TEACHERS' NEEDS ANALYSIS OF INTEGRATED SCIENCE AND SOCIAL STUDIES MATERIALS FOR HOLISTIC LEARNING IN PRIMARY SCHOOL

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Abstract. This study investigates the instructional needs of primary school teachers regarding integrated science and social studies materials to support holistic learning. Although the national curriculum promotes interdisciplinary teaching, many teachers still rely on textbooks that separate science and social studies into different semesters. This fragmentation poses challenges for implementing cohesive instruction and limits students' ability to understand real-world phenomena in a holistic manner. Using a descriptive quantitative design, data were collected through an online questionnaire distributed to 36 primary school teachers in Central Java Province. The survey examined teachers' use of official textbooks, perceptions of content separation, and expectations for integrated materials. Findings reveal that most teachers perceive current textbooks as insufficient to support integrated, contextual, and inquiry-based learning. Nearly all respondents expressed an urgent need for thematically structured teaching resources that foster interdisciplinary thinking and deeper conceptual understanding. These insights underscore the need to redesign instructional materials and provide teachers with more effective support for implementing holistic learning at the primary level.

Keywords: teaching materials, science and social studies, holistic learning

INTRODUCTION

The Merdeka Curriculum at the primary school level integrates science and social studies into a single instructional subject to enhance students' scientific literacy and holistic understanding of natural and social phenomena (Kementerian Pendidikan, Kebudayaan, Riset, 2024). This integration also aims to promote multiple perspectives, foster inquiry skills, and reduce instructional burden for both teachers and students.

At the concrete operational stage, primary school learners tend to comprehend concepts more effectively when presented within real-life and interdisciplinary contexts (Piaget & Inhelder, 2008). Holistic learning emphasizes the interconnectedness of knowledge, experience, and human values, thereby supporting the development of cognitive, affective, social, and moral aspects (Miller, 2019). Integrated instruction enables students to construct deeper meaning rather than acquire fragmented knowledge across separate subjects (S. Drake & Burns, 2004).

Integrating science and social studies at the primary level is grounded in the recognition that real-world phenomena are inherently interdisciplinary. Scholars argue that disciplinary integration helps learners build cognitive bridges between scientific and social contexts, aligning with how children naturally perceive their environment (S. M. Drake & Reid, 2018; Erstad & Voogt, 2018; Roehrig et al., 2021). Such integration supports students in constructing deeper conceptual understanding by observing the interconnectedness of natural events and human activities.

Research also shows that interdisciplinary instruction improves students' ability to apply knowledge across contexts. Berasategi et al (2020) found that students in integrated classrooms demonstrated stronger inquiry processes and reflection skills. Similarly, Muchlas Abrori (2023) highlighted that integrated thematic learning enhances learners' reasoning, argumentation, and responses to socio-scientific issues. These findings suggest that integrated instruction not only fosters academic achievement but also supports civic and ethical awareness in early learners.

From a curriculum perspective, integration aligns with educational paradigms emphasizing inquiry, real-life relevance, and thematic coherence. Muzakkir et al (2024) proposed cross-curricular learning designs that introduce essential concepts through meaningful themes. Askary et al. (2023) reported that integration helps reduce content overload and improves instructional coherence, particularly for young learners. Collectively, these studies affirm the pedagogical value of aligning content areas to create holistic and context-rich learning experiences.

Despite these pedagogical advantages, implementing integration in classroom practice remains challenging (Huang & Pei, 2024). Studies have shown that government-issued textbooks often separate science and social studies into different semesters, which constrains opportunities for inquiry-based and interdisciplinary learning (O'Brien, 2025). Additional barriers include rigid textbook structures, limited autonomy for teachers to adapt materials, and insufficient support for contextualized instruction (Nguyen, 2024; Van de Oudeweetering & Voogt, 2018). Khairi's (2024) research has largely focused on developing digital resources or technical delivery methods, yet it rarely addresses teachers' actual needs for conceptually integrated and thematically coherent materials.

The quality and design of teaching materials play a crucial role in supporting holistic and inquiry-based learning in primary education. Well-designed resources that integrate science and social studies enable students to construct meaning through real-life connections and problem-solving activities. For instance, Ampofo and Fynn (2020) emphasized that integrated instructional materials foster interdisciplinary reasoning and contextual thinking. Mangen et al. (2019) found that students develop stronger inquiry habits when exposed to materials that encourage cross-disciplinary exploration. Kali (2021) noted that context-rich resources improve students' questioning skills and engagement with complex issues.

