

CHAPTER I

INTRODUCTION

1.1 Background

Biology is a branch of Natural Science studied in Junior High School with the aim of improving intelligence in logical thinking, knowledge, skills, and also a requirement for further education. One of the materials in Grade IX of science class is heredity that studies of inheritance from parent to offspring. The study of the inheritance is called Genetics. Genetics is a branch of biological science that refers to the study of genes (Brown in Corebima, 2008).

Inheritance is a topic that is often included in the National Exam. Based on the results of the National Examination exercise Stage 1 MKKS Kabupaten, average value for the inheritance material of IXE grade still low, namely 59. This value is still below the minimum criteria namely 72. The students argue that this material is difficult because confusing and requires logical abstract.

Learning difficulty is a condition where students cannot learn naturally, caused by threats, obstacles or disruption in learning (Djamarah, 2011). Students' learning difficulties are influenced by two factors, namely internal factors and external factors (Abdurrahman, 2009). According Slameto (2010), internal factors are grouped into three factors, namely: physical, psychological and fatigue factors. While external factors are grouped into family, school and society factors.

Inheritance is very important topic to be learned so that the mastery of this material by students is expected. But the fact that this material is difficult to learn by students. This is supported by a study of genetic concept understanding conducted by Topçu and Şahin-Pekmez (2009) to secondary high school students, showing only 14% of students who can explain well the cell function, while the chromosome is only 5% and 35% of gene. Meanwhile, the explanation of DNA as much as 57%. Tekkaya et al. (2001) also found that hormones, genes and chromosomes, mitosis and meiosis, the nervous system, and mendelian genetics were considered difficult concepts by secondary school students. While Sudirman (2014) found that 51% of students who have difficulty in solving monohybrid's problem and 54% of dihybrid's problem.

Student difficulties in learning inheritance should not be regarded as a natural and normal that there was no attempt to fix it for the understanding of learning disability is an asset that can be used as a basis in order to adapt the learning program groups of students in general can also provide information that is useful to adjust the learning program based on individualistic students, and find the cause of the student difficulties. So ultimately it helps teachers improving the efficiency of teaching in the classroom (Silverius, 2004) and learning goal can be achieved.

Learning difficulty of inheritance was also felt by students in Medan studied by Azizah (2012) that describe the genetic material responsible for the inheritance (genes, chromosomes) and the 2nd indicator that distinguishes the notion of dominant, recessive and intermediates traits falling into the moderate difficulty category, in the 3rd indicator that determines the gamete of the fetus/parent genotype is in the high difficulty category, and the 4th indicator that determines the ratio of monohybrid and dihybrid crosses results through the chart is in very high difficulty category.

Duncan and Reiser (2007) ask the question why the phenomenon of genetic learning is so difficult for learners? Two answers were developed for this question in the literature. The first is that students have difficulty in the impossibility and inaccessibility of the genetic concept, the second is that genetics includes complex structures. Genetics involves several levels of biological organization-genes, proteins, cells, tissues, organs, and so on.

Based on the consideration above, it is important conducted research on the analysis of the biology learning difficulties of Grade IX students on the inheritance topic. Thus it can be known to what factors causing learning difficulties, which level of the questions and learning indicators whether the students have difficulties in learning inheritance. So that can be taken concrete steps to perform the appropriate learning innovation problems that students were facing.

So far, the effort to identify students' learning difficulties in Inheritance subject matter in grade IX at SMP Negeri 8 Binjai has not been done yet, so the percentage of students' learning difficulties has not been accurately detected. To

detect students' difficulty in learning the Inheritance topic, it is important to conduct a research "**Analysis of Students' Learning Difficulties on Inheritance Topic in Grade IX at SMP Negeri 8 Binjai Academic Year 2017/2018**".

1.2 Problem Identification

Based on the background explanation above, researcher identify problems as follows:

1. Average value of the National Examination exercise Stage 1 MKKS Kabupaten for the inheritance topic of IXE grade still low, namely 59.
2. Inheritance topic is difficult to be learned because it is confusing and requires logical abstract.
3. Genes, chromosome, DNA, monohybrid and dihybrid crossing are the sub topic that students find it difficult to learn.
4. Impossibility, inaccessibility and complex structures of the genetic concept makes genetic is difficult for learners.
5. Lack of effort in identifying and solving students' learning difficulties on inheritance topic in grade IX at SMP Negeri 8 Binjai.

1.3 Problem Scope

In order for this research to be more focused, this research will address the following limited issues:

1. Students difficulties in learning inheritance based on the cognitive aspects according Revised Bloom's Taxonomy in grade IX at SMP Negeri 8 Binjai academic year 2017/2018.
2. Students difficulties in learning inheritance based on the learning indicator aspects in grade IX at SMP Negeri 8 Binjai academic year 2017/2018.
3. Factors that influence students difficulties in learning inheritance in grade IX at SMP Negeri 8 Binjai academic year 2017/2018.

1.4 Problem Formulation

As for the problem formulation in this research are as follows:

1. How are the students difficulties in learning inheritance based on cognitive aspects according Revised Bloom's Taxonomy in grade IX at SMP Negeri 8 Binjai academic year 2017/2018?
2. How are the students difficulties in learning inheritance based on learning indicator aspects in grade IX at SMP Negeri 8 Binjai academic year 2017/2018?
3. What are the factors that influence students difficulties in learning inheritance in grade IX at SMP Negeri 8 Binjai academic year 2017/2018?

