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DESIGN OF AN INTERDISCIPLINARY INTEGRATED MATHEMATICS TASK SYSTEM FOR GRADE 5: EVIDENCE FROM VIETNAMESE PRIMARY SCHOOLS

Duong Lam Thuy¹ and Duyen Nguyen Ha²

¹Faculty of Primary Education, Thai Nguyen University of Education, Thai Nguyen, Vietnam.

²Tran Quoc Toan Primary School, Ha Long Ward, Quang Ninh Province, Vietnam

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ABSTRACT

Interdisciplinary mathematics education has become an important approach for promoting competency-based learning by connecting mathematics with authentic contexts and other school subjects. However, limited research has provided systematic guidance on designing interdisciplinary mathematics tasks, implementing them effectively in primary classrooms, and evaluating their educational impact, particularly in the Vietnamese context. This study aimed to design interdisciplinary mathematics tasks for Grade 5, develop a practical classroom implementation approach, and examine their effectiveness in Vietnamese primary schools. A design-based educational research approach was employed in two public primary schools involving 210 Grade 5 students and 18 teachers and school administrators. Data were collected through baseline needs assessment, teacher evaluations, classroom observations, students' learning products, and pre- and post-intervention learning assessments. The findings indicated a clear need for systematic instructional support to facilitate interdisciplinary mathematics teaching. Teachers evaluated the developed tasks positively in terms of curriculum alignment, authenticity, practicality, and classroom feasibility. Furthermore, students who participated in the classroom implementation achieved higher learning outcomes than those receiving conventional mathematics instruction. These findings suggest that systematically designed interdisciplinary mathematics tasks, supported by an appropriate implementation process, can enhance students' mathematical learning while strengthening competency-based primary mathematics education. The proposed framework provides both practical guidance for teachers and empirical evidence to support interdisciplinary mathematics education in Vietnam and similar educational contexts.

KEYWORDS: interdisciplinary mathematics tasks; classroom implementation; authentic learning; primary mathematics education; competency-based education

INTRODUCTION

1.1. Background and Rationale

Interdisciplinary education has become an important direction in curriculum reform because it enables students to connect knowledge across subjects and apply what they learn to authentic situations. In mathematics education, interdisciplinary learning shifts the focus from procedural knowledge to the application of mathematical concepts in meaningful real-world contexts, thereby promoting problem-solving, critical thinking, and knowledge transfer (Goos et al., 2023; Panqueban & Henríquez-Rivas, 2025).

At the primary level, interdisciplinary mathematics tasks provide valuable opportunities for students to relate mathematics to science, social studies, environmental education, and everyday life. Studies have shown that carefully designed interdisciplinary tasks can enhance conceptual understanding, increase learning motivation, and improve students' ability to use mathematics in practical situations (Ross et al., 2026; Wei et al., 2022). Moreover, integrating mathematics with other disciplines contributes to the development of key competencies expected in contemporary education, including collaboration, communication, and problem-solving (Ahr et al., 2026).

In Vietnam, the 2018 General Education Curriculum emphasizes competency-based teaching and encourages teachers to connect mathematics with practical contexts and other school subjects. However, evidence from the present study indicates that interdisciplinary mathematics tasks are still implemented inconsistently. Although most teachers recognize their educational value, many encounter difficulties in designing interdisciplinary tasks, selecting appropriate integrated content, and assessing students' learning outcomes. In addition, many Grade 5 students experience challenges when applying mathematical knowledge to interdisciplinary contexts, highlighting the need for a systematic set of interdisciplinary mathematics tasks supported by practical classroom implementation guidance.

1.2. Research Gap

Although interdisciplinary mathematics education has received increasing attention in recent years, several research gaps remain. First, previous studies have mainly examined the educational benefits of interdisciplinary learning or reviewed broad approaches to integrating mathematics with other disciplines, while relatively limited attention has been paid to the systematic design of interdisciplinary mathematics tasks that can be directly implemented in primary classrooms (Panqueban & Henríquez-Rivas, 2025; Ahr et al., 2026). Second, existing studies have reported positive effects of interdisciplinary learning on students' mathematical understanding and problem-solving; however, they provide limited guidance on how teachers can organize and implement interdisciplinary mathematics tasks in regular classroom practice, particularly within the constraints of primary education (Ross et al., 2026; Wei et al., 2022). Finally, despite the competency-based orientation of the Vietnamese General Education Curriculum, empirical evidence regarding the design, classroom implementation, and effectiveness of interdisciplinary mathematics tasks in Vietnamese primary

schools remains scarce. This gap is further reflected in the findings of the present study, which indicate that teachers experience difficulties in designing and using interdisciplinary mathematics tasks, while many Grade 5 students encounter challenges when applying mathematical knowledge in interdisciplinary contexts. Therefore, there is a need for research that develops a systematic set of interdisciplinary mathematics tasks, proposes practical classroom implementation strategies, and examines their effectiveness in supporting mathematics learning in Vietnamese primary schools.

