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Implementation of the Merdeka Curriculum in Grade 4 Integrated Science and Social Studies Learning at SDN Wailiti

Opportunities, Challenges, and Strategies for Student-Centered Education

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ABSTRACT

The Merdeka Curriculum represents a transformative approach in Indonesian primary education, emphasizing flexible, student-centered learning and holistic development. This study investigates the implementation of the Merdeka Curriculum in Grade 4 Integrated Science and Social Studies at SDN Wailiti, Nusa Tenggara Timur. Using a qualitative descriptive approach, data were collected through classroom observations, interviews with teachers and the principal, and documentation of learning activities. Findings indicate that the curriculum enables teachers to adapt materials according to student needs, promotes active and meaningful learning, and integrates project-based activities aligned with the Pancasila Student Profile (P5). Challenges identified include teachers' difficulty understanding learning outcomes, limited instructional resources, and students' concentration and conceptual understanding. Strategies to overcome these obstacles involve professional development, collaborative module design, utilization of digital learning resources, and inquiry- and project-based learning methods. The study highlights the importance of ongoing teacher support, adaptive teaching strategies, and resource optimization to enhance curriculum implementation, ultimately contributing to student engagement, critical thinking, and holistic competence.

Keywords
Curriculum Implementation
Merdeka Curriculum
Primary Education
Project-Based Learning
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Introduction

Education is a fundamental aspect of human life [1] and can be considered a process to expand individual potential, enabling people to live and succeed fully [2]. The development of individual potential can be implemented through structured educational programs, such as the Merdeka Curriculum [3]. According to the Regulation of the Minister of Education, Culture, Research, and Technology No. 12 of 2024 regarding the Curriculum for Early Childhood Education, Primary Education, and Secondary Education, the Merdeka Curriculum is officially established as the foundational framework for all educational units in Indonesia [4].

The Merdeka Curriculum introduces a new educational paradigm and emphasizes the crucial role of teachers, recognizing that teaching is a noble but challenging profession [5]. Teachers play an essential role in curriculum development to ensure that learning materials align with students' needs [6]. Through the curriculum, educational institutions can fulfill their primary function of developing students' potential holistically [7]. Therefore, effective implementation provides a strong foundation for achieving educational goals and ensures meaningful and relevant learning experiences [8].

The curriculum emphasizes not only academic knowledge but also practical skills applicable to daily life and the workforce. It promotes student-centered learning, encouraging active engagement and meaningful experiences [8]. Teachers are required to deliver content while fostering character development [9]. Since its initial implementation in 2022, the Merdeka Curriculum has been gradually applied, beginning with select grades based on local readiness and student capacity [10]. However, the curriculum remains new to many teachers and students, with some confusion regarding its implementation, particularly for Integrated Science and Social Studies (*Ilmu Pengetahuan Alam dan Sosial* or IPAS), which combines natural and social science concepts [11,12].

Preliminary observation at SDN Wailiti, Nusa Tenggara Timur on October 21, 2024, revealed that while the school has implemented the Merdeka Curriculum since 2022, challenges remain in IPAS learning. These include the need for more interactive and varied teaching methods to integrate natural and social science concepts, as well as limited instructional facilities. Therefore, this study aims to analyze the implementation of the Merdeka Curriculum in Grade 4 IPAS, providing recommendations for effective adaptation and

supporting the school's vision of producing knowledgeable, skilled, and character-driven students [13].

Methods

This study employed a qualitative descriptive approach using field research methods. Qualitative research aims to understand social phenomena from participants' perspectives. The research was conducted in the 2025/2026 academic year at SDN Wailiti, located on Jalan Diponegoro, Alok Barat District, Sikka Regency, East Nusa Tenggara Province. Participants included the principal, Grade 4 homeroom teachers, and ten Grade 4 students. Purposive sampling was used because Grade 4 students had prior experience with the Merdeka Curriculum since Grade 3, placing them at a stage suitable for deepening and strengthening their understanding.



Fig. 1. The Location of the Boarding School (https://maps.app.goo.gl/q9TuVuczgBhNRSyA7)

Data were collected through observations, interviews, and documentation. Observations focused on classroom interactions, teaching methods, and learning activities. Interviews involved teachers, principals, and students to explore perceptions and experiences regarding curriculum implementation. Documentation included teaching plans, modules, and student work. Data analysis followed the Miles and Huberman model, consisting of data collection, reduction, display, and conclusion drawing. Triangulation of sources was used to ensure data validity by comparing information obtained from observations, interviews, and documentation.

Results

The findings from observations, interviews, and documentation indicate that the Merdeka Curriculum provides teachers with flexibility to adapt learning materials to students' needs, promoting active and meaningful learning in line with national education objectives. Students reported that Integrated Science and Social Studies (IPAS) lessons were more

enjoyable, as learning extended beyond textbooks to include direct experiences, discussions, and project-based activities.

IPAS lessons were conducted face-to-face and student-centered, beginning with literacy and numeracy activities, followed by the opening, core, and closing segments. During the opening activities, teachers guided students through initial engagement tasks to stimulate interest and prior knowledge (Fig. 2).



Fig. 2. Opening Activity

In the core segment, teachers employed interactive media such as PowerPoint and implemented diverse instructional strategies, including lectures, question-and-answer sessions, collaborative group discussions, and student presentations of discussion outcomes (Fig. 3). These approaches fostered active participation, improved understanding, encouraged interaction, and supported more engaging, student-centered, and meaningful learning experiences overall.