Despite these advantages, existing textbooks and resources often lack coherence and fail to reflect classroom realities. Essuman observed that primary-level textbooks still treat subjects separately, making interdisciplinary lesson planning challenging (Essuman et al., 2020). Harrison et al highlighted that teachers frequently modify or supplement government-issued textbooks to add thematic connections, suggesting a disconnect between curricular goals and available resources (Harrison et al., 2022). Jia et al also concluded that without integrated content, students struggle to transfer knowledge across disciplines (Jia et al., 2021).

To address these challenges, scholars recommend developing flexible, inquiry-driven materials suited to primary learners. Halvorsen et al (2019) advocated including open-ended tasks and project-based modules to encourage holistic thinking and collaboration. Chowdhury (2016) argued for materials that reflect local context and student diversity to enhance engagement. Hariani (2023) proposed a design framework combining scientific inquiry with socio-cultural themes, making learning both meaningful and transformative.

This review underscores the importance of moving beyond technical or digital solutions to focus on teachers' actual instructional needs for conceptually integrated and thematically coherent materials. These insights shape the rationale for this study, which aims to fill the gap by

systematically mapping teachers' practical needs to implement interdisciplinary and holistic learning in Indonesian primary schools.

Furthermore, existing instructional materials seldom accommodate project-based or inquiry-driven approaches adapted to local contexts (Smadi et al., 2020). This disconnect between curriculum policy and classroom implementation creates a gap in the literature regarding teachers' practical instructional needs. While previous studies have discussed the importance of integration in theory, few have systematically explored what primary school teachers require to design and implement integrated lessons effectively.

Therefore, this study aims to identify the instructional needs of primary school teachers for integrated and contextually relevant teaching materials. The findings are expected to guide curriculum developers and policymakers in designing thematically structured and pedagogically meaningful resources. The novelty of this research lies in systematically mapping teachers' practical needs for conceptually integrated science and social studies materials, which has rarely been explored in the Indonesian primary education context. Unlike prior studies that primarily focused on digital platforms or technical delivery, this study emphasizes teachers' perspectives on thematic coherence, contextual relevance, and flexibility to support holistic learning. By directly addressing the gap between curriculum policy and classroom practice, this research offers new empirical insights and practical recommendations to advance interdisciplinary teaching in primary education.

METHODS

Research Design and Sampling

This study employed a descriptive quantitative survey design to investigate primary school teachers' needs for integrated teaching materials that connect science and social studies, thereby supporting holistic learning. The research was conducted between May and June 2025 through an online questionnaire distributed via professional teacher networks, including WhatsApp groups, Facebook teacher forums, and regional educational communities.

A total of 36 primary school teachers from various regions in Central Java Province participated voluntarily. The study employed purposive sampling to target teachers who actively taught science and social studies at the primary level and had prior experience using government-issued textbooks. This sampling technique was chosen to ensure that insights were collected directly from educators who are engaged in implementing integrated learning, as recommended by previous methodological studies (Creswell, 2017; Etikan et al., 2016). Before data collection, all participants received information about the research objectives and provided informed consent at the start of the questionnaire.

Instrument

The research instrument consisted of a structured online questionnaire developed using Google Forms, containing 18 items across six thematic sections:

1. Demographic profile (5 items)
2. Textbook usage (2 items)
3. Structure and separation of content (4 items)
4. Perception of integration (3 items)
5. Holistic learning practices (2 items)
6. Instructional needs and teacher suggestions (2 items)

The questionnaire items were designed to capture teachers' experiences with current textbooks, their perceptions of the integration between science and social studies, and the specific instructional support they required. The development of items reflected principles of interdisciplinary learning, inquiry-based instruction, and the cognitive characteristics of students in the concrete operational stage (Piaget, 1947).

The instrument combined closed-ended questions (Yes/No and rating scales) with open-ended prompts, allowing teachers to elaborate on perceived shortcomings and provide suggestions for improvement. Content validity was established through expert judgment by two curriculum and learning evaluation specialists, leading to revisions for clarity and contextual alignment. The finalized questionnaire was piloted with five primary school teachers to ensure clarity and usability before wider distribution.

Data Analysis

The data from the questionnaire were analyzed both quantitatively and qualitatively. Quantitative responses were tabulated and summarized using descriptive statistics (frequencies and percentages) to identify patterns in respondent demographics, perceptions of textbook integration, and instructional needs.