1.3. Research Aim, Research Questions, and Contributions

In response to the research gaps identified above, this study aims to design interdisciplinary mathematics tasks for Grade 5, develop a practical approach for their classroom implementation, and examine their effectiveness in enhancing students' mathematics learning in Vietnamese primary schools. Accordingly, the study addresses three research questions: **(1)** How can interdisciplinary mathematics tasks for Grade 5 be systematically designed? **(2)** How can these tasks be effectively implemented in primary mathematics classrooms? **(3)** To what extent does the implementation of interdisciplinary mathematics tasks improve Grade 5 students' mathematics learning?

This study makes three contributions to the literature. First, it proposes a systematic set of interdisciplinary mathematics tasks aligned with the objectives and content of the Grade 5 mathematics curriculum. Second, it presents a classroom implementation approach that supports teachers in integrating interdisciplinary tasks into regular mathematics instruction. Third, it provides empirical evidence from Vietnamese primary schools regarding the effectiveness of interdisciplinary mathematics tasks in promoting students' mathematics learning and supporting competency-based mathematics education.

2. LITERATURE REVIEW

2.1. Interdisciplinary Mathematics Education

Interdisciplinary mathematics education refers to an approach in which mathematical knowledge is integrated with concepts, skills, and contexts from other subject areas to support meaningful learning and the application of mathematics in authentic situations. Rather than teaching mathematics as an isolated discipline, this approach encourages students to establish connections between mathematics and fields such as science, social studies, environmental education, and everyday life. Through these connections, students are expected to develop a deeper understanding of mathematical concepts while strengthening their ability to apply knowledge across disciplinary boundaries (Goos et al., 2023).

Research has consistently highlighted the educational value of interdisciplinary mathematics education in primary schools. Integrating mathematics with other disciplines provides opportunities for students to engage in meaningful problem-solving, promotes active learning, and supports the development of key competencies, including mathematical reasoning, communication, collaboration, and knowledge transfer. Furthermore, interdisciplinary learning creates authentic learning experiences that increase students' motivation and help them recognize the relevance of mathematics to real-life situations.

These characteristics make interdisciplinary mathematics education an appropriate pedagogical approach for implementing competency-based curricula and fostering students' comprehensive development in primary education (Panqueban & Henríquez-Rivas, 2025).

2.2. Interdisciplinary Mathematics Tasks in Primary Education

Interdisciplinary mathematics tasks are learning activities that require students to apply mathematical knowledge together with concepts and skills from other subject areas to solve meaningful problems situated in authentic contexts. Unlike conventional mathematics exercises that primarily assess procedural proficiency, interdisciplinary tasks emphasize knowledge integration, contextual reasoning, and the application of mathematics to real-life situations. Such tasks encourage students to explore relationships among disciplines while constructing mathematical understanding through inquiry, discussion, and problem solving (Drake & Reid, 2020).

In primary education, the design of interdisciplinary mathematics tasks should be aligned with curriculum objectives, students' cognitive characteristics, and authentic contexts that are familiar to learners. Effective tasks provide opportunities for students to connect mathematics with subjects such as science, geography, environmental education, and daily life without reducing the rigor of mathematical thinking. They should also support multiple competencies, including conceptual understanding, mathematical communication, collaboration, and the ability to transfer knowledge across learning contexts. Previous studies have indicated that well-designed interdisciplinary tasks increase students' engagement, strengthen the relevance of mathematics learning, and promote deeper understanding by encouraging learners to apply mathematical ideas in meaningful situations rather than merely performing routine calculations (Furner & Kumar, 2007). These characteristics provide the theoretical foundation for designing the interdisciplinary mathematics tasks developed and implemented in the present study.

