



Challenges in Implementing the Merdeka Curriculum by Biology Teachers at SMAN 1 Kolaka

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Abstract

The implementation of the Merdeka Curriculum requires biology teachers to adapt to more flexible, student-centered, and competency-based learning approaches; however, in practice, they still face various challenges at the school level, including at SMAN 1 Kolaka. This study aims to explore the implementation of the Merdeka Curriculum by a Biology teacher at SMAN 1 Kolaka and to identify various challenges encountered during the learning process. A descriptive qualitative approach was employed, with data collected through structured interviews conducted with a Biology teacher of Grade X. The data were analyzed using thematic analysis, which included transcription, coding, and interpretation. The findings indicate that the Merdeka Curriculum has been implemented and is considered more efficient, fostering a more meaningful and enjoyable learning experience for students. However, the teacher still faces difficulties in delivering material to students with diverse cognitive abilities. The study concludes that enhancing teacher competence in designing adaptive lesson plans (RPP) and utilizing technology are crucial strategies to overcome instructional challenges and optimize the implementation of the Merdeka Curriculum.

Keywords: Merdeka Curriculum, Biology Teacher, Curriculum Implementation, Lesson Plan (RPP).

A. Introduction

Education is a fundamental pillar in shaping a superior generation with integrity and the capacity to contribute positively to national development (Setyawan, 2025). To enhance the quality of national education, the Ministry of Education, Culture, Research, and Technology (Kemendikbudristek) introduced the *Merdeka Curriculum* as an improvement of previous curricula (Hartoyo, et al., 2023). This curriculum emphasizes student-centered learning that is flexible, adaptive to contemporary developments, and aligned with 21st-century needs (Kemendikbudristek, 2022).

In biology learning, the Merdeka Curriculum is expected to support both teachers and students in understanding concepts more comprehensively, while also allowing students to explore

materials according to their developmental stages (Rahmayumita & Hidayati, 2023). The curriculum grants educators the autonomy to adapt learning to students' characteristics and emphasizes flexibility, independent learning, and character building through the *Pancasila Student Profile* (Anisa, et al., 2025). Such an approach provides opportunities for teachers to design contextual, collaborative, and meaningful learning activities.

Nevertheless, successful implementation relies heavily on teachers' understanding, readiness, and pedagogical skills (Sutrianto, et al., 2024). Studies indicate that many teachers still face difficulties in grasping the curriculum's principles, developing lesson plans, and integrating new approaches into practice (Hakim, et al., 2023; Baehaki, 2023). These challenges are further intensified by limited resources, varying pedagogical backgrounds, and disparities between urban and rural schools.

This situation is also reflected in high schools in urban areas, such as SMAN 1 Kolaka in Southeast Sulawesi. At this school, biology teachers who implement the Merdeka Curriculum in grade X face various challenges, particularly in delivering material to students with heterogeneous cognitive abilities. These difficulties are further compounded by practical constraints, including inadequate training in module development and difficulties integrating the P5 approach. This shows that although this curriculum offers flexibility in the teaching and learning process, teachers still need adaptive and inclusive pedagogical skills for the learning process to run effectively (Meliza, et al., 2024).

Given that biology demands both conceptual and practical mastery, the role of teachers in designing strategies that align with students' needs and characteristics becomes crucial (Sibagariang, et al., 2021). Understanding the differences in student characteristics can help teachers educate, guide, and direct students more optimally. When educators fail to adjust methods and materials, the effectiveness of the learning process diminishes (Hafizha, et al., 2022).

Therefore, this study aims to investigate how biology teachers at SMAN 1 Kolaka implement the Merdeka Curriculum, identify the challenges they face, and propose practical solutions to strengthen its application.

B. Literature Review

1. Curriculum

In efforts to improve the quality of education, the curriculum plays a crucial role as one of the main components (Huda, et al., 2025). The curriculum is viewed as a system consisting of various interconnected and mutually supportive elements, such as learning objectives, teaching materials, learning strategies, and evaluation systems. The synergistic functioning of all these components is key to ensuring that the curriculum can operate effectively toward achieving educational objectives. If any one of these elements does not operate optimally, the entire curriculum system will face obstacles in its implementation. Therefore, curriculum implementation requires thorough planning and systematic organization of all its components (Huda, 2017).

