

CHAPTER I

INTRODUCTION

1.1 Research Background

A study conducted by UNESCO in 2018 highlighted the importance of education quality in unlocking individual potential. The process of discovering, stimulating, and optimizing an individual's common abilities, skills, and capabilities is called unlocking individual potential. The study found that quality education can improve individual potential such as cognitive skills, social and emotional development, and encourage lifelong learning. Quality education can also improve creativity, innovation, and critical thinking, which are crucial skills for success in the modern world. Overall, quality education can allow individuals to fully improve their potential (UNESCO, 2018). Therefore, the government and educational institutions need to ensure that the education provided is of good quality and can meet the needs of individuals and society.

A very important role in improving the quality of education is played by the government, one of which is by updating the curriculum. The curriculum must continuously be updated to reflect current discoveries, especially as science and information technology improves for educational purposes. Education cannot be implemented without a curriculum. The curriculum is an essential component of the learning process, serving as a guiding framework for the implementation of the learning process. The learning process in schools is founded upon the curriculum, and without a curriculum, it will not be organized. A well-defined curriculum is crucial for the direction and structure of education in Indonesia. (Kosasih et al., 2022).

As highlighted by Wahyuni & Berliani (2019), the curriculum is utilized to achieve educational goals in Indonesia. It should not be seen merely as documentation but rather acknowledged as a valuable tool and reference for teachers to effectively conduct the learning process, aiming to achieve the national educational objectives to the best of their abilities. A deliberate intention and plan are

served by the curriculum, and its execution takes place through the teaching and learning process intended to improve students. The curriculum has a crucial significance in education because it is instrumental in producing desired educational results. Furthermore, the curriculum should be designed to provide learning experiences that foster the development of students' common abilities, equipping them with practical and essential skills for their future endeavors. Thus, educational quality is primarily determined by the curriculum. Therefore, the improvement of a quality curriculum following progress and advancements in science and technology is deemed highly important by the government.

Since 2020 COVID-19 started to enter Indonesia, and its impact has been significant across all aspects, including the field of education. It has been observed that almost all students in Indonesia are required to participate in the online learning process. The expectation is for every Indonesian citizen to actively contribute to addressing this outbreak by adhering to government regulations and following health protocols (Bisri, 2020). The learning system needs to be adjusted to ensure the continuity of the educational process in light of this phenomenon, such as a pandemic. For instance, the development of the curriculum should be aligned with the emergency of Education and Culture, which has emphasized the importance of simplifying the curriculum through the creation of a particular or emergency curriculum.

The simplification of the emergency curriculum has proven effective in addressing educational setbacks during the COVID-19 pandemic. In the context of recovery in the education sector, Minister Nadiem Makarim has urged educational institutions to have the freedom to choose from three curriculum options without being mandated by the central authority. These options include: first, the full implementation of the 2013 Curriculum; second, the Emergency Curriculum, which is a simplified version of the 2013 Curriculum; and third, the Merdeka Curriculum. Curriculum development is inevitable but must be undertaken and adapted based on needs and principles. The Merdeka Curriculum represents the development and implementation of an emergency curriculum introduced in response to the impact of the COVID-19 pandemic.

The Merdeka Curriculum aims to unleash the untapped potential of teachers and students, thereby enhancing the quality of Merdeka learning. As a result, it is expected that the Merdeka Curriculum will contribute to the acceleration of national educational goals, with a specific focus on the improvement of human resources who possess superior and competitive qualities, as well as noble character and advanced reasoning abilities (Asmarawati, 2022). The potential improvement of students can be explored by adjusting their interests, talents, and tendencies, offering independence and flexibility through Merdeka learning. Once the potential possessed by students has been maximally explored, abilities and skills are expected to be gained, which can be utilized in facing economic, social, technical, and environmental challenges. However, when online learning is conducted, teachers are unable to analyze learning completeness optimally and with certainty. This limitation arises because online learning takes place at home, where students can only rely on browsing the internet without having a balanced understanding and completeness of the lesson. The clarity of whether students are following the lesson is also unclear, as online learning lacks transparency regarding real-time activity due to the constraints of space and distance. Furthermore, there is a noticeable decrease in the quality of learning for students when participated in permanent online learning, leading to learning loss (Usamah, 2022).