Open-ended responses were examined through inductive thematic coding, identifying recurring themes such as challenges in implementing integration, expectations for textbook improvement, and barriers to holistic learning. Thematic analysis is recognized as an effective method for capturing deeper insights from participants in survey research (Braun & Clarke, 2006; Kurtén & Henriksson, 2021).

This integrated analytic approach was intended to provide a comprehensive view of classroom realities and inform the design of integrated science and social studies materials for primary education.

RESULTS

Respondent Demographics

This study involved 36 primary school teachers from Central Java Province. Most respondents (69.44%) were aged 31–40 years, with a balanced gender distribution (50% male, 50% female). Nearly half (47.22%) had more than 16 years of teaching experience, while the rest had between 1 and 15 years. Regarding education, 63.89% held a bachelor's degree and 36.11% a master's degree.

Table 1. Demographic profile of respondents

Characteristic	Category	Frequency	Percentage (%)
Age	20–30 years	6	16.67%
	31–40 years	25	69.44%
	41–50 years	5	13.89%
Gender	Male	18	50.00%
	Female	18	50.00%
Teaching experience	1–5 years	9	25.00%
	11–15 years	10	27.78%
	>16 years	17	47.22%
Educational	Bachelor's	23	63.89%

qualification	Master's	13	36.11%

These demographic data indicate that most respondents were mid-career professionals, likely experienced in curriculum practice, which adds credibility to their perspectives.

Use of Government-Issued Textbooks

The survey results indicate that nearly all teachers rely on government-issued teacher's guidebooks and student textbooks as their primary instructional resources. This finding highlights the central role of standardized materials in daily classroom practices. Such dependency suggests that any structural or thematic limitations in these textbooks could directly affect teachers' capacity to deliver integrated science and social studies instruction. Moreover, it highlights the importance of aligning textbook content with curriculum goals to support interdisciplinary learning.

Table 2. Use of government-issued textbooks

Textbook type	Response	Frequency	Percentage (%)
Teacher's guidebook	Yes	34	94.44%
	No	2	5.56%
Student textbook	Yes	34	94.44%
	No	2	5.56%

Perceived Separation of Content

In exploring teachers' perceptions, the data reveal that most teachers regard the content in existing textbooks as either moderately or highly separated across disciplines. This perception highlights persistent structural barriers within textbooks that may hinder the adoption of holistic and integrated learning approaches. The finding also aligns with previous research highlighting the challenge of transforming disciplinary knowledge into cohesive, thematic instruction suitable for primary school students. Teachers' views underscore the need to revise textbook design toward greater conceptual integration.

Table 3. Perceptions of content separation

Textbook type	Perception	Frequency	Percentage (%)
Teacher's guidebook	Highly separated	13	36.11%
	Moderately separated	18	50.00%
	Not separated at all	5	13.89%
Student textbook	Highly separated	14	38.89%
	Moderately separated	18	50.00%
	Not separated at all	4	11.11%

Perceived Impact on Instruction

Although more than half of teachers indicated that content separation did not completely block integration efforts, a significant proportion still reported that it hindered or even strongly hindered

their teaching. This suggests that while some teachers are able to adapt their instruction, structural barriers in textbooks and curriculum design continue to limit the full potential of integrated learning. The distribution of responses also highlights variation in teacher agency and classroom strategies, indicating differences in how individual teachers approach fragmented content.

Table 4. Perceived hindrance and impact

Item	Response	Frequency	Percentage (%)
Does separation hinder integration?	Not hindering at all	19	52.8%
	Hindering	13	36.1%
	Highly hindering	3	8.3%
	Don't know	1	2.8%
Extent of impact on teaching	Slightly affects	11	30.6%
	Affects	18	50.0%
	Strongly affects	6	16.7%
	No impact at all	1	2.8%

Need for Integrated Teaching Materials

The survey findings clearly show that the overwhelming majority of teachers believe integrated teaching materials are either “needed” or “strongly needed.” This strong demand reflects the gap between curriculum policy and the practical classroom resources available. Teachers recognize the value of integrated materials in supporting holistic learning and making lessons more meaningful for students. Such widespread agreement underscores the urgency of developing thematic, flexible, and context-based resources that align with teachers’ instructional needs.