2.3. Analytical Framework of the Study

Building upon the literature on interdisciplinary mathematics education and interdisciplinary mathematics tasks, this study adopts a practice-oriented analytical framework that connects task design, classroom implementation, and learning outcomes. The framework assumes that well-designed interdisciplinary mathematics tasks provide meaningful contexts in which students actively construct mathematical knowledge by integrating concepts and experiences from multiple disciplines. However, the effectiveness of such tasks depends not only on their design but also on how teachers organize learning activities, facilitate students' participation, and support mathematical reasoning during classroom implementation (Beane, 1997).

Based on this perspective, the present study conceptualizes the research process as three interconnected stages. The first stage focuses on designing interdisciplinary mathematics tasks that align with the Grade 5 mathematics curriculum while incorporating authentic interdisciplinary contexts. The second stage concerns the classroom implementation of these tasks through appropriate instructional procedures that encourage students' active engagement and collaborative learning. The final stage

evaluates the effectiveness of the designed tasks by examining students' mathematics learning following classroom implementation. This analytical framework provides the theoretical basis for the research design and guides the development, implementation, and evaluation procedures presented in the following Methods section (Jacobs, 1989).

3.1. Research Design

Guided by the analytical framework presented above, this study employed a design-based educational research approach to develop, implement, and evaluate interdisciplinary mathematics tasks for Grade 5 students in Vietnamese primary schools. The research consisted of three sequential phases. The first phase involved designing a system of interdisciplinary mathematics tasks based on curriculum requirements and principles of interdisciplinary learning. The second phase focused on classroom implementation through mathematics lessons in authentic school settings. The final phase evaluated the effectiveness of the designed tasks by comparing students' mathematics learning before and after the classroom intervention and by examining evidence collected throughout the implementation process. This research design enabled the integration of instructional design with classroom practice, ensuring that the proposed tasks were both theoretically grounded and pedagogically feasible in real educational contexts (Reeves, 2006).

3.2. Participants and Research Context

The study was conducted in two public primary schools in Vietnam where Grade 5 mathematics was taught according to the national general education curriculum. A total of 210 Grade 5 students participated in the research, together with 18 teachers and school administrators who contributed information during the needs assessment and implementation stages. The participating schools were selected because they represented typical public primary school settings and had comparable teaching conditions, allowing the designed interdisciplinary mathematics tasks to be implemented under normal classroom practices. Students participated in classroom learning activities and learning assessments, while teachers provided professional feedback on the feasibility and educational value of the proposed tasks. This research context ensured that the findings reflected authentic classroom conditions and enhanced the practical applicability of the developed interdisciplinary mathematics tasks for primary mathematics education (Creswell & Creswell, 2018).

3.3. Development and Classroom Implementation of Interdisciplinary Mathematics Tasks

Following the identification of the research context and participants, a system of interdisciplinary mathematics tasks was developed in accordance with the objectives and learning outcomes of the Vietnamese Grade 5 Mathematics Curriculum. The development process emphasized the integration of mathematical knowledge with authentic contexts from science, environmental education, and everyday life to ensure both curriculum alignment and practical relevance. The completed tasks were implemented during regular mathematics lessons through student-centered learning activities that encouraged exploration, discussion, collaboration, and the application of mathematical concepts to solve contextualized problems. Throughout the implementation, teachers acted as facilitators, guiding students to construct mathematical understanding through interdisciplinary learning experiences rather

than providing direct solutions. This systematic process of task development and classroom implementation ensured the feasibility of the instructional design and established the basis for evaluating its effectiveness in improving students' mathematics learning outcomes (McKenney & Reeves, 2021).

3.4. Instruments and Data Collection

Following the classroom implementation of the interdisciplinary mathematics tasks, data were collected to evaluate both the feasibility of the instructional approach and its impact on students' mathematics learning. Multiple sources of evidence were employed to enhance the credibility of the findings, including classroom observations, teacher feedback, students' learning products, and pre- and post-intervention mathematics assessments. The assessment instruments were developed in accordance with the learning objectives of the Grade 5 mathematics curriculum and were reviewed to ensure content validity and alignment with the interdisciplinary tasks. Data collection was conducted throughout the implementation period under regular teaching conditions, enabling the study to capture both the learning process and learning outcomes. The use of multiple data sources supported methodological triangulation and strengthened the trustworthiness of the research findings (Fetters et al., 2013).

