CHAPTER I

INTRODUCTION

1.1. Background

Education is one of the factors that support national development. As a means used to support the goals of national education, national development must develop in a better direction. To realize this, the government has made various efforts so that every Indonesian citizen has the right to education. In achieving the implementation of these efforts, education requires components such as students, teachers, infrastructure, curriculum, funds and a mutually supportive environment so that education can be realized that can improve a person's quality and potential. One of the facilities that support education is a laboratory.

Education is the process of changing the attitudes and behavior of a person or group of people in an effort to mature humans through teaching and training efforts, processes, methods, and acts of educating (Language Center of the Ministry of National Education, 2002). According to Law no. 20 of 2003. Education is one of the factors that support national development. As a means used to support the goals of national education, national development must develop in a better direction. To realize this, the government has made various efforts so that every Indonesian citizen has the right to education. In achieving the implementation of these efforts, education requires elements such as students, teachers, facilities and infrastructure, curriculum, funds and a mutually supportive environment so that education can be realized that can improve one's quality and potential. One of the important facilities to support quality education is a laboratory.

The curriculum is one of the determinants of the success of education. The 2013 curriculum expects a change in the teaching and learning process so that it can achieve the goal of being better, stating that the implementation of the 2013 curriculum is also believed to result in more meaningful learning for students.

Aspects that are developed are not only on knowledge and values, but also on also skills. The skills in question are in the form of science process skills (KPS). In the process of learning biology, there are many ways to develop science process skills, one of which is to carry out activities in the laboratory (Puspita, 2017).

The purpose of the practicum is to develop problem-solving skills and creative thinking, improve understanding of science and scientific methods, develop experimental skills, scientific investigations, analyze data, communicate results, practice collaboration skills, foster positive attitudes and interests, and increase environmental awareness. . Furthermore, Sobiroh (2006) also stated that practicum is one of the laboratory activities that plays a very important role in supporting the success of the science teaching and learning process. With the practicum, students will be able to study science through direct observation of the symptoms and processes of science, can train scientific thinking skills, instill and develop scientific attitudes, find and solve new problems in the scientific method.

Government Regulation Number 32 of 2013 and PP Number 19 of 2005 concerning National Education Standards article 42 paragraph 2, it is explained that every education unit must have infrastructure that can support an orderly and sustainable learning process, one of which is a laboratory room. Likewise, the National Education Standards Agency (BSNP, 2006), stated that schools must have laboratory infrastructure in addition to furniture and other educational equipment. According to Daryanto (2018), the laboratory is a place for the teaching and learning process through practicum methods that can produce safe learning experiences. Where students interact with various tools and materials to observe the symptoms that are observed directly. The school laboratory is a place where students learn and conduct research experiments and so on related to science. Thus, practicum activities are an integral part of teaching and learning activities.

Laboratories in the learning process are used to achieve various goals. Cognitive goals relate to learning scientific concepts, skills development processes, and increasing understanding of the scientific method. Practical goals

relate to the development of skills in science training, data analysis, communication and collaboration skills between groups. Affective goals relate to motivation to science, responses and the ability to understand the surrounding environment. Therefore, laboratories must comply with existing minimum standards (Mastika, 2014).

Based on Permendiknas 24/2007, the minimum science laboratory room can accommodate one group (one class) with ± 20 students. Science laboratories have at least a practice room, storage and preparation room. Facilities that should be available at least have adequate light in the room for reading and observing the experimental object, and there is clean water. The facilities regulated in Permendiknas 24/2007 are furniture, educational equipment, educational media, and other equipment such as electrical installations, first aid kits, fire extinguishers, trash cans, and clocks on the wall (Rahman, 2017).

Biology learning cannot be separated from practical activities, due to the many abstract concepts in biology that must be understood. In biology learning, there are many students who find it difficult to understand concepts that can not only be imagined but must be understood. The learning process is not only the provision of material carried out by the teacher using the lecture method, especially in biology learning which consists of many concepts, it should not be done by reading and memorizing but by understanding concepts through experiments in the laboratory (Rosdiana, 2016).

Simatupang (2018) states that the purpose of the practicum is to develop problem-solving skills and creative thinking, increase understanding of science and scientific methods, develop experimental skills and so on. Biology learning is more often carried out in the classroom than in the laboratory or outside the classroom.

Hasruddin (2012) in his research on the analysis of the implementation of biology practicum and its problems stated that in several high schools in Medan City, it showed that most schools did not implement practicum or demonstration in learning due to incomplete laboratory facilities for practicum. It is also often found that teachers only carry out teaching activities using the lecture method and

rarely do practicum in the laboratory so that students' abilities do not develop and learning objectives are less than optimal.

