

Implementation of Merdeka Curriculum-Based Science and Social Studies Learning: Barriers and Solution Teacher Strategies

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Abstract

This study investigates the challenges and strategies in implementing Science and Social Studies (IPAS) learning within the Merdeka Curriculum at SDN 047 Tandung. Using a qualitative descriptive approach, this study collected data through interviews with IPAS teachers at SDN 047 Tandung. The data were analyzed using qualitative descriptive analysis. The findings reveal that IPAS learning was implemented through preliminary, core, and closing activities, with lectures combined with practical activities to enhance student engagement and learning interest. The main obstacles identified were limited funding for practicum activities, disparities in students' learning abilities and readiness, and difficulties in applying project-based learning effectively. To address these challenges, teachers utilized simple learning media from the surrounding environment, integrated technology such as projectors, and applied more personalized approaches to students. These findings contribute to understanding practical strategies for strengthening the implementation of the Merdeka Curriculum in elementary-level IPAS learning, particularly in schools with limited educational resources.

Kata Kunci:

Kurikulum Merdeka; Tantangan Guru; Pembelajaran yang Berpusat pada Siswa; Studi Kasus Kualitatif; Pendidikan Dasar

Abstrak

Penelitian ini menyelidiki tantangan dan strategi dalam menerapkan Pembelajaran IPAS dalam Kurikulum Merdeka di SDN 047 Tandung. Dengan menggunakan pendekatan deskriptif kualitatif, penelitian ini mengumpulkan data melalui wawancara dengan guru IPAS di SDN 047 Tandung. Data dianalisis menggunakan analisis deskriptif kualitatif. Temuan tersebut mengungkapkan bahwa pembelajaran IPAS dilaksanakan melalui kegiatan pendahuluan, inti, dan penutup, dengan perkuliahan yang dikombinasikan dengan kegiatan praktis untuk meningkatkan keterlibatan dan minat belajar siswa. Kendala utama yang diidentifikasi adalah keterbatasan pendanaan untuk kegiatan praktikum, kesenjangan kemampuan belajar dan kesiapan siswa, serta kesulitan dalam menerapkan pembelajaran berbasis proyek secara efektif. Untuk mengatasi tantangan tersebut, guru memanfaatkan media pembelajaran sederhana dari lingkungan sekitar, mengintegrasikan teknologi seperti proyektor, dan menerapkan pendekatan yang lebih personal kepada siswa. Temuan ini berkontribusi dalam memahami strategi praktis untuk memperkuat implementasi Kurikulum Merdeka dalam pembelajaran IPAS tingkat dasar, khususnya di sekolah dengan sumber daya pendidikan yang terbatas.

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INTRODUCTION

The Merdeka Curriculum is an education policy designed to provide flexibility to educational units and teachers in developing student-centred learning, in accordance with their interests, talents, and learning needs (Alimuddin, 2023). This curriculum emphasises meaningful, contextual learning and encourages student activity in the learning process (Septiani, 2023). Educational curricula are constantly being updated to meet the challenges of changing times (Rahayu et al., 2022). This is because the curriculum is an aspect that influences the improvement of students' work readiness in facing digitalisation in the era of the Industrial Revolution 4.0 (Pulungan, 2025). The educational curriculum in Indonesia has undergone updates, starting from the 1947 curriculum to the Merdeka Curriculum (Mu'aziyah, 2023).

The Merdeka Curriculum provides freedom in the implementation of learning by placing students at the centre of learning activities (Rohmah, 2024). Teachers and schools have the flexibility to adapt learning to the needs and characteristics of students, while encouraging the development of creativity and independent learning (Haq, 2025). One of the programmes launched under the Merdeka Belajar policy is the School Movement Programme, which aims to help schools shape a generation of lifelong learners with the character of Pancasila Students (Wanti, 2023).