Fig. 3. Core Activity

Students actively participated in these activities, demonstrating high levels of engagement, particularly during discussions and collaborative projects that encouraged teamwork, communication, and critical thinking. The closing activities emphasized reflection, feedback, and reinforcement of key learning outcomes, enabling students to consolidate their

understanding, evaluate their progress, and strengthen overall retention of essential concepts (Fig. 4).



Fig. 4. Closing Activity

Project-Based Learning aligned with the Pancasila Student Profile (PSP) was implemented under the theme of "Sustainable Lifestyles," in which students planted vegetable seedlings to understand environmental responsibility and sustainable habits (Fig. 5).



Fig. 5. Planting Seedlings

Learning activities were complemented by diagnostic assessments to evaluate prior knowledge and formative assessments to monitor progress, including discussion, reflection, and practice exercises. Although summative assessments were not observed during this study, they were scheduled according to the school's plan.

Interviews with principals and teachers confirmed that the Merdeka Curriculum encouraged reflective, process-oriented learning. Students reported increased confidence due to clear explanations and teacher support. However, challenges remained, such as teachers' difficulty understanding learning achievement targets, designing learning sequences, and limited instructional media. To overcome these, teachers engaged in professional development, collaborative planning, and utilized alternative digital resources while optimizing BOS funding for learning tools. Inquiry- and project-based methods enhanced student engagement, while

students reinforced learning through discussion, attentive listening, and independent exploration (Fig. 6).



Fig. 6. Learning and Note-Taking

Discussion

A. Implementation of the Merdeka Curriculum

The implementation of the Merdeka Curriculum in Grade 4 IPAS at SDN Wailiti demonstrated that this curriculum provides teachers with flexibility to adjust learning materials according to students' needs and abilities, emphasizing active and meaningful learning. This aligns with previous studies indicating that the Merdeka Curriculum encourages teachers to adapt instruction while promoting student engagement and reflective learning [14]. As highlighted by Nadiem Makarim, Minister of Education and Culture of Indonesia (2019–2024), the curriculum is designed to allow flexible, student-centered learning [15]. The goals of implementing the Merdeka Curriculum at SDN Wailiti correspond to national education objectives, aiming to educate the nation's children through adaptive primary education [16]. School readiness involved workshops, webinars, and socialization sessions for teachers and principals provided by the Education Office, supporting effective curriculum implementation [17]. Implementation followed a phased approach starting with Grades 1 and 4, then 2 and 5, and finally 3 and 6, ensuring schools' and teachers' preparedness [18].

1. Planning

   Teachers initiated the curriculum by developing teaching modules and learning sequences (ATP) aligned with intended learning outcomes [19]. Principals supported this process by organizing professional development programs and establishing teacher learning communities such as 'Sahabat Cerdas' to facilitate knowledge sharing and collaborative planning [20].

2. Implementation

Learning activities in IPAS included observation, writing, discovery, discussion, and project-based tasks, fostering critical thinking [21]. Teachers utilized interactive methods, including PowerPoint presentations, group discussions, and student-led presentations, supported by literacy and numeracy activities and the PSP project [22].

3. Evaluation

Teachers conducted diagnostic assessments to measure initial understanding and formative assessments to monitor ongoing learning, while summative assessments were scheduled according to the learning timeline [23]. Regular curriculum evaluations every one to two months allowed identification of challenges and continuous improvement [24].

B. Challenges in Implementing the Merdeka Curriculum in Grade 4 IPAS

Teachers experienced difficulties understanding learning achievement targets, developing ATP, and preparing teaching modules, partly due to differences from the previous curriculum [25]. Limited instructional media and textbooks posed additional challenges, requiring teachers to seek alternative learning resources [26]. The interdisciplinary nature of IPAS necessitated interactive and diverse teaching methods to ensure meaningful learning [27]. Students sometimes struggled with new concepts and had limited concentration despite engaging materials [28,29], highlighting the need for more contextualized, hands-on learning experiences.

C. Strategies to Overcome Challenges

Efforts to address these challenges included regular training and workshops in collaboration with the Education Office, fostering teacher competency in curriculum implementation [30]. Teachers engaged in collaborative module development and leveraged digital platforms for alternative learning resources [31]. Optimization of government funds supported the procurement of interactive learning tools [32]. Project- and inquiry-based learning strategies encouraged student participation, independence, and deeper exploration of material [33]. The use of digital resources further enhanced learning effectiveness and relevance in accordance with the Merdeka Curriculum principles [34].

Conclusion

The implementation of the Merdeka Curriculum in Grade 4 IPAS demonstrates that flexible, student-centered approaches can enhance student engagement, learning outcomes, and holistic development. Teachers successfully employed interactive methods, project-based learning, and integrated literacy and numeracy activities, supporting the PSP. However, challenges remain, including understanding learning outcomes, limited instructional resources, and students' difficulty in grasping new concepts. Effective strategies such as

professional development, collaborative module design, digital learning resources, and inquiry- and project-based approaches proved essential in addressing these challenges. Overall, the study underscores that ongoing teacher support, adaptive pedagogy, and resource optimization are critical for achieving the goals of the Merdeka Curriculum, fostering students' academic, practical, and character competencies in line with national education objectives.

Conflict of Interest

The authors declare no conflict of interest.

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