

# CHAPTER I

## INTRODUCTION

### 1.1. Background of the problem

Entering the 21st century with such rapid technological advances as it is today, Education has become an important and main thing in life to improve Human Resources (HR). The quality of education in a country or nation can be used as a determinant of the progress or failure of a country or nation. Education can also be said to be a means to achieve life success for a person. Where the higher a person's education, the higher the income obtained to meet the needs of life as a determinant of achieving a more decent life success.

Education in Indonesia is expected and pursued to experience development to be able to achieve the goals and ideals of the Republic of Indonesia. The development of education is in line with the development of the existing curriculum in Indonesia, where over time the existing curriculum continues to experience changes that are tailored to the needs of education in Indonesia. The curriculum set at this time is kurikulum merdeka where this curriculum is a curriculum developed from the previous curriculum, namely the 2013 Curriculum. The curriculum needs to be continuously developed and refined to keep up with the development of science and technology, as well as the developing society. No wonder that in Indonesia curriculum development continues to be pursued and implemented. The latest development of the curriculum program is the kurikulum merdeka program which was previously included in the 2013 Curriculum program following improvements made to the 2013 Curriculum program (Khoirurijal, 2022).

Merdeka Belajar is a policy of the Ministry of Education and Culture of the Republic of Indonesia. The purpose of implementing an kurikulum merdeka is to develop students' independent thinking skills. The true meaning of freedom of thought is the teacher. If teachers don't teach individually, students don't have independent ideas. Teachers also have government-specific purposes such as certification, management, etc. Of course, in this case, the student cannot

advance in his studies because he can only focus on grades. Because students have different abilities in absorbing the knowledge provided by the teacher, independent learning allows students to develop their skills according to their abilities and interests (Naufal, 2020). In addition, Merdeka Belajar opens new perspectives on the problems faced by teachers. Starting from registration, through training, learning opportunities, assessments, and national examinations. Thus, teachers can express their ability to sow seeds of great hope for the nation, and they need an interesting and creative learning environment that can motivate students to continue their studies in the future (Ningrum, 2022). Self-directed learning is learning that focuses on students' interests and abilities and fosters a spirit of creativity and excitement. The Merdeka Belajar curriculum answers all complaints against the education system. One is that students' grades are based solely on academic subjects. In addition, Merdeka Belajar provides freedom of thought for teachers to involve students.

According to (Yamin and Syahrir, 2020), the concept of "Free Learning" was studied as a proposal for reform of the national education system. Reorganize the education system to be able to face changes and developments in the country and adapt to changing times. This process restores the essence of science, which is the science that makes laughter and the science that heals. According to Nurdin Usman (Prayogi et al., 2018), implementation is the action or implementation of a well-planned and well-planned plan. Currently, special curriculum learning activities are created through a scientific approach that uses various scientific learning models, one of which is the Project Based Learning (PjBL) learning model. Broadly speaking (Daniel, 2017), project-based learning is a project-based learning model where students are empowered to plan learning activities and work together on tasks / projects with the goal of showing the results of the work / project given. Others PjBL theory is based on constructivist theory which is based on the context of cognitive science and learning theory. Currently, (Ramadhan et al., 2020) project-based learning is a learning model with students' goals and attention to complex inquiry and understanding problems.

In the kurikulum merdeka, a teaching material is needed that can implement the dimensions located in the curriculum itself and implement the existing dimensions, the teaching material is also expected to support students in their learning activities and the achievement of learning activity goals. one of them is student worksheets. The use of interesting student worksheets in learning that applies to an kurikulum merdeka is considered capable of supporting the achievement of learning objectives (Bailey et al., 2016). Students can carry out their learning tasks through activities they are interested in, diagnostic assessments carried out before learning can be used as guidelines in compiling activities on student worksheets (Hernawan et al., 2012). In addition, student worksheets are also needed to ensure the achievement of competencies to be achieved by students. For this reason, interesting student worksheets are needed and in accordance with the curriculum so that students are more active and understand more about learning, especially biology learning that will be taught.

One of the biology learning materials in the kurikulum merdeka in class X is biodiversity material. Biodiversity material is a complex material because it studies the diversity of gene levels, types, and ecosystems. Based on the results of a questionnaire that researchers distributed to class X students at SMA Negeri 1 Sumbul, in learning biology students think that biology lessons are lessons that are classified in the moderate to difficult category, this is what causes students to tend to be less active. this is because biological material contains a lot of reading and has a lot to do with Latin which is difficult to remember. besides that, from the results of direct researcher observations of teaching materials used, namely the package books used at this time, the student worksheets in it mostly solve problems where the problem is told in the form of dense paragraph writing. In addition, the existing student worksheets are only sourced from textbooks and are only used when giving homework. Therefore, the material was chosen as the material in the student worksheet that the researcher will develop. In addition, biodiversity material is directly related to the environment, so that the knowledge gained through this learning can improve learning outcomes and foster students' environmental awareness.