3.5. Data Analysis

After data collection was completed, quantitative and qualitative data were analyzed to evaluate the effectiveness of the interdisciplinary mathematics tasks. Quantitative data obtained from the pre- and post-intervention mathematics assessments were processed using descriptive statistics to summarize students' learning performance and inferential statistics to compare learning outcomes before and after the intervention. Qualitative data collected from classroom observations, teacher feedback, and students' learning products were analyzed through thematic interpretation to complement and explain the quantitative findings. The integration of quantitative and qualitative evidence enabled a comprehensive evaluation of both the implementation process and learning outcomes, thereby strengthening the validity of the research conclusions. The data analysis procedures were conducted systematically to ensure transparency, consistency, and rigor throughout the study (Johnson & Onwuegbuzie, 2004).

4. RESULTS

4.1. Baseline Needs Assessment for Developing Interdisciplinary Mathematics Tasks

Table 1. Baseline Needs Assessment for Developing Interdisciplinary Mathematics Tasks

Dimension	Evidence from the baseline survey
Teachers' classroom practice	Interdisciplinary mathematics tasks were implemented only occasionally rather than as a regular instructional practice.
Teachers' professional competence	Most teachers reported only a basic level of competence in designing, implementing, and assessing interdisciplinary mathematics tasks.
Implementation barriers	Teachers experienced considerable difficulties related to instructional resources, practical design procedures, assessment methods, and preparation time.
Students' interdisciplinary application	Students demonstrated limited ability to apply mathematical knowledge to interdisciplinary and real-world contexts.
Identified development need	The findings indicated the need for a systematic framework and practical guidance for designing and implementing interdisciplinary mathematics tasks in Grade 5 mathematics.

Source: Synthesized from the baseline survey conducted in this study

Table 1 summarizes the principal findings of the baseline needs assessment conducted prior to the intervention. The results indicate that although teachers recognized the educational value of interdisciplinary mathematics learning, classroom implementation remained limited because many teachers lacked practical experience in designing interdisciplinary tasks and assessing students' interdisciplinary learning. In addition, insufficient instructional resources, limited preparation time, and the absence of a systematic design framework constrained the regular use of interdisciplinary tasks in mathematics lessons. The survey also showed that many students experienced difficulties in applying mathematical knowledge to authentic interdisciplinary situations, suggesting a gap between curriculum expectations and classroom practice. These findings provided a clear empirical justification

for developing a structured framework of interdisciplinary mathematics tasks and corresponding implementation guidelines, which constitute the core contribution of this study. Similar findings have been reported by Voogt et al. (2015), who emphasized that practical instructional support is essential for successful interdisciplinary curriculum implementation.

4.2. Teachers' Evaluation of the Developed Interdisciplinary Mathematics Tasks

Table 2. Teachers' Evaluation of the Developed Interdisciplinary Mathematics Tasks (N = 18)

Evaluation criterion	Very appropriate (%)	Appropriate (%)	Not appropriate (%)	Mean
Alignment with Grade 5 mathematics curriculum	83.3	16.7	0.0	2.83
Five-step design procedure is clear and practical	72.2	27.8	0.0	2.72
Authentic learning contexts are attractive and age-appropriate	88.9	11.1	0.0	2.89
Interdisciplinary knowledge is appropriately integrated	77.8	22.2	0.0	2.78
Supports collaboration and problem solving	83.3	16.7	0.0	2.83
Lesson time is appropriate	61.1	33.3	5.6	2.56
Applicable to other mathematics lessons	77.8	22.2	0.0	2.78
Overall	77.8	21.4	0.8	2.77

Teachers evaluated the developed interdisciplinary mathematics tasks positively across all criteria. The overall mean score was 2.77/3.00, with 77.8% of responses rating the tasks as 'very appropriate' and only 0.8% as 'not appropriate'. The highest-rated aspect concerned the authenticity and age appropriateness of the learning contexts ($M = 2.89$), indicating that contextualised tasks successfully connected mathematics with meaningful real-life situations. Strong ratings were also reported for curriculum alignment and the promotion of collaborative problem solving (both $M = 2.83$). The five-step design procedure was considered clear and practical ($M = 2.72$), suggesting that teachers could readily adopt the framework in classroom planning. The lowest rating related to lesson time ($M = 2.56$), implying that interdisciplinary activities may require flexible classroom time management. Overall, these findings support the content validity, practicality, and classroom feasibility of the developed tasks before examining their effects on student learning.

