together to inflict on students' learning outcome.

Learning is a process of creating a relationship between something (knowledge) that has been understood and something (knowledge) new. In line with Anthony Robbins statement in Trianto (2011) learning dimension contains several elements, namely: (1) the creation of a relationship, (2) something understood, and (3) something new. So in the meaning of learning here, not from something completely unknown (zero), but an association of two existing knowledge with new knowledge.

In learning process, learners within the same absorption preference are unique from one another. For example, visual learners may vary greatly on which visual techniques are effective for them. And for multi-mode learners, the score for each preference will determine how the student will layer techniques for optimal learning, whereas it can be influenced in student learning outcome (Jarmon, 2011). Differences of student absorption as described above, learning process need a appropriate learning strategy and learning models is the answer.

Based on interviewed with Biology teacher in Senior High School 11 Medan, Mrs. Daryanti, obtained the data, the condition of student was low learning outcome of student at the learning materials in final exams in last semester. In other hand, the teacher never use mind map yet in learning process in the school and teacher generally implemented lecturing method for learning activity and using power point to support during learning activity.

In Biology learning, many students feel difficult in the study. It shown by interviewed with some student in Senior High School 11 Medan in observation that has been done in February, they said, Biology was an interested subject matter for them because Biology was one of the study that learn about life, but in other hands, some student feel uninterest because Biology has so many term that must remember, so many Greek that difficult to memorize.

Generally, student feel biology is too difficult because so many subject material and terms that should be memorized. Relating to the terms and biological

sciences, a lot of subject matter that was patterned structured and required memorization. So to understand biology comprehensively, easy to remember, effective and efficient in any condition, need an easiest strategy to take place the information into brain. Based on reason above, mind map is an effective learning strategy that must be implemented in biology learning process because mind map has some excesses, there were draw attention to the eyes and brain so it make easier to concentrate when learning process, each of information has clear relation between one and each other, funny and not bored because used right brain such as picture and colors that have an unique pattern and easy to remember. That reason so appropriate with student characteristic where sometimes feel bored, difficult to concentrate during learning process, difficult to remember the subject matter that be taught by the teacher because they were so lazy to make a note.

Mind map help student to learn information by forcing them to organize it and add images and color into it. These maps have been shown to lower extrinsic cognitive load because students' are creating a two-dimensional space to tie in ideas and concepts that related together. Mind map allow students to create a visual image to enhance their learning. Using mind map also helps teacher vary their teaching methods which may be more likely to reach diverse learners (Jones, 2012)

Saleh (2008) said, in the first time, mind map found by Tony Buzan. Seen from the character and the nature, mind map can be a right media to train the mindset, brain-storming, visualization, and problem solving. Mind map was used in education namely when learning process in class. Therefore the role of the teacher in the learning when using mind map media is as a mentor and advisor in learning. Teacher help student to asses of learning and progress that has been achieved by the student. This strategy use open approach between teacher and student which aims to cause feeling of harmony between teachers and students during learning process.

Salomon & Perkins statements in Jones (2012) said, mind mapping activities require students to actively engage in their learning, connecting their prior knowledge to new information. When creating a mind map, a student frequently interacts with a textbook, notes from class, an instructor, classmate, or study group. Viewed from a sociocultural perspective, the student's learning in all of these interaction would be mediated by a social agent: an individual, group, or a cultural tool such as a textbook or set of class notes.

Dhindsa and Kasim (2010) reported that the mean achievement scores for students who were taught science using a mind mapping technique in a learning environment were significantly higher than those who were taught using traditional teaching.

Mona and Khalick(2003) reported their research, compared to students who did not use mind mapping, participants in the experimental group achieved statistically significant gain on all target categories (conceptual understanding and practical reasoning) and levels (basic, proficient, and advanced) of achievement. Moreover, the observed gains were not only statistically significant, but practically significant as well. On average, students who used mind mappings scored about 15 percentage points higher than participants in the comparison group on the conceptual understanding and practical reasoning components of the post-instruction achievement test.

Based on these statement, the research "The Effect of Mind Map Strategy on Student Learning Outcome at Topic Sensory System in Class XISMA Negeri 11 Medan academic year 2013/2014 will be conducted".

## **1.2. The Identification of The Problem**

Based on the background above, that could be identify the problems, They are :

1. Learning process never use mind map
2. Student noted still ineffective
3. Low student outcome in Biology subject

### **1.3. The Scope of The Study**

The scope of this research is will be limited to the effect of mind map on student learning outcome looking of cognitive aspect at Biology learning topic sensory system in Class XI IPA SMA Negeri 11 Medan academic year 2013/2014 and ideally the control class implemented with another strategy.

### **1.4. The Formulation of The Problem**

The formulation of the problem in this study, is there an effect of mind map on student learning outcome at topic sensory system in Class XI IPA SMA Negeri 11 Medan academic year 2013/2014.

### **1.5. The Objective of The Study**

The objective of this research is to know the effect of mind map on student learning outcome at topic sensory system in Class XI IPA SMA Negeri 11 Medan academic year 2013/2014

### **1.6. The Significance of The Study :**

1. Help student to increase their skill in learning process effectively
2. Help student to get a good learning outcome by Mind map media at topic sensory system
3. Add the experience and knowledge of researcher as a future teacher about Mind map media