The Merdeka Curriculum provides more space for teachers and students to explore learning, with teachers acting as mentors and facilitators (Kusumawati, 2025). This curriculum focuses on essential material and the development of student competencies in accordance with their stage of development, so that the learning process is more in-depth, meaningful, enjoyable, and unhurried (Iqbal et al., 2024). Learning in the Merdeka Curriculum emphasises a differentiated approach, allowing students to learn material according to their abilities and interests and to process ideas and information in their own learning styles (Alimuddin, 2023). Based on initial interviews with IPAS teachers in SDN 047 Tandung, the lecture method combined with practice is the most frequently used method because it is considered effective in increasing student activity and interest in learning.

However, various problems were still encountered during implementation. The interview results showed that budget constraints were one of the main obstacles to implementing IPAS learning practices. Differences in students' abilities and readiness to learn also posed a challenge for teachers in delivering the material evenly. Teachers also said that the implementation of project-based learning required more optimal planning and classroom management. This condition is in line with Mabsutsah et al., (2023), which states that the implementation of the new curriculum often faces obstacles in terms of facilities, student readiness, and teacher competence.

Previous studies have shown that the implementation of the Merdeka Curriculum can increase student engagement and learning independence when supported by appropriate learning strategies and adequate educational facilities (Rahayu et al., 2022, Ainissyifa et al., 2024). However, several studies also indicate that teachers still encounter obstacles related to limited infrastructure, insufficient understanding of differentiated learning, and difficulties in implementing project-based

learning effectively (Iqbal et al., 2024, Whibawa et al., 2025). Although research on the implementation of the Merdeka Curriculum has been widely conducted, most studies focus on general curriculum implementation and have not specifically examined how IPAS learning is implemented in elementary schools with limited educational resources. Furthermore, there is still limited research exploring teachers' practical experiences, barriers, and adaptive strategies in implementing IPAS learning within geographically specific school contexts. This condition demonstrates a research gap that requires further investigation. The purposes of this article are to describe the implementation of IPAS learning, identify the obstacles faced by teachers, and explain the solutions implemented based on the results of interviews with IPAS teachers at SDN 047 Tandung.

METHOD

This study employed a qualitative descriptive approach to explore the implementation of the Merdeka Curriculum in Science and Social Studies (IPAS) learning at SDN 047 Tandung, Tinambung District, Polewali Mandar Regency, West Sulawesi Province. A qualitative approach was selected because the study aimed to obtain an in-depth understanding of teachers' experiences, challenges, and strategies in implementing IPAS learning rather than measuring phenomena quantitatively (Sugiyono, 2013). SDN 047 Tandung was selected as the research site because the school has implemented the Merdeka Curriculum in IPAS learning while facing several limitations related to facilities, learning media, and funding for practical activities.

The participants consisted of three IPAS teachers from grades 4, 5, and 6 who were selected through purposive sampling. The informants were chosen because they were directly involved in implementing the Merdeka Curriculum and had experience teaching IPAS subjects in their respective classes. The selection of three informants was considered sufficient because the data obtained had reached saturation, as similar responses and recurring themes emerged during the interview process.

Data were collected through semi-structured interviews and documentation. The interview guidelines were developed based on the research objectives and validated through expert review to ensure the relevance and clarity of the questions. The interviews focused on the implementation of IPAS learning, the obstacles encountered by teachers, and the strategies used to overcome these challenges. Each interview lasted approximately 30–45 minutes and was documented through audio recordings and field notes. In addition, documentation in the form of learning tools and teaching materials was used to support the interview data. Prior to the data collection process, informed consent was obtained from all participants, and permission to conduct the research was formally granted by the school.

To ensure the credibility and trustworthiness of the findings, this study applied triangulation, member checking, and peer debriefing techniques. The data analysis process consisting of data reduction, data display, and conclusion drawing (Nisa et al., 2026). In the data reduction stage, the researcher selected, summarized, and focused on the most relevant information obtained from interviews and documentation. The reduced data were then organized and presented in the form of descriptive narratives to facilitate interpretation. Finally, conclusions were drawn by identifying recurring patterns, categories, and themes related to the implementation

of the Merdeka Curriculum in IPAS learning. This systematic analysis process enabled the researcher to generate meaningful interpretations and comprehensive findings.