4.3. Effectiveness of Classroom Implementation

Table 3. Students' Learning Outcomes After Classroom Implementation

Performance level	Experimental group (n = 70)	Control group (n = 70)
Not completed	1 (1.4%)	5 (7.1%)
Completed	12 (17.2%)	26 (37.2%)
Completed well	32 (45.7%)	27 (38.6%)
Completed excellently	25 (35.7%)	12 (17.1%)

Note. Performance levels are reported according to the assessment categories used in the Vietnamese General Education Curriculum. Data are presented as frequencies and percentages.

The post-intervention results indicate a clear difference between the experimental and control groups. In the experimental group, 81.4% of students achieved the two highest performance levels (Completed well and completed excellently), compared with 55.7% in the control group. Conversely, only 1.4% of students in the experimental group remained in the Not completed category, whereas the corresponding proportion in the control group was 7.1%. Students exposed to the interdisciplinary mathematics tasks were more likely to demonstrate higher levels of learning achievement than those receiving conventional instruction. The largest difference was observed in the Completed excellently category, where the experimental group recorded 35.7% compared with 17.1% in the control group. These descriptive findings suggest that the classroom implementation of the developed interdisciplinary mathematics tasks was associated with improved student learning outcomes across the participating Grade 5 classes. As this section reports descriptive results, interpretation of the educational implications is presented in the Discussion section.

5. DISCUSSION

5.1. Developing interdisciplinary mathematics tasks for authentic learning

The findings indicate that the systematic development of interdisciplinary mathematics tasks addressed the instructional needs identified during the baseline assessment while responding to teachers' expectations for practical classroom resources. Rather than simply integrating content from different subjects, the developed tasks were organised around authentic contexts that enabled students to connect mathematical concepts with meaningful situations encountered in everyday life. The positive evaluations from participating teachers further suggest that the proposed five-step design process provided sufficient pedagogical guidance for classroom implementation while maintaining alignment with the Grade 5 mathematics curriculum. These findings reinforce the argument that interdisciplinary

task design should emphasise coherence between curriculum objectives, authentic contexts, and students' cognitive characteristics rather than focusing solely on content integration.

This interpretation is consistent with previous research highlighting that authentic interdisciplinary learning becomes effective when learning activities are carefully structured around meaningful problems requiring students to apply knowledge across disciplinary boundaries. Such learning environments encourage deeper conceptual understanding while maintaining the integrity of disciplinary knowledge (Bell, 2010). Similarly, Boix Mansilla (2022) argues that high-quality interdisciplinary learning depends on purposeful integration supported by explicit instructional design rather than superficial combinations of subject content. Therefore, the present study extends existing research by demonstrating that a structured design framework can assist primary teachers in developing interdisciplinary mathematics tasks that are both pedagogically feasible and closely aligned with curriculum requirements, thereby providing an operational model for routine classroom practice.

5.2. Classroom implementation and student learning outcomes

The comparison between the experimental and control groups indicates that the classroom implementation of the interdisciplinary mathematics tasks contributed to improved student learning outcomes. Although both groups followed the same Grade 5 mathematics curriculum, students who participated in lessons designed around authentic interdisciplinary tasks achieved substantially higher proportions of high-performance outcomes. This improvement can be interpreted as the result of providing students with opportunities to apply mathematical knowledge in meaningful contexts, collaborate with peers, and engage in problem-solving processes rather than relying solely on routine procedural practice. Consequently, students were encouraged to construct mathematical understanding through active participation while recognising the practical value of mathematics in addressing real-world situations. These findings support the view that the effectiveness of interdisciplinary learning depends not only on curriculum integration but also on the quality of classroom implementation and teachers' ability to facilitate meaningful learning experiences.

The present findings are consistent with previous research demonstrating that learning environments connecting mathematics with authentic contexts promote deeper conceptual understanding, student engagement, and transferable problem-solving skills (English, 2016). Likewise, Drake and Reid (2020) argue that interdisciplinary teaching enhances learning when disciplinary knowledge remains explicit while students are encouraged to establish meaningful connections across subject areas through carefully designed classroom activities. The improvement observed in the experimental group therefore suggests that the proposed interdisciplinary mathematics tasks successfully translated curriculum intentions into effective classroom practices. Rather than replacing disciplinary learning, the implementation approach strengthened students' mathematical understanding by situating mathematical reasoning within authentic interdisciplinary contexts, thereby contributing to both curriculum achievement and broader educational competencies.

