ANALYSIS OF THEMATIC LEARNING DESIGN USING SCIENTIFIC APPROACH IN KAMPUS MENGAJAR

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Abstract
This study analyzes integrated thematic learning using a scientific approach to restore basic literacy and numeracy among lower-grade students at a Kampus Mengajar target school in Garut. Employing a qualitative descriptive approach, data were gathered through in-depth interviews with lower-grade teachers and the analysis of collaboratively developed Lesson Plans (RPPs). The results indicate that teachers do not independently compile the syllabus from the initial stage because the school curriculum system provides standard documents and binding themes. However, at the operational RPP level, teachers successfully integrated scientific approach steps adaptively, focusing on observing and trying activities tailored to the cognitive development of lower-grade children. Constraints regarding rigid integration of cross-subject Basic Competencies (KD) were resolved by teaching these materials separately outside thematic hours. Furthermore, the Kampus Mengajar program successfully accelerated the development of concrete learning media that support classroom scientific activities.

Keywords: Learning Design; Thematic Learning; Scientific Approach; Kampus Mengajar

INTRODUCTION

Primary education serves as the foundational pillar in human resource development, where students lay the cognitive, affective, and psychomotor groundwork, particularly in basic literacy and numeracy. In Indonesia, Law Number 20 of 2003 concerning the National Education System mandates a democratic, equitable, and student-centered learning environment. To operationalize this, the Regulation of the Minister of Education and Culture Number 22 of 2016 establishes the scientific approach as the main orientation to cultivate a scientific mindset from an early age through logical and empirical stages. Concurrently, to accommodate the cognitive development of lower-grade children who view the world as a unified whole, the Regulation of the Minister of Education and Culture Number 57 of 2014 establishes integrated thematic learning as the organizational model for primary school curriculum content. Theoretically, this model aligns with the constructivist learning theory of Jean Piaget and Lev Vygotsky, where concrete operational children build meaning by bridging new information with their daily environment through the "5M" scientific steps: observing, questioning, trying, reasoning, and communicating.

Numerous previous studies (*state of the art*) have explored the application of these concepts. Studies by Albertus and Rahayu (2020) and Wicaksono (2020) confirm that scientific stimulation is highly effective in increasing learning motivation and critical thinking skills in primary school students. Regarding adjustments in lower grades, Putri et al. (2023) and Putri, Alamsyah, and Pribadi (2024) demonstrate that simplifying scientific syntax toward fine and gross motor activities effectively prevents psychological saturation. Furthermore, recent evaluations of the Kampus Mengajar program by Tsalist et al. (2024) and Novia (2024) highlight that teaching assistance programs successfully accelerate literacy and numeracy recovery through visual media innovations and small-group guidance.

However, a significant gap analysis exists between these comprehensive regulations, theoretical ideals, and field realities. Structural and cultural barriers remain prevalent in schools requiring quality improvement assistance, particularly in Garut Regency. Initial field observations reveal concerning

facts: many upper-grade students (grades four and five) have not mastered fluent reading, dictation writing, or basic arithmetic due to learning loss during the past pandemic. This emergency level of literacy and numeracy threatens student readiness for the Minimum Competency Assessment. While the government launched the Kampus Mengajar program via the Regulation of the Minister of Education, Culture, Research, and Technology Number 30 of 2023 to address this crisis, a crucial practical gap remains under-examined: how classroom teachers actually manage to design and simplify complex, cross-subject scientific approach steps under heavy administrative burdens and limited school infrastructure.

The novelty value of this research lies in its specific focus on the operational and collaborative dynamics of integrated thematic learning design between classroom teachers and Kampus Mengajar students in a rural, resource-limited primary school context. Unlike previous studies that separate pedagogical theories from administrative challenges, this study directly examines the practical simplification of the "5M" syntax specifically tailored to the transition phase of lower-grade children facing severe learning loss.

Therefore, this study aims to analyze in depth how lower-grade classroom teachers in the target schools of the Kampus Mengajar program in Garut Regency design thematic learning using a scientific approach. The analysis is specifically directed to capture the capacity of teachers in compiling learning instruments, analyze the practical constraints faced in integrating cross-subject content materials, and formulate contextual, alternative solutions applied together with partner students to overcome these instructional barriers.

METHOD

Research Approach and Design

This study employs a qualitative descriptive approach utilizing a case study design to delve deeply and naturally into the real-world phenomenon of thematic learning designs. The primary focus is to analyze the operational structure of integrated thematic learning based on a scientific approach, compiled collaboratively by lower-grade classroom teachers and Batch 5 Kampus Mengajar program students.

Research Setting and Informants

The research was conducted at SDN 2 Harumansari, located in Kadungora District, Garut Regency, West Java Province. This location was purposively selected because the school represents a specific target unit of the Kampus Mengajar program that faces distinctive infrastructure constraints and low basic literacy levels among its lower-grade students. The key informants or research subjects consisted of lower-grade classroom teachers (grades one, two, and three) who are actively responsible for designing and implementing daily thematic instruction.