The curriculum also serves as a fundamental instrument in determining educational success. Without a curriculum that is appropriately designed and tailored to needs, achieving educational objectives across various pathways-formal, informal, and non-formal-will be challenging (Huda, 2017). In line with this, Law Number 20 of 2003 concerning the National Education System defines the curriculum as a set of plans and arrangements regarding the objectives, content, and learning materials and methods used as guidelines for teaching and learning activities to achieve specific educational goals.

2. Merdeka belajar (The Freedom to Learn Program)

Merdeka Belajar is a policy from the Ministry of Education, Culture, Research, and Technology that aims to create a pleasant learning environment for both teachers and students (Sherly, et al., 2021). Merdeka Belajar can be understood as the implementation of a curriculum that prioritizes a pleasant learning environment and encourages innovative thinking among teachers (Saleh, 2020). According to Meliza, et al. (2024), Merdeka Belajar is a new movement to transform the national education system, which has long been perceived as monotonous. Meanwhile, Baehaki (2023) defines Merdeka Belajar as an adjustment to policy aimed at restoring the essence of assessment, which has increasingly been overlooked.

In Merdeka Belajar, teachers and students are given full trust in the learning process (Mulyasa, 2021). In the Merdeka Belajar program, teachers must have free and independent thinking in designing learning that is in accordance with the needs of students. Teachers have the freedom

to choose elements from the curriculum to be developed in the learning process in accordance with the needs of students (Nelisma, 2022).

3. *Merdeka Curriculum*

The Merdeka Curriculum is an intraschool learning model that provides students with the freedom to explore subject matter in depth and strengthen their competencies through more optimal content management (Rahimah, 2022). This curriculum is being introduced gradually by the Ministry of Education, Culture, Research, and Technology (Kemendikbudristek) to all educational institutions in Indonesia. Its implementation is not carried out simultaneously, given the varying levels of readiness in each school. Nevertheless, the Merdeka Curriculum is expected to be widely implemented across various levels of education, from elementary schools (SD) and junior high schools (SMP) to senior high schools/vocational schools (SMA/SMK) and higher education institutions. The implementation of this curriculum is regulated in the Minister of Education, Culture, Research, and Technology's Decision Number 162/M/2021 on the School Development Program.

The implementation of the flexible Merdeka Curriculum is in line with the Ministry of Education, Culture, Research, and Technology's policy, which gives educational institutions the freedom to determine the timing and readiness of its implementation. One of the programs supporting the implementation of the Merdeka Curriculum is the School Movement Program, in which the Ministry of Education, Culture, Research, and Technology provides guidance and support in implementing the curriculum. Through this program, various best practices and positive experiences in implementing the Merdeka Curriculum can be documented and serve as a reference for other educational institutions. With this policy in place, it is hoped that the national education system will undergo significant improvement. Therefore, active and innovative roles from educators are needed in developing learning strategies to achieve the established educational goals (Meliza, et al., 2024).

C. Methodology

1. *Research Design*

This study uses a qualitative descriptive approach. This approach was chosen to explore the phenomenon under investigation by presenting descriptions that reflect the actual conditions in the fields. The data are presented naturally, providing a comprehensive and contextually relevant understanding of the research object.

2. *Instruments*

Interviews are a data collection method conducted through structured conversations with specific objectives (Nugrahani, 2014). In this study, interviews were conducted to obtain accurate and in-depth information from the informant, namely a biology teacher at SMAN 1 Kolaka. The researcher acted as the interviewer, responsible for asking questions, evaluating and clarifying answers, recording important information, and probing deeper into relevant issues, while the informant provided responses and explanations. A structured interview technique was employed, using a pre-prepared set of questions as the research instrument to ensure the process remained consistent with the study's objectives (Sugiyono, 2016).