The Merdeka Curriculum is an intra-curricular learning curriculum that is characterized by its diversity and optimization of content, providing students with sufficient time to explore concepts and enhance their competencies. Flexibility is given to teachers, allowing them to choose from a range of educational tools to adapt the learning model to suit the specific learning needs and interests of students. The development of this project is based on a specific theme determined by the government to enhance the attainment of the Pancasila Profile. It is important to note that this project is not directly linked to learning outcomes, as its primary intention is not to achieve success in specific subjects. In addition to the student profile enhancement project, the characteristic of the application of the Merdeka Curriculum is the presence of differential learning or teaching according to the level of the student. (Amiruddin et al., 2022)

Different approaches to teaching and learning will be involved in the implementation of the Merdeka Curriculum in physics. Teaching that is contextual and relevant to students' everyday lives will be emphasized by the Merdeka Curriculum in physics. Physics concepts can be associated with natural phenomena, technology, or real-life applications by teachers to help students understand the importance of physics in everyday life. Additionally, project-based learning can be encouraged by the application of the Merdeka Curriculum to learning physics, where projects or assignments that demand problem-solving, research, and an understanding of physics concepts are given to students. For example, project assignments to design and build simple devices, perform experiments, or analyze physics data may be given to students (Mairizwan et al., 2022).

The Merdeka curriculum focuses on project-based learning through a Process Science Skills approach. Indicators of basic process skills include seeing, classifying, measuring and manipulating numbers, making conclusions, planning, and communicating. However, in the research conducted, scientific process skills were not properly trained in learning activities or embedded with models and assessments. It refers to students' capacity to comprehend and apply scientific approaches in describing phenomena in nature. The major goal is to have a better understanding of science, including how it is developed and implemented in everyday life (Aditiyas, S. E., & Kuswanto, H., 2024)

The learning process can be made more effective by the active involvement of students, ensuring that no students are left behind, which serves as an indicator of the success of the implementation of the Merdeka Curriculum. Students' active involvement in learning is encouraged by the Merdeka Curriculum. Collaborative approaches, group discussions, or interactive physics demonstrations can be used by teachers to directly involve students in exploring physics concepts. The inclusion of a laboratory practicum is also significant in this curriculum, where students can conduct their experiments and directly observe physical phenomena (Kusyanti, 2022). In addition, the utilization of technology in learning can be facilitated by the application of the Merdeka Curriculum in physics. Computer simulations, physics software, or other digital tools can be used by teachers to reinforce students'

understanding of abstract physics concepts. The use of technology enables real-time data collection, visualization of concepts, and collaboration between students (Mumtaza et al., 2023).

The teacher's assessment of results or evaluation of learning is also impacted by the implementation of the Merdeka Curriculum. In a learning activity, the teacher plays a significant role in transferring knowledge to the students (Kasman & Lubis, 2022). Additionally, the teacher assumes various roles such as educator, instructor, learning resource, facilitator, mentor, demonstrator, and motivator. Among the numerous roles a teacher undertakes in the learning process, it can be stated that they have a vital role and hold responsibility for attaining the learning objectives. This demonstrates that teachers are expected to develop effective learning methods, including a thorough understanding of the applicable curriculum.

For the teachers, the transition of the Merdeka Curriculum has resulted in numerous modifications to the phases of learning creation, execution, and evaluation. One of them is the existence of instructional modules, diagnostic assessments, student reflection, and educator perception, all of which aim to improve the competency of both students and teachers (Hardanie, 2022). This modification forces instructors to continuously learn and adapt to effectively execute the Merdeka Curriculum's new learning paradigm. A lesson plan is created by a teacher before learning is implemented. The goal of planning is to develop a framework for the design of the learning process as well as the actual demands of the students (Chizhik & Chizhik, 2018). However, a few teachers are still incapable of correctly constructing and planning lessons, which is inappropriate for the learning outcomes.