RESULTS AND DISCUSSION

RESULT

Implementation of IPAS Learning Based on the Merdeka Curriculum

The findings showed that the implementation of IPAS learning based on the Merdeka Curriculum at SDN 047 Tandung had been initiated, although it had not yet been fully optimized. Teachers attempted to apply student-centered learning by combining lecture methods with practical activities related to environmental and plant materials. Learning activities generally consisted of introductory activities, apperception, core learning activities, exercises, evaluations, and follow-up activities.

Teachers grades 4: *“We combine explanations with practical activities so that students are more active and can directly understand the material being studied.”* Practical activities were adjusted to the availability of materials and the surrounding school environment. Teachers also utilized the social and natural environment around the school as contextual learning resources. Students were reported to show greater enthusiasm and participation during practical learning activities.

Teachers grades 6 stated: *“Students are more enthusiastic when learning is carried out through direct practice because they can observe and experience the learning material themselves.”* In the assessment process, teachers conducted formative assessments through classroom observations, quizzes, and written assessments to identify students’ levels of understanding after learning activities. However, the implementation of differentiated learning and project-based learning had not yet been carried out optimally because teachers still experienced difficulties in developing teaching modules and adapting learning strategies to students’ different characteristics and learning needs.

Based on interviews with IPAS teachers at SDN 047 Tandung, IPAS learning is carried out by combining lecture and practical methods. Teachers explained that learning does not only focus on verbal delivery of material, but is also interspersed with practical activities, especially for material related to the environment and plants. Practical activities are adjusted to the availability of materials and school environmental conditions. The steps of social studies learning carried out by teachers include introductory activities, apperception, core activities, exercises, evaluation, and follow-up.

Barriers in Implementing IPAS Learning

The interview results revealed several obstacles faced by teachers in implementing IPAS learning based on the Merdeka Curriculum. The primary obstacle was limited facilities and infrastructure, including the lack of digital learning media, internet access, and technological devices to support interactive learning. Consequently, teachers relied more heavily on textbooks and conventional teaching methods.

Teachers grades 5 *“The limited facilities make it difficult for us to use technology-based learning media consistently in the classroom.”* Another obstacle identified was limited funding for practical and project-based activities. Teachers explained that the available school budget was often insufficient to support learning activities requiring materials and equipment.

In addition, differences in students’ abilities, interests, and learning styles created challenges in implementing differentiated learning. Teachers found it difficult to design varied learning activities that could accommodate all students’ needs within the limited learning time available. As

a result, project-based learning, which is one of the important characteristics of the Merdeka Curriculum, had not been implemented comprehensively.

The results of the study indicate that the implementation of IPAS learning based on the Merdeka Curriculum at SDN 047 Tandung has begun, but its implementation has not yet been optimal. Teachers have made efforts to adapt learning to the requirements of the Merdeka Curriculum, such as encouraging students to be more active and relating the material to everyday life. However, in practice, learning still tends to be teacher-centred due to limitations in understanding how to develop teaching modules, implement differentiated learning, and carry out formative assessments in line with the characteristics of the Merdeka Curriculum. This has prevented the full realisation of the potential of IPAS learning, which should be contextual, flexible, and character-building.

In addition, limited facilities and infrastructure are a major obstacle to developing innovative IPAS learning. Supporting facilities such as digital learning media, internet access, and learning technology devices are still limited, so teachers have not been able to maximise the use of interactive media. As a result, learning relies more on textbooks and conventional methods. This condition is also exacerbated by the lack of IPAS teaching materials that are contextual and relevant to the environment around SDN 047 Tandung, so that learning has not fully linked IPAS concepts with the social, cultural, and economic realities of the local community.

