CHAPTER I
INTRODUCTION

1.1. Research Background

The learning process in schools is not easy to apply, teachers are often faced with a variety of problems including in determining techniques, methods and media that match the character of students. Teaching and learning activity is not always successful, there are often things that resulted in the failure or difficulty of learning experienced by students. Usually, learning difficulties occur due to the inability of students to associate new knowledge with old knowledge that leads to incomprehension or uncertainty about a material (Slameto, 2016).

There are many reasons behind the students inability to achieve their maximum performance at school. Some to mention, motivation, study habits, academic preparedness, external factors, attitudes, instruction, and relevancy issues (Cherif, *et al.*, 2016). Although it was suggested by several findings that students are aware that the reason why they fail courses most often resides within themselves and are under their own power and responsibility.

Student's learning difficulties commonly caused by two factors: external factors and internal factors. Learning methods, media and resources are known as factors which affect student's perfomance outside. Students may experience difficulties as they have problem about lack of interest, attention, motivation and learning habits (Wahyudi, 2012). Learning difficulties can be observed on several apparent, namely: (1) Demonstrate low learning achievement; (2) Learning outcomes achieved are not in balance with the efforts undertaken; (3) Learning tasks are not submitted on time; (4) Unreasonable failure attitudes in the classroom; (5) Showing unfriendly behaviour to others (Djamarah, 2011).

Learning difficulty in biology have been widely studied by researchers worldwide (Cimer, 2011; Tekkaya, 2001). Learning difficulties often faced by high school students in studying biology include difficulties in understanding the terminology, abstract concepts, and the language used (Latin and foreign). This is in accordance with Çimer's research (2012), he found that basically the material

itself is the main reason for students having difficulty learning biology. The nature of the material in Biology is about explaining and exploring demands sufficient time allocation to teach the lesson material (Anggani, 2016; Kusumawati, 2016) Although, other factor such as laboratory is responsible to the low achievement of the students of SMA Negeri in Medan (Wahida, *et al.*, 2017).

In some research results indicate that internal factors such as interest, student's motivation to study biology, and student's health as well as external factors such as availability of facilities, learning aids, the nature of the subject such as Biology, and family and community support are the factors that cause the learning difficulties in biology (Ritonga, 2016; Siregar, *et al*., 2017; Rahmadani *et al*., 2017).

Many concepts or topics in biology, including the structure and function of plant tissue, water transport in plants, protein synthesis, respiration and photosynthesis, gaseous exchange, energy, cells, mitosis and meiosis, organs, physiological processes, hormonal regulation, oxygen transport, genetics, Mendelian genetics, genetic engineering, and the central nervous system can be perceived as difficult to learn by secondary school students. One common way of learning them is through a process of memorization and is not the best way of improving student's performance in the lesson material (Chiepetta and Fillman, 1998; Osborne and Collins, 2001).

Research on learning difficulties in various biological materials has been conducted for several years. Based on the results of previous research conducted by Kusumawati (2016) on the students of SMA Negeri 3 Klaten Class XI academic year 2015/2016 on the material structure and function of plant tissue students have learning difficulties found in studying the structure and function of plant tissue in students is in the realm understand the structure of plant tissue, understand the function of plant tissue, and understand the relationship of structure and function of plant tissue. In addition, based on research conducted by Melati (2016) shows the percentage of students' learning difficulties in the cell material of 67.74%. This difficulty lies in concepts and terms in the matter of cells. Lubis (2017) found students' learning difficulties on the mushroom lesson

material 41.92%. Learning difficulties in the topic of structure and function of animal tissues (Anggani *et al*., 2016), found that the most dominant factors affect student learning difficulties internally is student's interest and motivation. On the other hand, the lesson material was the external factor affects students having difficulty in the topic. Rahmadani, *et al.* (2017) also found that talent, interest and motivation were playing an important role to enhance student's achievement in biotechnology materials. The completeness of laboratory tools, textbooks and teaching methods some of external factors influence student's performance in class.

In SMA Negeri 1 Lubuk Pakam the researcher found similar situation where students had low achievement in the lesson material of Structure and Function of Plant Tissue. Based on the document from the teacher it was clear that the students were having difficulties to accomplish the process. The number of students who have learning difficulty on the lesson material structure and function of plant tissue as much as 70 %. It is marked by student learning outcomes below KKM in bahasa is 75. In general, 28 out of 42 students could not pass the KKM criteria. Personal interview with the teacher also revealed similar information about other things such as student's low interest for the lesson material. The Structure and Function of the Plant Tissue is considered complicated to study since it comes with lots of foreign words (Latin and English) and it has divisions contributing to its complication. There are two types of plant tissues as meristematic and permanent tissues. The meristematic tissue cells have the ability of dividing and they are situated in the *root apex* and *stem apex*. However, after some time these tissues are turned into permanent tissues. We can further divide the permanent plant tissues to 2 types and those 2 types can be divided to 5 more tissues, Parenchyma, Collenchyma, and Schlerenchyma tissue. The complex permanent tissues can be divided into Xylem and Phloem tissue.