Data Collection Techniques

Data were gathered through three comprehensive methods to ensure holistic field coverage:

1. **In-Depth Interviews:** Conducted in a semi-structured manner using validated interview guides. The dialogues focused on capturing teachers' understanding of Lesson Plan (RPP) components, the Basic Competency (KD) mapping process, cross-subject integration techniques, the practical application of scientific syntax, and the collaborative constraints and solutions encountered.
2. **Documentation Study:** Carried out by systematically collecting and reviewing the RPP manuscripts co-authored by the classroom teachers and partner students. The documents were evaluated based on their alignment with standard process regulations, the clarity of competency achievement indicators, method selection accuracy, the operational flow of the scientific approach, and evaluation instrument relevance.
3. **Unstructured Observation:** Executed directly in the classroom to observe how the conceptualized RPP drafts were manifested in actual teaching, and to evaluate the pedagogical

interactions between teachers and assisting students in managing the scientific activities of lower-grade children.

Data Analysis and Trustworthiness

The collected qualitative data were systematically analyzed using the interactive model developed by Miles and Huberman, which flows through three continuous, concurrent phases:

1. **Data Reduction:** The researchers screened, categorized, and coded raw data from the field interviews, RPP document reviews, and observation notes, discarding elements irrelevant to the instructional design focus.
2. **Data Presentation:** The reduced data were organized and structured into a systematic, coherent, and easy-to-understand descriptive narrative to lay out the thematic learning mechanisms clearly.
3. **Drawing Conclusions and Verification:** The final phase involved formulating grounded conclusions from the structured narratives, which were continuously verified against the raw evidence to ensure interpretive validity.

To guarantee the validity, reliability, and overall trustworthiness of the findings, the researchers rigorously applied two types of triangulation:

1. **Source Triangulation:** Achieved by cross-checking, comparing, and contrasting interview accounts across the first-grade, second-grade, and third-grade classroom teachers.
2. **Method Triangulation:** Accomplished by matching and validating the oral interview findings with the structural data from the RPP document analysis and the empirical evidence recorded in the classroom observation notes

RESULTS AND DISCUSSION

Result

Research findings at SDN 2 Harumansari show that lower-grade classroom teachers do not perform the entire ideal sequence of thematic learning planning stages independently from the very beginning. Based on thematic learning planning theory, teachers should ideally start by mapping Basic Competencies, analyzing indicator linkages, establishing theme networks, and compiling a syllabus independently before moving on to drafting the RPP. However, real conditions in schools show that syllabus documents and binding learning themes have been provided by the national curriculum system adopted directly by the school. The school has equipped teachers with teacher books and student books whose material format and thematic order are already structured in a standard manner.

As a result of the availability of these standard documents, teachers choose to focus directly on developing learning administration at the Lesson Plan (RPP) level. Teachers no longer perform KD mapping and analysis of inter-subject connections because the theme network is already reflected in the teacher's guidebook. This finding confirms the study of Khairiyati (2024), which states that the high administrative burden of teachers often makes them choose shortcuts by adopting existing curriculum documents rather than designing them independently from scratch. Although dependence on instant documents can save teachers' time, it has a weakness in that the learning design becomes less contextual because it is not adjusted to the unique characteristics of the environment and the learning needs of students in the school. Therefore, it is important for teachers to still make modifications at the RPP level so that the delivered material remains relevant to the students' surrounding world, as emphasized by Mawardi and Hardini (2024), that successful integrated thematic learning designs must be able to utilize the environment around the school as a real learning laboratory for students.

Discussion

RPP Formulation and Learning Modifications

Despite adopting a standard syllabus, teachers at SDN 2 Harumansari still demonstrate professional creativity in formulating learning objectives in the RPP. Teachers well understand the technique of formulating learning objectives using the ABCD (Audience, Behavior, Condition, Degree) rule. For example, in the RPP Theme "Diriku" sub-theme "Aku dan Teman Baru", the teacher formulated the learning objective as follows: "After listening to the teacher's explanation, students can mention the full name of their new friend politely". In this formulation, students act as the Audience, mentioning the full name as the Behavior, after listening to the teacher's explanation as the Condition, and politely as the Degree. This clear and measurable formulation of objectives serves as a compass for teachers and partner students in directing the course of the teaching and learning process in the classroom.

In this RPP development process, teachers also adapted the learning methods to be used. Recognizing that lower-grade students at SDN 2 Harumansari still have obstacles in fluent reading ability, teachers shifted the focus of lecture methods toward role-playing, singing, and the use of image-word cards. This is in line with the opinion of Nasution (2021) which explains that thematic learning in the lower grades must be dominated by physical activities and language games to trigger students' interest in words and numbers without making them feel cognitively pressured.

