



Innovation in the Development of the IPAS Curriculum for Grade 4 at MI Sudirman Ceplukan

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ABSTRACT

Curriculum development innovation is key to creating relevant and contextual learning at the Madrasah Ibtidaiyah (MI) level. This study aims to identify and analyze the implementation of curriculum development innovation in Natural and Social Sciences (IPAS) at MI Sudirman Ceplukan in grade 4 in the first semester of the 2024/2025 academic year. The research used a descriptive qualitative method with interviews with 3 teachers and 3 students as the main respondents and curriculum document analysis. The results showed that the innovations included an integrative thematic approach, the application of scientific methods, and the use of simple digital media. The implementation of these innovations has had a positive impact on student engagement in learning. This study is expected to be a reference for future MI curriculum development.

Keywords:

Curriculum Innovation, IPAS, Scientific Approach, Thematic Learning, MI.

Introduction

The education curriculum in Indonesia continues to undergo adjustments in response to the dynamics of science and technology development and the characteristics of 21st-century students. One form of this renewal is the inclusion of Natural and Social Sciences (IPAS) in the Merdeka Curriculum as a combination of science and social studies disciplines. This integration is designed to equip students with analytical and critical thinking skills, as well as a comprehensive understanding of the relationship between humans, nature, and their social environment (Kemendikbud, 2021; Suryadi, 2022).

The Merdeka Curriculum emphasizes project-based learning, the use of technology, and the relevance of the material to the real-life experiences of students. This is in line with Fullan's (2011) view that educational innovation is not limited to changes in curriculum content but also includes the transformation of learning strategies, the use of technology, and increased student participation. Based on this, MI Sudirman Ceplukan strives to develop the IPAS curriculum through the application of an integrative and scientific thematic approach supported by the use of simple digital media.

The curriculum plays a central role in determining the quality of the learning process and outcomes. At the Madrasah Ibtidaiyah level, the curriculum not only serves as an academic guideline but also as a means of internalizing Islamic values and developing students' character in accordance with the demands of the times (Permendikbud, 2016; Muhaimin, 2020). IPAS as an integrated subject of Science and Technology () is aimed at fostering students' holistic understanding of natural and social phenomena in an integrated and meaningful way (Widodo & Kadarwati, 2021).



Curriculum innovation is an urgent need in efforts to improve the quality of basic education. Fullan (2011) emphasizes that curriculum innovation must be accompanied by changes in learning practices so that educational goals can be achieved optimally. In the madrasah environment, such innovation is required to maintain a balance between mastery of knowledge, 21st-century skills, and the strengthening of Islamic values (Zainuddin, 2019).

The integrative thematic approach allows students to learn various concepts across subjects in a single interconnected theme (Permendikbud, 2016). Meanwhile, the scientific approach, which includes observing, questioning, trying, reasoning, and communicating, is considered effective in developing the scientific thinking skills of elementary school students (Hosnan, 2014; Kurniasih & Sani, 2021). A number of studies show that the use of simple digital media, such as learning videos and interactive presentations, contributes to increased student motivation and learning participation (Lestari, 2020; Putri et al., 2023).

Based on preliminary observations in the 4th grade of MI Sudirman Ceplukan in the first semester of the 2024/2025 academic year, several problems were found in the implementation of IPAS learning. Teachers still tend to use lectures and textbooks as the main sources of learning, while the use of digital media has not been optimized. In addition, the integration between science and social studies material has not been fully realized, so that learning is still carried out partially. Students appear passive, are not very involved in discussion activities, and are not yet accustomed to conducting simple investigations in accordance with the scientific approach.

These observations indicate a gap between the demands of the Merdeka Curriculum and the practice of IPAS learning in the field. Teachers' limited competence in designing innovative learning and the minimal use of learning media are factors that reinforce the urgency of this research (Suharyadi, 2020; Rahmawati & Nugroho, 2022).

Based on this explanation, this study is important to conduct an in-depth assessment of the IPAS curriculum innovation implemented at MI Sudirman Ceplukan. This study aims to describe the form of IPAS curriculum innovation in grade 4 at MI Sudirman Ceplukan in the first semester of the 2024/2025 academic year and analyze its impact on the learning process, particularly in increasing student activity and the quality of IPAS learning.

Methods

This study uses a descriptive qualitative approach that aims to describe in depth the process of IPAS curriculum development innovation and its impact on learning. The qualitative approach was chosen because it is able to provide a contextual and holistic understanding of the phenomenon being studied through direct interaction with the research subjects (Creswell, 2016). Meanwhile, the descriptive nature was used to present the research findings systematically without manipulating the variables (Sugiyono, 2018).

Data collection was conducted through semi-structured interviews with three fourth-grade IPAS teachers and three students. Semi-structured interviews allowed researchers to explore information flexibly while still referring to the prepared question guidelines (Patton, 2015). This technique was used to understand teachers' perceptions of curriculum innovation, the implementation process, and the obstacles they faced in the field.