3. *Technique of Data Analysis*

The interview data were analyzed using thematic analysis. The process followed three stages: (1) transcription, which converted oral data into written text for in-depth examination; (2) coding, which identified key themes and categorized patterns relevant to the research focus; and (3) interpretation, in which the data were contextualized within the implementation of the Merdeka Curriculum and conclusions were drawn (Rozali, 2022). This technique was selected to capture the deeper meaning of the biology teacher's experiences in applying the Merdeka Curriculum in the school context and to generate findings that directly address the study's aim of identifying implementation challenges and proposing practical solutions.

D. Findings and Discussion

1. *Findings*

This study aims to identify the implementation of the Merdeka Curriculum by biology teachers at SMAN 1 Kolaka in the learning process, as well as to explore the various challenges faced during its implementation. To obtain relevant data, the researcher conducted direct interviews. The

following is a list of questions asked by the researcher and the responses given by biology teachers at SMAN 1 Kolaka.

Researcher: *What curriculum are you currently using in your teaching and learning process?*

Teacher: "I am using the Merdeka Curriculum, specifically for Grade X."

Opinion: The teacher's acknowledgment of applying the Merdeka Curriculum shows that the school has implemented it, at least in grade X, in line with the government's educational reform agenda. This creates a relevant context for analyzing the curriculum's practical application.

Researcher: *What are your reasons for choosing the Merdeka Curriculum?*

Teacher: "I chose the Merdeka Curriculum because it offers several advantages. Learning materials are structured in a simpler yet more in-depth manner. The learning process is more autonomous and flexible, the content is more relevant and interactive, and the overall learning experience becomes more meaningful and enjoyable for students."

Opinion: Teachers chose the Merdeka Curriculum because it is considered to offer substantial advantages over the previous curriculum. According to teachers, the learning material is presented in a simpler yet still in-depth manner, making it easier to focus on core understanding. In addition, the learning process has become more independent and flexible, with more relevant and interactive content, creating a more meaningful and enjoyable learning experience for students. This shows that the main reason teachers adopted the Merdeka Curriculum was not only because of policy requirements, but also because this curriculum is considered capable of directly improving the quality of learning and student engagement.

Researcher: *What difficulties have you encountered in implementing the Merdeka Curriculum?*

Teacher: "Of course, there are challenges, but overall, the Merdeka Curriculum feels more efficient than the previous ones. One of its benefits is the simplification of Basic Competencies (*Kompetensi Dasar*), which have been reduced from five to only one or two. However, I do face difficulties in delivering material to students with varying levels of comprehension and different IQ levels."

Opinion: Teachers emphasize that the implementation of the Merdeka Curriculum has both positive aspects and challenges. On the positive side, teachers feel that this curriculum is more efficient than before due to the simplification of Basic Competencies, thereby reducing the material load and allowing for greater focus. However, the main challenge faced is the difference in students' cognitive abilities and levels of understanding, which means that the delivery of material is not always consistent. This shows that although the Merdeka Curriculum provides flexibility, its successful implementation is highly dependent on adaptive pedagogical strategies that are able to accommodate the diversity of students in the classroom.

Researcher: *What efforts have you made to address these challenges?*

Teacher: To manage differences in students' learning absorption, I have implemented several strategies, particularly through the use of an assessment rubric that focuses on multiple key aspects. The first aspect is **discipline and compliance**, which involves encouraging students to follow instructions properly, complete assignments on time, and maintain a conducive classroom environment. The second aspect is **collaboration and active participation**, by promoting student involvement in discussions, cooperative group work, and contributing ideas while completing tasks responsibly. The third aspect is **critical thinking and confidence**, where students are encouraged to ask questions, express opinions, answer questions, and confidently present in front of the class. These strategies are designed to create an inclusive learning environment and foster active engagement from all students according to their individual capacities.