5.3. Educational implications

The findings of this study provide several implications for improving mathematics education at the primary level. First, the results suggest that interdisciplinary mathematics tasks can serve as practical instructional resources that support teachers in implementing competency-based curricula through authentic learning experiences. The positive teacher evaluations and improved student learning outcomes indicate that carefully designed interdisciplinary tasks can facilitate the transition from traditional knowledge transmission to student-centred learning while maintaining alignment with curriculum objectives. This finding is particularly relevant for primary education, where meaningful connections between mathematics and everyday experiences can strengthen students' conceptual understanding and encourage active participation in classroom learning. Therefore, professional development programmes should place greater emphasis on equipping teachers with competencies in designing, adapting, and implementing interdisciplinary learning tasks within regular mathematics instruction.

Second, the present study highlights the importance of establishing coherent links among curriculum design, instructional materials, classroom implementation, and teacher professional learning. Effective interdisciplinary teaching requires more than curriculum reform; it depends on sustained support that enables teachers to translate curriculum expectations into feasible classroom practices. This interpretation is consistent with research suggesting that instructional improvement is strengthened when curriculum resources and teacher learning are developed simultaneously (Remillard, 2005). Similarly, Darling-Hammond et al. (2017) emphasise that sustained, practice-oriented professional learning enhances teachers' instructional decision-making and contributes to improved student outcomes. Consequently, the interdisciplinary mathematics task framework proposed in this study may provide a useful reference for curriculum developers, teacher educators, and primary schools seeking to promote meaningful mathematics learning through authentic interdisciplinary experiences.

5.4. Limitations and future research

Several limitations should be considered when interpreting the findings of this study. First, the classroom implementation was conducted in two Vietnamese primary schools, which may limit the generalisability of the findings to other educational settings with different curricular, institutional, or socio-cultural characteristics. Second, although the intervention demonstrated positive effects on students' mathematics learning outcomes, the implementation period was relatively short. Consequently, the study was unable to examine the long-term sustainability of students' conceptual development or the continued impact of interdisciplinary mathematics tasks on higher-order mathematical thinking. Third, the evaluation primarily focused on learning outcomes and teachers' perceptions, while other important variables, such as students' learning motivation, collaborative competencies, and problem-solving processes, were beyond the scope of the present research.

These limitations provide several directions for future studies. Future research could examine the implementation of interdisciplinary mathematics tasks across different regions and grade levels to evaluate the robustness of the proposed framework under diverse educational conditions. Longitudinal

studies would also provide stronger evidence regarding the sustained influence of interdisciplinary learning on students' mathematical competence and broader educational development. Furthermore, future investigations may integrate qualitative classroom observations, student interviews, and learning analytics to obtain a more comprehensive understanding of how interdisciplinary mathematics tasks influence students' learning processes. Such evidence would contribute to refining instructional models and strengthening the empirical foundation for interdisciplinary mathematics education in primary schools.

6. CONCLUSION

This study aimed to develop interdisciplinary mathematics tasks for Grade 5, propose a classroom implementation approach, and examine their effectiveness in Vietnamese primary schools. The findings demonstrated that the development of interdisciplinary mathematics tasks should be grounded in teachers' instructional needs, curriculum requirements, and authentic learning contexts. The positive evaluations from teachers indicated that the proposed task framework was pedagogically appropriate and feasible for regular classroom implementation. Furthermore, students who participated in the classroom implementation achieved higher learning outcomes than those receiving conventional instruction, suggesting that well-designed interdisciplinary mathematics tasks can effectively support mathematical understanding while strengthening connections between school mathematics and authentic learning experiences.

The findings contribute to the growing evidence that effective interdisciplinary education requires the integration of coherent task design, classroom implementation, and meaningful learning contexts rather than the simple combination of subject content (Holbrook & Rannikmäe, 2014). By translating these principles into a structured framework for Grade 5 mathematics, this study extends previous conceptual discussions by providing empirical evidence from Vietnamese primary schools. The proposed framework therefore offers a practical reference for teachers, curriculum developers, and teacher education programmes seeking to implement competency-based mathematics instruction through interdisciplinary learning. Consistent with international perspectives advocating authentic and context-rich mathematics education (National Council of Teachers of Mathematics [NCTM], 2014), the present study suggests that systematic interdisciplinary task design can enhance both instructional practice and students' mathematical learning, providing a useful foundation for future curriculum innovation in Vietnam and comparable educational contexts.

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