Document analysis was conducted on the Lesson Plan (RPP), teaching modules, and other supporting documents used in learning. This analysis aimed to identify how the principles of curriculum innovation were applied in learning tools (Bowen, 2009). Documents were chosen because they could provide objective evidence regarding the planning and design of the curriculum implemented by teachers.

Passive participatory observation was conducted to observe the IPAS learning process directly. Through observation, researchers could observe the implementation of curriculum innovation, the use of digital media, teacher-student interactions, and the level of student engagement during learning (Spradley, 1980). This field observation formed the basis for triangulation with interview data and document analysis.

Results and Discussions

Interviews were conducted with three teachers who taught IPAS subjects in grade 4 at MI Sudirman Ceplukan to obtain their views on the curriculum innovations that were implemented. The following are the interview results that describe the impact of these innovations.

The results of the interviews with the teachers showed that the IPAS curriculum development innovations had a positive impact on the learning process in grade 4 at MI Sudirman Ceplukan. Teacher 1 explained that the application of an integrative thematic approach enabled students to see the connections between concepts more comprehensively. When discussing the theme "Environment and Sustainability," for example, students learn about ecosystems from a science perspective while also understanding the impact of human activities on the environment from a social studies perspective. This approach is considered successful in increasing the relevance of the material and making students more enthusiastic about learning. Teacher 1 also emphasized that the use of digital media, such as animated videos and interactive quiz applications, helps students understand difficult concepts and makes the learning atmosphere more interesting and enjoyable.

Teacher 2 added that the scientific method provides opportunities for students to play an active role as little researchers. In learning about the water cycle, students conduct simple experiments to observe the processes of evaporation and condensation. According to him, this hands-on experience makes it easier for students to remember the concepts taught. Teacher 2 also assessed that project-based learning is able to train students' creativity, independence, and collaboration skills. When working on a poster project about sustainability, students not only understand the material theoretically, but can also relate it to real actions they can take in their daily lives.

Meanwhile, Teacher 3 highlighted the importance of classroom management in implementing curriculum innovation. He said that integrating themes and applying scientific methods requires teachers to organize the learning process well. The main challenge he faces is related to differences in students' abilities to absorb the material, especially when using digital media. However, the use of simulations, videos, and digital worksheets helps teachers tailor learning to students' needs. Teacher 3 also believes that curriculum innovation motivates teachers to continue to be creative in designing learning methods and media so that the learning process becomes more varied and engaging.

From the students' perspective, the innovative learning applied by teachers provides a more interesting and easier-to-understand learning experience. Student A said that animated videos were very helpful in understanding concepts such as the food chain and water cycle, making him more interested in following the lessons. Student B said that experiments were his favorite part of learning because they



allowed him to actually see the scientific process firsthand. He also enjoyed group work in the poster-making project because he could discuss and collaborate with his friends. Meanwhile, Student C felt that the integration of themes made the lessons more meaningful. He admitted that he better understood the importance of protecting the environment after studying the material from the perspectives of science and social studies simultaneously. In addition, the project presentation activity made him more confident in speaking in front of the class.

In this study, MI Sudirman Ceplukan has implemented a number of innovations in the development of the Natural and Social Sciences (IPAS) curriculum in grade 4. These innovations include a more interactive learning approach, the use of digital media, and more contextual integration of material. The following are details of the innovations that have been implemented.

Integrative Thematic Approach

One of the innovations implemented is an integrative thematic approach that connects various concepts from natural and social sciences in one major theme. For example, in the theme "Environment and Sustainability," IPAS material covers knowledge about ecosystems, the water cycle, and the impact of human activities on nature. Teachers integrate various relevant subjects, such as science, social studies, and Indonesian language, so that learning becomes more holistic and meaningful for students.

This approach also supports the development of students' critical thinking skills. They do not only learn the material separately, but also learn how various concepts are interrelated and affect their daily lives. Teachers also provide opportunities for students to see real problems, such as plastic pollution in their environment, and encourage them to think about possible solutions.

Scientific Methods in Learning

In order to support the thematic approach, teachers also implement the scientific method, which involves five main steps: observing, questioning, experimenting, reasoning, and communicating. Each lesson begins with an observation activity that focuses students' attention on natural phenomena around them, such as the water cycle or the ecosystem in the school environment.

This method not only teaches students scientific concepts, but also helps them develop practical skills, such as observation and experimentation. For example, in learning about the water cycle, students conduct simple experiments using plastic bottles to illustrate the processes of evaporation and condensation. In addition, they are given the task of writing scientific questions based on their observations, which are then answered through further experimentation or research.

Use of Digital Media and Learning Technology

Digital learning media, such as educational videos, PowerPoint presentations, and interactive quiz applications, are used to enrich the learning process. These media serve to explain abstract concepts that are difficult to understand through verbal explanations alone. For example, videos showing the movement of water in the hydrological cycle or animations of the food chain help students better understand the processes that occur in nature.



Teachers also use interactive quiz applications to evaluate students' understanding in a more enjoyable and in-depth manner. These quizzes not only provide quick feedback, but also encourage students to be more actively involved in learning and motivate them to study better.