Another obstacle is the diversity of student characteristics. Differences in students' abilities, interests, and learning styles make it difficult for teachers to implement differentiated learning to the fullest extent. Teachers still find it difficult to design a variety of tasks and learning strategies that can accommodate all students' learning needs. Coupled with the limited allocation of time for IPAS learning, the implementation of project-based learning as one of the main features of the Merdeka Curriculum has not been optimally and thoroughly implemented.

Teachers Solutions in Overcoming Learning Obstacles

Despite these challenges, teachers continued to develop various strategies to support the implementation of IPAS learning. Teachers improved their competencies through participation in workshops, training programs, and teacher working group discussions. They also utilized simple and easily accessible learning media, such as pictures, posters, maps, and materials from the surrounding environment.

Teachers grades 4 “*We try to use simple media from the surrounding environment so that learning can continue even with limited facilities.*” Teachers also gradually implemented differentiated learning by grouping students according to their abilities and assigning tasks with different levels of difficulty. Small-scale projects, such as environmental observations, poster creation, and group discussions, were introduced to encourage active student participation.

Teachers grades 5 “*Although the projects are still simple, students become more active and interested in participating in the learning activities.*” These findings indicate that teachers demonstrated adaptability and creativity in implementing the Merdeka Curriculum despite various limitations in resources and infrastructure.

Nevertheless, teachers have been trying to find solutions to overcome these obstacles. Teachers' competencies have been improved through participation in training, workshops, and discussions in teacher working groups. Teachers have also begun to develop their creativity by utilising simple media such as pictures, maps, posters, and the school's surroundings as learning

resources. The social and natural environment around SDN 047 Tandung is used as contextual learning material so that students can more easily understand social studies material and directly feel its relevance to their daily lives.

Efforts to implement differentiated learning have also begun to be carried out gradually by grouping students based on their abilities and giving them tasks with varying levels of difficulty. In addition, teachers have begun to implement small-scale projects, such as observing the school environment, creating posters about social issues, and holding simple group discussions. These steps demonstrate the teachers' commitment to realising more active, meaningful, and learner-centred IPAS learning in accordance with the principles of the Merdeka Curriculum, although stronger support is still needed in terms of facilities, time, and teacher professional development. The teacher assessed that the practical method was the most effective method because it was able to increase student engagement.

Students showed positive and enthusiastic responses when they were directly involved in practical activities, making learning more meaningful. In terms of assessment, the teacher used formative assessment through process observation, quizzes, and written assessments. Assessments were carried out immediately after learning to determine the level of student understanding.

DISCUSSION

Implementation of IPAS Learning Based on the Merdeka Curriculum at SDN 047 Tandung Based on interviews with class teachers at SDN 047 Tandung, IPAS learning is carried out by combining lecture and practical methods. Teachers explained that learning does not only focus on verbal delivery of material, but is also interspersed with practical activities, especially for material related to the environment and plants. Practical activities are adapted to the availability of materials and school environmental conditions. The steps taken by teachers in IPAS learning include introductory activities, apperception, core activities, exercises, evaluation, and follow-up. Teachers consider the practical method to be the most effective because it increases student engagement. Students showed positive and enthusiastic responses when directly involved in practical activities, making learning more meaningful.

In terms of assessment, teachers use formative assessment through process observation, quizzes, and written assessments (Haq, 2018). Assessment is carried out immediately after learning to determine the level of student understanding (Haq, 2023). According to the Merdeka Curriculum, IPAS learning should be student-centred and activity-based, encouraging students to actively observe, question, explore, and reflect on their learning. The findings indicate that teachers have implemented activity-based learning through direct practice, particularly in materials that allow for exploratory activities.