1.5 Research Objective

The purpose of the research carried out to know:

1. The students difficulties in learning inheritance based on the cognitive aspects according Revised Bloom's Taxonomy in grade IX at SMP Negeri 8 Binjai academic year 2017/2018.
2. The students difficulties in learning inheritance based on the learning indicator aspects in grade IX at SMP Negeri 8 Binjai academic year 2017/2018.
3. The factors that influence students difficulties in learning inheritance in grade IX at SMP Negeri 8 Binjai academic year 2017/2018.

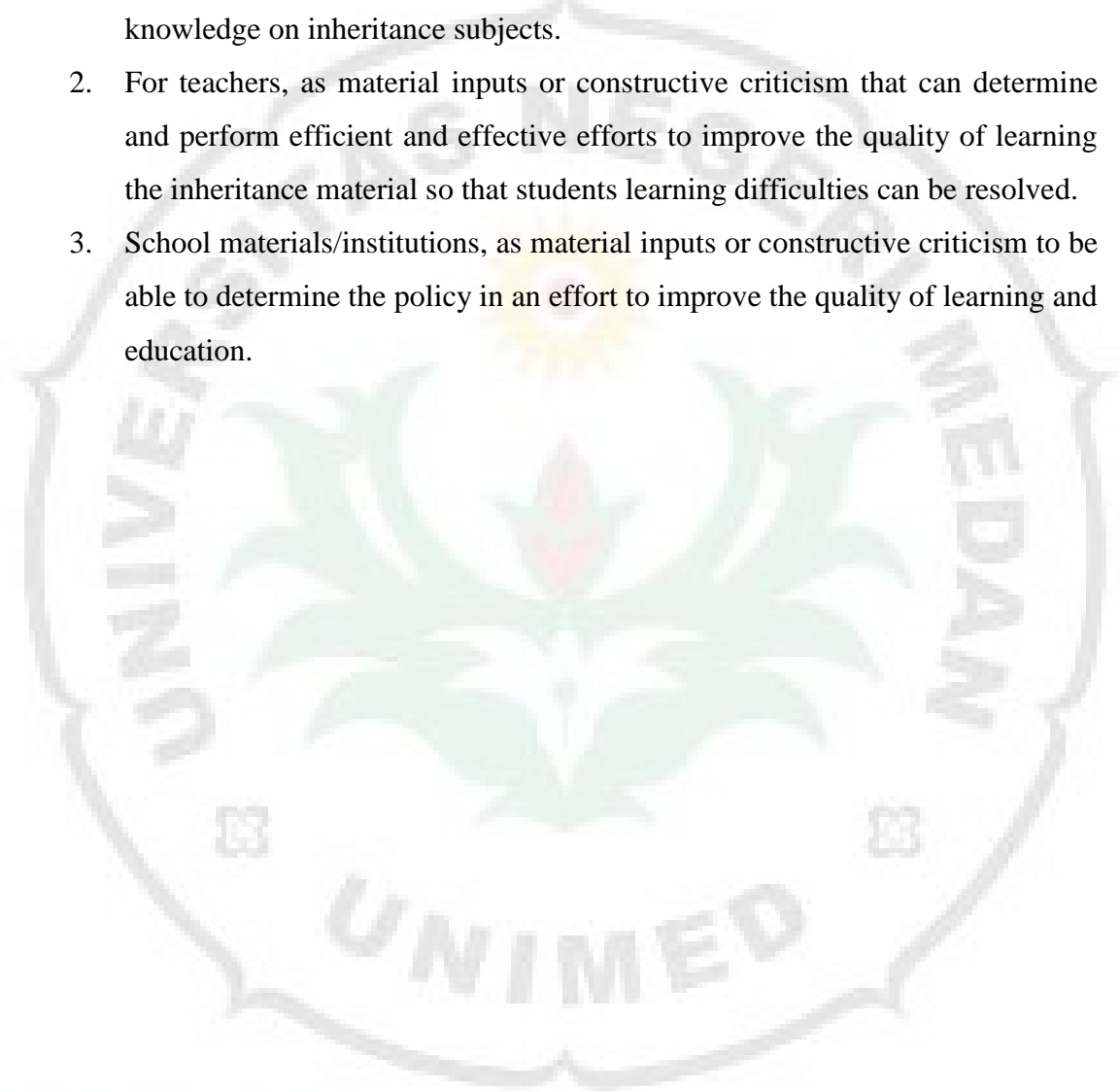
1.6 Research Contribution

The contribution of theoretically expected by the researchers from the implementation of this research is:

1. Increasing insights and knowledge for biology teacher about the students difficulties in learning inheritance.
2. Motivating teachers to improve the learning process and understand the characteristics of the students who have learning difficulties.
3. It is expected that from this research can be used as the basis or reference to perform advanced research related to this research.

While the practical contribution of this research is:

1. For students, gives an opportunity to be tested and know the level of the knowledge on inheritance subjects.
2. For teachers, as material inputs or constructive criticism that can determine and perform efficient and effective efforts to improve the quality of learning the inheritance material so that students learning difficulties can be resolved.
3. School materials/institutions, as material inputs or constructive criticism to be able to determine the policy in an effort to improve the quality of learning and education.



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