Table 5. Need for integrated materials

Response	Frequency	Percentage (%)
Strongly needed	19	52.8%
Needed	16	44.4%
Not really needed	1	2.8%
Not needed at all	0	0.0%

Perceived Benefits for Holistic Thinking

Teachers overwhelmingly recognized the value of integration in promoting holistic thinking among students. This strong consensus underscores that integration is viewed not only as a curriculum requirement but also as an effective pedagogical approach to connect scientific concepts with social realities. Such perceptions align with educational theories that suggest interdisciplinary learning fosters critical thinking, empathy, and a deeper understanding. The consistency of responses here reinforces the argument for curriculum designers to prioritize integrated models.

Table 6. Benefits of integration

Response	Frequency	Percentage (%)
Strongly beneficial	15	41.7%
Beneficial	19	52.8%
Slightly beneficial	2	5.5%
Not beneficial	0	0.0%

Challenges and Suggestions

Beyond acknowledging the benefits, teachers also identified several persistent challenges that limit integration in practice. These include fragmented textbook structures, insufficient contextualization, and a lack of targeted professional development opportunities. Importantly, teachers offered constructive suggestions to address these issues, reflecting their commitment to improving instructional quality. Their recommendations emphasize thematic, project-based approaches; locally relevant content; and flexible teaching strategies, which align with best practices in holistic and inquiry-based education.

Table 7. Teachers' suggestions for improvement

Theme	Example suggestions
Thematic & project-based	"Combine topics so science and social issues relate."
Contextualization	"Use local examples relevant to students' daily life."
Teacher training	"Workshops on designing integrated lessons."
Flexibility	"Allow adaptation to students' needs and context."

DISCUSSION

The results show that nearly all teachers rely heavily on government-issued textbooks for teaching science and social studies. This reliance highlights how textbook structure critically shapes integrated instructional practices. When textbooks are organized by disciplinary separation, integration becomes less feasible in classrooms. This finding is consistent with those from other education systems, which have shown that centralized textbook structures significantly influence pedagogy (Breuer & Leininger, 2021; Dai et al., 2023; Yasin et al., 2023).

Although the national curriculum promotes integration, most teachers still perceive current textbooks as moderately or highly separated. This finding aligns with earlier research emphasizing the importance of coherence and cross-disciplinary alignment in textbooks to support interdisciplinary learning (Çetin, 2024; Junevicius et al., 2021; Turner et al., 2024). Misalignment between science and social studies content continues to challenge teachers in delivering cohesive learning experiences.

Teachers also expressed an urgent need for integrated and thematic teaching materials. This supports research suggesting that resources designed around themes and real-world contexts enhance meaningful learning and concept connections (Chacón-Cuberos et al., 2021; Jónsson &

Garces Rodriguez, 2021; Rahayu & Prayogo, 2023). Integrating science and social studies through contextual themes has also been linked to better learner engagement and retention.

Many teachers proposed project-based and inquiry-based learning as models for integration. Prior studies have shown that these methods strengthen interdisciplinary understanding, critical thinking, and collaboration among elementary students (Almazroui, 2023; Morris, 2025; Zhang & Ma, 2023). They help students relate scientific and social topics through hands-on, real-world projects.

Despite teachers' positive views, common challenges persist: limited instructional time, inadequate training, and misaligned topics. These findings align with global research that highlights teacher capacity and institutional readiness as key factors for successful integrated instruction (Johnson & Czerniak, 2023; Stupurienė et al., 2024; Williamson, 2023). Addressing these requires professional development, curriculum redesign, and supportive assessment systems.

In summary, this study reveals a clear gap between curriculum intent and classroom practice. While teachers are motivated and see clear benefits, the absence of integrated resources, aligned pedagogy, and systemic support continues to limit integration efforts.

CONCLUSION

This study examined the needs and perceptions of primary school teachers regarding the integration of science and social studies within the context of the Merdeka Curriculum. The findings reveal strong support among teachers for interdisciplinary and holistic learning, recognizing clear benefits for student engagement and conceptual understanding. However, practical barriers remain, including fragmented textbook content, a lack of thematic alignment, limited contextual adaptation, and insufficient professional development opportunities.

Teachers emphasized the urgent need for integrated, project-based, and contextually relevant teaching materials, as well as training to effectively implement these approaches. These insights point to a significant gap between curriculum policy and classroom practice. Bridging this gap will require systemic reforms, including the redesign of instructional materials, targeted teacher training, and the alignment of assessments to support interdisciplinary teaching. Future research could further explore the effectiveness of newly developed integrated resources and examine their impact on student outcomes in diverse classroom settings.

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