Handayani (2018) states that the average practicum implementation has not been well planned. This can happen because there is no planning for laboratory activities and the obstacles faced by teachers due to limited time or limited material tools available in the laboratory. With good planning will make the practicum better and carried out when compared to without planning.

Biology is concerned with how to find out and understand nature systematically, so that biology is not only the mastery of a collection of knowledge in the form of facts, concepts, principles but also a process of discovery (Depdiknas, 2001). Biology education can be a vehicle for students to learn about themselves and the natural surroundings, so that students will better understand the subject matter and their learning outcomes can increase.

Based on information from Ms. Devita, a science teacher at SMPN 2 Sei Suka Batubara, that the science laboratory is still integrated with other practicums, then she said that there is no practicum schedule before the semester starts, and the practicum schedule often clashes with other practicums. Furthermore, he said the material that was practiced was the test of food ingredients. Foods containing protein, carbohydrates, fats, vitamins, minerals, and water are the most important elements needed by the body for growth and health. Carbohydrates are compounds consisting of C (carbon), H (hydrogen), and oxygen which are commonly known as sugar compounds. There are three groups of Carbohydrates, namely: Monosaccharides; is a carbohydrate consisting of one sugar unit with the chemical formula $C_6H_{12}O_6$.

Based on the explanation above, the researcher tried to conduct an axperimental research entitled ***"Analysis of the Implementation of Food Test Biology Practicum at SMP Negeri 2 Sei Suka Batubara."***

1.2 Identification of the Problem

Some of the problems identified in this study are as follows :

1. The biology laboratory is still integrated with the physics and chemistry laboratory.
2. The limitations of the tools and materials used in the implementation of the practicum.
3. There is no practicum schedule before the semester starts.
4. The implementation of biology practicum has not been carried out optimally in accordance with the syllabus.
5. Lack of time in carrying out the practicum.

1.3 Limitation of the Problem

Given the breadth of problem identification, time constraints and the ability of researchers, the problems in this study are limited to: (1) Standardization of laboratories, (2) Implementation of practicum activities in odd semester biology learning, namely on the subject matter; the structure and function of cells, the structure and function of plant tissues, the human digestive system, the human movement system, and the circulatory system. (3) How is the implementation of biology practicum activities carried out by class VIII students of SMPN 2 Sei Suka Batubara.

1.4 Formulation of the Problem

Based on the identification and limitation of the problem above, the researcher formulates the problem in this study, namely as follows:

1. How is the suitability of the biological laboratory facilities and infrastructure with the with the standard of the minister of national education no. 24 of 2007 at SMPN 2 Sei Suka Batubara ?
2. How is the implementation of the food test practicum activities carried out by students class VIII science at SMPN 2 Sei Suka Batubara ?
3. What are the obstacles faced by teachers in the implementation of practicum class VIII science students at SMPN 2 Sei Suka Batubara ?

1.5 Objective of the Research

The objectives of this research are as follows:

1. To determine the suitability of the biological laboratory facilities and infrastructure with permendiknas standard No. 24 of 2007 at SMPN 2 Sei Suka Batubara.
2. To find out the implementation of practical activities carried out by students of class VIII science at SMPN 2 Sei Suka Batubara.
3. To find out the obstacles faced by teachers in implementing food test practicum in class VIII science at SMPN 2 Sei Suka Batubara.

1.6 Significance of the Research

This research was expected to provide significant contribution to:

1. For School.

   As an illustration of the laboratory conditions and can be used as input for the school to the medan city education office to be able to fix the laboratory conditions at SMPN 2 Sei Suka Batubara.
2. For Teacher.

   As information and input for teachers regarding the importance of laboratories and practicums in achieving learning objectives so that learning biology is not limited to classrooms.
3. For Biology Education Students.

   As input material to increase knowledge, insight, experience, and important material as a provision for prospective biology teachers.

1.7 Operational definition

1. Analysis is an activity of parsing and studying something that is used to obtain the right understanding and understanding.
2. Laboratory is a place where experiments and investigations are carried out. A laboratory in a narrow sense is often defined as a space or place in the form of a building bounded by walls and a roof in which there are a number of tools and practicum materials. The laboratory in biology learning is in the form of an open space or open nature, such as a botanical garden (Rustaman et al. 2003). In this study, biology learning only uses a laboratory in the form of a closed room.

3. Laboratory standardization is the adjustment of laboratory specifications with the guidelines (standards) set by the government based on Permendiknas No. 24 of 2007.
4. The implementation of the practicum is the implementation of learning carried out in the laboratory or outside the classroom to get direct learning experience by applying the theories that have been learned.