Opinion: Teachers strive to overcome challenges in implementing the Merdeka Curriculum by applying strategies oriented towards holistic assessment through rubrics. The focus of assessment is not only on cognitive achievement, but also on aspects of discipline, collaboration, active participation, critical thinking, and student confidence. This approach shows that teachers are trying to create an inclusive learning environment, where each student is given space to develop according to their respective capacities. This strategy is in line with the spirit of the Merdeka Curriculum, which emphasizes flexibility and meaningful learning through active participation and student confidence.

2. Discussion

Based on the results of an interview with a Biology teacher at SMAN 1 Kolaka, it was found that the Merdeka Curriculum has been implemented at the school, particularly in grade X. The teacher stated that the Merdeka Curriculum offers several advantages, including greater efficiency and the ability to create a meaningful and enjoyable learning environment for students. This statement aligns with the primary goals of the Merdeka Curriculum, which include providing flexibility in the learning process, presenting more relevant and interactive content, and fostering meaningful and engaging learning experiences (Baehaki, 2023).

The teacher acknowledged several positive aspects of the Merdeka Curriculum, yet emphasized a significant challenge: providing material to students with different intellectual abilities. This suggests that designing instruction that meets the diverse needs of all students is the main difficulty for teachers. This finding aligns with Silaswati (2022), who noted that teachers' understanding of the Merdeka Belajar concept varies, especially regarding the learning process, lesson plan preparation, and assessment practices. Additionally, Tendrita and Kaliu (2024) emphasize other challenges, such as limited socialization, teacher preparedness, learning resources, ATP development, and technological proficiency. Therefore, careful preparation is essential, and developing lesson plans (RPPs) is a crucial component of designing and managing learning in a systematic and effective manner.

Strengthening Lesson Plan Preparation (RPP) is crucial to addressing the challenges of implementing the Merdeka Curriculum. The RPP serves as both a formal requirement and a framework that ensures learning objectives, materials, methods, resources, and assessments are aligned with students' diverse needs (Farida, 2012; Abdul, 2008). Effective RPP development must reflect the principles outlined in Permendiknas No. 41 of 2007, which emphasize considering learner characteristics, promoting active student participation, integrating literacy and ICT, and ensuring coherence among learning components. As Sutikno (2009) emphasizes, careful planning is essential for achieving educational goals; without it, instructional activities may become fragmented and ineffective. Applying these principles allows teachers to design more adaptive strategies that improve learning quality and support the Merdeka Curriculum's objectives.

Moreover, the integration of technology in teaching and learning serves as a strategic alternative to facilitate the delivery of material to students. This approach is considered more effective than conventional lecture methods, which tend to be monotonous. In today's digital era, technology integration in education is increasingly essential, particularly to enhance teachers' competencies in designing and implementing more interactive and varied instruction (Upa et al., 2024). Teachers who implement the Merdeka Belajar approach are also expected to adapt swiftly to changes, embrace shifts in learning content, make optimal use of digital tools, and continuously engage in reflective practices to improve the quality of the learning process (Yuhastina et al., 2020). With technological support, educators can use a variety of approaches to deliver instructional content. Students are provided with opportunities to learn more flexibly and independently at their own pace. According to Baroroh et al. (2024), the use of technology, particularly through online learning platforms, educational applications, and multimedia, contributes to increased student engagement and provides broader access to learning resources. Additionally, it creates more personalized learning experiences.

E. Conclusion

The study concludes that biology teachers at SMAN 1 Kolaka have implemented the Merdeka Curriculum in grade X. This implementation is considered advantageous because it provides flexibility, simplifies material, and makes learning more meaningful and enjoyable for students. However, teachers still face obstacles when adapting the delivery of material to students' diverse cognitive abilities. This underscores the importance of enhancing teachers' pedagogical competencies, especially in developing adaptive and responsive lesson plans via the systematic creation of Lesson Implementation Plans (RPPs). Additionally, integrating information and communication technology into the learning process is an effective strategy for overcoming these challenges and creating a more interactive, contextual learning environment. Teachers play a vital role in the success of learning. The ability to deliver material effectively, solve problems and adapt to students' needs is essential. Teachers are expected to continuously enhance their professionalism to address the challenges of the Merdeka curriculum and create meaningful learning experiences for students.

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