However, learning still quite often begins with lectures as an introduction to the material. This shows that the implementation of IPAS learning at SDN 047 Tandung has moved towards the principles of the Merdeka Curriculum, although it has not completely abandoned the conventional learning approach. This condition is in line with the opinion that the transition from the previous curriculum to the Merdeka Curriculum requires gradual adaptation by teachers (Fadila et al., 2025). **Teacher Barriers in Merdeka Curriculum-Based IPAS Learning** The interview results showed that the main barrier in the implementation of IPAS learning was the limited funds for practical activities.

Teachers stated that IPAS learning requires costs, especially for the production of media and practical tools. In addition, there are differences in the abilities and readiness of students to learn (Hayat et al., 2023). Some students are quick learners, while others require more intensive guidance. However, the teacher does not consider the differences in students' abilities to be a major obstacle, but rather a challenge that must be faced in the learning process. In the Merdeka Curriculum, teachers are required to be able to accommodate differences in students' characteristics and abilities through differentiated learning.

Teachers are encouraged to develop project-based activities that reinforce the Pancasila Student Profile, utilising the local environment and various teaching media so that IPAS material is directly connected to the reality of students' daily lives, making learning more contextual and relevant (Azzahra et al., 2023). The research findings indicate that differences in student abilities do occur in IPAS learning at SDN 047 Tandung, as explained in the theory of differentiated learning. In addition, limited funds are one of the factors affecting the optimisation of practice-based learning. This is in line with previous research findings which state that limited facilities and infrastructure are often an obstacle to the implementation of activity-based learning in primary schools (Ariswari et al., 2024). Thus, the obstacles faced by teachers in IPAS learning are not only pedagogical, but also technical and structural.

Teachers' Solutions in Overcoming IPAS Learning Obstacles To overcome these obstacles, teachers have made several efforts, including using personal funds from certification allowances to support practical activities. In addition, teachers use simple learning media made from easily found materials, such as cardboard, plants in the school environment, and visual media through projectors. Teachers also take a personalised approach to students who experience learning difficulties. This approach is taken so that students feel cared for and motivated to participate in learning. In the long term, teachers hope to continue improving their competence through training and workshops related to the implementation of the Merdeka Curriculum. The solutions implemented by teachers are in line with the principles of the Merdeka Curriculum, which emphasises the creativity of teachers in utilising learning resources in the school environment. The use of concrete media and the environment as learning resources can improve students' understanding of IPAS concepts.

The personalised approach taken by teachers is also in line with the principle of learner-centred learning, in which teachers act as facilitators and learning companions. In addition, participating in training and workshops is a strategic step towards improving teachers' understanding of the Merdeka Curriculum, as recommended by the Ministry of Education, Culture, Research and Technology.

CONCLUSIONS AND SUGGESTIONS

The findings indicate that the implementation of Merdeka Curriculum-based IPAS learning at SDN 047 Tandung has generally reflected student-centered and activity-based learning principles through the combination of lectures and practical activities. Practical learning activities were found to increase students, engagement and learning interest, particularly in environmental and plant-related materials. However, the implementation process still faces several challenges, including limited funding for practicum activities, differences in students' learning readiness and abilities, and difficulties in applying project-based learning effectively. To address these challenges, teachers

adopted adaptive strategies by utilizing simple learning media from the surrounding environment, integrating technology into learning, and applying more personalized approaches to students. These findings demonstrate that teachers' creativity and adaptability play an important role in supporting the successful implementation of the Merdeka Curriculum in elementary school IPAS learning.

This study contributes to the understanding of practical challenges and contextual solutions in implementing the Merdeka Curriculum, particularly in schools with limited resources. Nevertheless, this study has several limitations, including the limited number of informants from a single school, the absence of direct classroom observations, reliance on teachers' self-reported data, and the highly specific geographical context of the research setting. Therefore, future studies are recommended to involve a larger number of participants from different schools and regions, incorporate classroom observations, and explore students' perspectives to obtain a more comprehensive understanding of the implementation of IPAS learning within the Merdeka Curriculum.

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