From the results of interviews conducted by researchers with biology teachers at SMA Negeri 1 Sumbul, researchers found that the use of student worksheets as teaching materials for biology learning, especially biodiversity material, is still rarely used, especially those based on Project Based Learning (PjBL). The student worksheets used are mostly only in the form of student worksheets in the form of homework in the book and do not have an attractive design and do not guide students in finding and understanding the concept of biodiversity. In addition, the existing student worksheets also do not provide learning experiences for students to freely experiment and explore the potential they have to create because most of the worksheets in the book are only based on problem solving without creating a project that can make students understand more and be more creative. For this reason, it is necessary to develop student worksheets based on Project Based Learning (PjBL) so that students become more active, creative, and innovative with the Basic Competencies of Analyzing various levels of biodiversity in Indonesia along with threats and conservation and being able to present the results of observations of various levels of biodiversity in Indonesia and proposals for its conservation.

Based on the background description of the problem that has been described, then the researcher conducted a research entitled “Development of Project Based Learning (PjBL) Based Student Worksheets (LKS) on Biodiversity Material for Class X”.

## **1.2. Identification of the Problem**

Based on the background that has been described, the identification of problems in this study is:

1. Students tend to be less active and bored in learning biology because the teaching materials used tend to be a lot of text.
2. Student worksheets are still rarely used in biology learning, especially on biodiversity material.
3. The student worksheets used are mostly only in the form of student worksheets in the form of homework in the book and do not have an

attractive design and do not guide students in finding and understanding the concept of biodiversity

### **1.3. Scope of the Research**

The scope in this study is:

1. The subjects of this research were grade X students of SMA Negeri 1 Sumbul
2. The object of this research is a Project Based Learning (PjBL) based student worksheets on biodiversity material.
3. Product validation student worksheets developed are limited to the assessment of material experts, learning experts, design experts, teacher response and student responses.

### **1.4. Scope of the Problem**

For the problems in this study to achieve the expected objectives optimally, the problems in this study are limited to:

1. Project Based Learning (PjBL)-based student worksheets designed are limited to biodiversity material.
2. The development model in this study uses Thiagarajan's 4-D development model which is limited to the define, design, develop and disseminate stages.
3. The student worksheets developed are limited to the assessment of material experts, learning experts, design expert, teacher response, and student responses.
4. To determine the effectiveness of learning by using student worksheets can be seen from the teaching quality indicators by conducting tests on two classes namely X-A and X-G at SMAN 1 Sumbul.

### **1.5. Formulation of Problem**

Based on the identification of the problem that has been described, the formulation of the problem in this study is:

- 1) What is the feasibility of Student worksheets based on Project Based Learning on the biodiversity topic according to material, learning, and design experts?

- 2) What is the biology teacher's response to Student worksheets based on Project Based Learning on the biodiversity topic?
- 3) What are the students' response to Student worksheets based on Project Based Learning on the biodiversity topic?
- 4) What is the effectiveness of Student worksheets based on Project Based Learning on the biodiversity topic from student learning outcomes?

#### **1.6. Research Objectives**

The objectives to be achieved in this study are:

- 1) Knowing the feasibility of Student worksheets based on Project Based Learning on the biodiversity topic according to material, learning, and design experts.
- 2) Knowing biology teacher's response to Student worksheets based on Project Based Learning on the biodiversity topic.
- 3) Knowing the students' responses to Student worksheets based on Project Based Learning on the biodiversity topic.
- 4) Knowing the effectiveness of the Project-based Learning-based student worksheet on biodiversity topic from student learning outcomes.

#### **1.7. Research Benefits**

The expected benefits after using Student worksheets based on Project Based Learning on the biodiversity topic are:

1. For Students, the resulting student worksheets can be used as a learning resource that can motivate and help students to learn independently, creatively, innovatively, and efficiently in the process of teaching and learning activities.
2. For teachers, the resulting student worksheets can be used as guidelines for developing Project-Based Learning based teaching materials and applying them to the learning process.

3. For schools, the results of this research can be used as an example to encourage the provision of teaching materials in the form of Project-Based Learning based student worksheets.



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