Collaborative Projects and Problem-Based Learning

Another key innovation is the implementation of problem-based learning through collaborative projects. Each theme ends with a group project, where students work together to produce a product that demonstrates their understanding of the material. These projects also train social and collaboration skills, as students learn to work together in groups, share ideas, and solve problems together.

In the theme "Environment and Sustainability," students were asked to make posters or miniature models of ecosystems using recycled materials. This project taught them about the importance of environmental conservation while fostering their creativity in solving real problems.

Interviews with teachers and students provided an in-depth picture of the implementation of the IPAS curriculum innovation at MI Sudirman Ceplukan. Teachers said that the application of an integrative thematic approach and scientific methods encouraged student activity in the learning process. These findings are in line with Sani's (2019) opinion that integrated learning encourages student cognitive engagement by linking various concepts within a single theme. However, some teachers admitted that they still had difficulties in managing time allocation so that all stages of the scientific approach could be implemented optimally. Similar obstacles were also found in the research by Prasetyo and Widodo (2022), which stated that the application of the scientific approach in elementary schools was often constrained by time limitations and teachers' pedagogical readiness.

The use of simple digital media, such as educational videos and interactive quiz applications, is seen by teachers as an effective strategy to increase students' interest in learning. This reinforces Mayer's (2020) findings, which emphasize that presenting material through a combination of visual and verbal means can help students better understand abstract concepts. However, technological limitations encourage teachers to be creative in adapting their presentation of material. This is in line with the findings of Hidayati et al. (2021), who concluded that learning innovation in elementary schools is greatly influenced by teachers' ability to manage available resources.

From the students' perspective, interviews showed that IPAS learning was perceived as more interesting and easier to understand through observation activities, group discussions, simple experiments, and collaborative projects. The active involvement of students in these activities supports the constructivist learning theory, which emphasizes the role of students as active subjects in constructing knowledge (Slavin, 2020). However, some students said that understanding science and social studies concepts was still difficult without concrete examples or adequate visualizations. This finding is in line with research by Lestari and Nugroho (2021), which emphasizes the importance of using visual media to help elementary school students understand integrated science and social studies concepts.

Class observations showed an increase in student activity in discussions and group work during IPAS learning. Theme-based projects were proven to help students develop problem-solving and cooperation skills. This finding reinforces the results of Bell's (2019) research, which states that project-based learning can improve the collaborative and critical thinking skills of elementary school students. During the planning stage, teachers and the curriculum team mapped out the semester's learning



outcomes by integrating elements of science and social studies, as recommended in integrated curriculum development (Majid, 2017).

The process of developing theme-based learning tools following the scientific approach reflects the school's systematic efforts to implement curriculum innovation. The steps of observing, questioning, trying, reasoning, and communicating have been proven to encourage students to actively engage in learning, as stated by Hosnan (2014). The support of digital media and concrete media used by teachers also enriches students' learning experiences, which, according to research by Putri et al. (2023), has a positive effect on the conceptual understanding of elementary school students.

The implementation of learning over one semester showed that initial observation activities, guided discussions, simple experiments, and collaborative projects were able to create a participatory learning atmosphere. Project activities such as making posters and miniature ecosystems from recycled materials not only train students' understanding of the material but also develop their creativity and communication skills. These findings are in line with the results of research by Wahyuni and Anwar (2020), which states that project-based learning in IPAS can improve students' communication skills and concern for the environment.

Continuous learning evaluation through interactive quizzes, project assessments, and class reflections shows that IPAS curriculum innovation has a positive impact on students' learning processes and outcomes. The authentic assessment applied by teachers is in line with the recommendations of Arifin's (2021) research, which emphasizes the importance of diverse evaluations to obtain a comprehensive picture of students' learning development. Thus, the results of this study indicate that the innovation in the development of the IPAS curriculum at MI Sudirman Ceplukan is capable of creating collaborative and meaningful learning, although it is still necessary to strengthen teacher competencies and provide supporting facilities for more optimal implementation.

Conclusion

This study shows that the innovation of IPAS curriculum development at MI Sudirman Ceplukan has been implemented through systematic planning, interactive learning implementation (), and continuous evaluation. During the planning stage, teachers and the curriculum team successfully mapped out the Basic Competencies (KD), developed thematic lesson plans based on a scientific approach, and prepared relevant digital and physical learning media. The implementation stage showed that learning was more active through observation activities, group discussions, simple experiments, the use of multimedia, and collaborative projects. This process was able to increase student motivation and participation in understanding integrated science and social studies concepts.

The interview results reinforced the findings that teachers felt the benefits of this innovation, even though limited technological resources remained an obstacle in the learning process. Students also showed positive responses by feeling more interested, involved, and assisted in understanding the material through contextual and visual activities. Continuous evaluation through daily assessments, projects, and class reflections also ensured that the learning process was effective.

The implementation of this IPAS curriculum innovation has proven to have a positive impact on the quality of learning and student engagement. However, improving teachers' competence in the use of technology and providing supporting facilities are still needed so that curriculum innovation can be optimized and sustained in the future.



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