Several schools in Medan were chosen as driving schools as part of the Merdeka Curriculum implementation process. For this research, the author selected SMAN 1 Pancur Batu, which is one of the driving schools to which the author has access. Based on the findings of the observations and unstructured interviews conducted at SMAN 1 Pancur Batu, any general school policy in the Merdeka Curriculum implementation, such as the execution of school assessments, the assessment of minimum competence and character surveys, the development of an effective,

efficient, and student-oriented Learning Implementation Plan, and the acceptance of new students zoning, have been well implemented.

However, some barriers are commonly experienced in the application of the Merdeka Curriculum, particularly in physics subjects. These include (1) Difficulty in the use of technology by teachers; (2) Inability of students to learn independently; (3) Some subject matter is still teacher-centered; (4) Passivity of students during learning; (5) Low motivation for learning among students; (6) Ineffective grasp of physical subject concepts; (7) The perception among students that physics is a difficult subject characterized by memorizing equations and calculations. Physics teachers also face challenges when implementing the Merdeka Curriculum, including the need to adapt and move beyond the comfort zone of the traditional learning system, as well as overcoming limitations in their reference subject matter and teaching skills in alignment with the Merdeka Curriculum.

Following what is stated above, this research is required to determine how physics teachers exploit the Merdeka Curriculum in the learning process in the classroom. As well as that, however, this study was also designed to assess teachers' performance in implementing the Merdeka Curriculum in the classroom when teaching physics.

1.2 Problem Identifications

Based on the background described above, the problems that can be identified are as follows:

1. Difficulty in the use of technology by teachers.
2. Some subject matter is still teacher-centered.
3. Difficult challenges faced by physics teachers in adapting complex projects in physics learning to match the student's level of understanding and abilities.
4. Inability of students to learn independently.
5. Passivity of students during learning.
6. Low motivation for learning among students.
7. Ineffective grasp of physical subject concepts.

8. The perception among students that physics is a difficult subject characterized by memorizing equations and calculations.

1.3 Research Scopes

Based on the description of the previous background, the scope of this research can be determined, namely:

1. SMAN 1 Pancur Batu in Medan has implemented the Merdeka Curriculum.
2. The implementation of the Merdeka Curriculum in Medan which is conducted by physics teacher.
3. Work and energy physics subject matter.

1.4 Problem Formulations

Considering the indicator of implementation of the Merdeka Curriculum, the following problem formulations are proposed for the research:

1. How does the Merdeka Curriculum implement by physics teacher?
2. How is student participation in the learning process on the physics of work and energy subject matter through Science Process Skills using the Merdeka Curriculum?

1.5 Problem Scopes

It should be subject to restrictions to make the research more manageable and relevant to what needs to be proven. As a result, various constraints need to be specifically discussed:

1. Discover how teachers' participation in physics learning using the Merdeka Curriculum.
2. Consider the student gap in the Merdeka Curriculum's Physics learning process through Science Process Skills.

1.6 Research Objectives

The research being presented contains various objectives that must be achieved based on the problem formulation of the previously described, such as:

1. Knowing how teachers' participation in physics learning using the Merdeka Curriculum.
2. Knowing the student gap in the Merdeka Curriculum's Physics learning process through Science Process Skills.

1.7 Research Purposes

To demonstrate that the problem formulation above is worthy of research, the following benefits of this study can be highlighted:

1. The benefit of this research is to provide a better understanding of the implementation of the Merdeka Curriculum in physics learning in Medan.
2. The benefit of this research is that it can assist physics teachers in improving the quality of their physics learning by understanding the challenges, barriers, and practical strategies involved in implementing the Merdeka curriculum. The results of this research were able to provide valuable insights for physics teachers in developing learning methods that are more interactive, contextual, and responsive to students' needs.
3. The benefit of this research is that it can provide helpful input in designing training programs and professional development for physics teachers in Medan. The results of this study can be used to identify training needs, design relevant training subject matter, and support the development of the skills and knowledge of physics teachers in implementing the Merdeka Curriculum.
4. The results of this research have the potential to provide useful information to teachers and administrators at the local, regional, and national levels. The results of this research can be used to establish educational policies that are more supportive of the adoption of the Merdeka Curriculum in physics learning and the development of physics teachers' professionalism.