Insufficient time allocation for the lesson material was also an issue revealed from the interview. In fact, student's also mentioned similar argument about time allocated to study this at school and home. This may contibuted to the students' low interest to study. Teacher did not provide media to accompany her

teaching activity was also expected to contirbute to the learning difficulty students may face. And, also lecturing method is the dominant approach for teacher to teach the lesson material of Structure and Function of the Plant Tissue.

To date no study has been conducted to determine high school students' difficulties in leaming Structure and function of Plant tissue concepts. Therefore, this study was designed to answer which indicators of the lesson material of the Structure and function of Plant tissue were difficult for students to learn and what makes the the indicators were so difficult. The title of this research is **"An Analysis of Learning Difficulties in Structure and Function of Plant Tissue Lesson Material of Students XI IPA SMAN 1 Lubuk Pakam Academic Year 2017/2018".**

1.2. Problem Identification

Based on the research background above, there are several problems that can be identified:

1. Insufficient time allocation for the lesson material of Structure and Function of the Plant Tissue.
2. Most of student's score (70%) is under the KKM (75) stated by the school.
3. Students have low interest on the lesson material of Structure and Function of the Plant Tissue.
4. There is no learning media accompany the teaching strategy on the lesson material of Structure and Function of the Plant Tissue.
5. Lecturing method is the dominant approach for teacher to teach the lesson material of Structure and Function of the Plant Tissue.

1.3. Problem Scope

To avoid misleading, the research is limited to:

1. Analysing the student's learning difficulties based on *Bloom* Cognitive aspects the lesson material of Structure and Function of Plant Tissue at grade XI IPA SMA Negeri 1 Lubuk Pakam.

2. Analysing the student's learning difficulties based on the learning indicator the lesson material of Structure and Function of Plant Tissue at grade XI IPA SMA Negeri 1 Lubuk Pakam.
3. Factors which contribute to the student's learning difficulties studying the lesson material of Structure and Function of Plant Tissue at grade XI IPA SMA Negeri 1 Lubuk Pakam.

1.4. Research Questions

The research questions are formulated as follow:

1. How are the students' learning difficulty level based on the cognitive aspect of Structure and Function of Plant Tissue topic at XI IPA SMA Negeri 1 Lubuk Pakam Academic Year 2017/2018?
2. Which learning indicator does students have learning difficulty in the lesson material of Structure and Function of Plant Tissue at XI IPA SMA Negeri 1 Lubuk Pakam Academic Year 2017/2018?
3. What are the dominant factors affecting student's learning difficulty to study the lesson material of Structure and Function of Plant Tissue at XI IPA SMA Negeri 1 Lubuk Pakam Academic Year 2017/2018?

1.5. Research Objectives

The research is aimed to:

1. Determine the learning difficulty of students based on the cognitive aspect of Structure and Function of Plant Tissue topic at XI IPA SMA Negeri 1 Lubuk Pakam Academic Year 2017/2018.
2. Determine the number of student understood the Structure and Function of Plant Tissue lesson material based on learning indicator at grade XI SMA Negeri 1 Lubuk Pakam Academic Year 2017/2018.
3. Explore the dominant factors affecting student's learning difficulty in the lesson material of Structure and Function of Plant Tissue at grade XI SMA Negeri 1 Lubuk Pakam Academic Year 2017/2018.

1.6. Research Benefits

The research will benefit several parties:

1. For teachers, as inputs to know the types of biological learning difficulties, so it can provide handling according to the type of learning difficulties.
2. For students, as input materials for students in learning, especially in studying the subject matter of structure and function of plant tissue so that later can improve learning achievement.
3. For researchers, can add insight and as a tool to motivate themselves in achieving mastery about the subject matter of structure and function of plant tissue to the maximum by knowing the analysis of student learning difficulties.

1.7. Operational definitions

1. Learning difficulties are the obstacles that students experience in absorbing material and and students can not learn properly as a result of learning is obtained low. So in this case carried out any analysis that causes student learning outcomes to be low.
2. Cognitive abilities based on revised bloom taxonomy include the ability to memorize, understand, apply, analyze, evaluate, and create. Cognitive abilities are fundamental to be mastered by students, especially for a pre-service biology teacher. Students' cognitive abilities become an important factor in determining the success of students in their studies. Cognitive abilities possessed by students become the basis for the formation of other capabilities that must be owned by students.
3. Structure and Function of Plant Tissue is a subject matter for the biology subjects that students studied in the class XI at high school level in the odd semester. Plant tissue is a group of plant cells that have the same structure and function and are bound by intercellular materials that form a unity. So that, done analyse in Structure and Function of Plant Tissue Topic to find out the most dominant indicators are difficult for students to understand.