Integration of the Scientific Approach for Lower-Grade Students

In outlining the core learning activities in the RPP, teachers have made great efforts to include elements of the scientific approach. However, an important finding from this study indicates that teachers simplified the scientific syntax when designing and implementing the learning in the lower grades. Of the five scientific steps (5M) mandated in the process standards, teachers more dominantly applied and developed the steps of observing and trying.

The observing step was carried out by inviting students to observe concrete objects around the classroom or through serial image media prepared by teachers and partner students. For example, in learning mathematics about the introduction of flat shapes, students were invited to observe the surface shape of the table, whiteboard, and coins. Furthermore, in the trying step, students were invited to touch, redraw, or group these objects in groups. Meanwhile, the steps of questioning, reasoning, and communicating could not be implemented independently by lower-grade students due to limitations in vocabulary and abstract thinking abilities. In these steps, the teacher played a very active role in providing stimulation, guiding questions, and guiding students in formulating simple conclusions orally.

This simplification of the scientific steps is considered highly appropriate and pedagogically justifiable. As explained by Sibuea and Sukma (2021), the implementation of the scientific approach at the primary school level must not be forced as a rigid and linear scientific algorithm. Each step in the 5M must be translated flexibly according to the students' cognitive maturity level. Lower-grade students in the concrete operational phase require many sensory and physical activities (observing and trying) to gather information before they can perform more complex logical reasoning processes. This finding is also reinforced by the research results of Putri, Sari, and Wardani (2023) and Putri, Alamsyah, and Pribadi (2024), which show that limiting the portion of scientific syntax toward gross and fine motor activities is proven effective in improving students' thematic concept understanding without causing psychological saturation in lower-grade children. Additionally, Utami, Sutiyono, and Siska (2023) state that the development of student worksheets using a scientific approach significantly supports interactive science concept delivery in primary school.

Collaboration of the Kampus Mengajar Program in Learning Innovation

The presence of Batch 5 Kampus Mengajar program students at SDN 2 Harumansari provided a positive contribution that was highly felt by classroom teachers. One of the students' greatest contributions was helping teachers overcome the limitations of learning infrastructure through the creation of attractive, concrete learning media based on recycled materials around the school. The presence of visual media designed by students helped concretize abstract thematic materials, thereby

supporting the smooth execution of the observing step in the scientific approach. For example, to teach simple addition operations in grade one, students designed "Colorful Counting Cups" using plastic cups and ice cream sticks.

In addition to helping in media creation, students also played an important role as teaching assistants in guiding students who needed special attention during the learning process. The relatively large ratio of students in lower grades often overwhelmed teachers in monitoring individual activity during group activities. With the presence of students, those who were not yet fluent in reading received personal reading guidance in the classroom corner without disrupting the main learning process. This harmonious collaboration is in line with the research report of Tsalist, Nabila, Aulia, and Putri (2024), which states that student teaching assistance programs are tangibly able to recover students' literacy and numeracy lags in primary schools through interactive learning media innovations and small group guidance.

A similar opinion was expressed by Novia (2024), where synergy between classroom teachers and Kampus Mengajar students created an efficient division of roles in the classroom, making classroom management more conducive and active student learning activities easier to monitor. This active involvement not only benefits target primary schools but also contributes positively to honing the pedagogical competence and professionalism of students as future educators, as highlighted by Nurhalimah, Mawaddah, and Abdillah (2022) in their analysis of the positive impact of the Kampus Mengajar program on the self-development of pre-service teacher students.

Analysis of Barriers and Contextual Solutions

Although the collaborative design and implementation process went well, teachers at SDN 2 Harumansari still faced several tactical obstacles that interrupted the smooth learning process. The first obstacle was curriculum demands that required combining Basic Competencies of certain subjects into a theme that was logically difficult to integrate. Teachers often found several mathematics or Indonesian language KDs forced into a particular sub-theme, making the narrative flow of the theme feel odd and confusing for lower-grade students. For example, merging the material of introducing fractions in mathematics with environmental cleanliness in the Indonesian language often seemed forced.

The second obstacle was the low level of learning independence of lower-grade students in the target school. Many lower-grade students did not possess fine motor skills and stable concentration to follow simple experiment instructions. When invited to do observing or trying activities in groups, the classroom atmosphere often became non-conducive because students tended to play by themselves with the media provided or fight over learning tools with their peers.

To overcome these obstacles, teachers at SDN 2 Harumansari implemented several highly contextual tactical solutions. Regarding the misfit of KD integration, teachers chose to separate the non-relevant KD and teach it independently outside the main thematic hours. This solutive step is supported theoretically by Bella (2024), who asserts that the concept of thematic learning should not sacrifice scientific integrity and the depth of essential understanding of the subject itself if forcing themes actually leads to biased student understanding. By teaching these materials separately, teachers can maintain the quality of delivering mathematics or Indonesian language concepts in a more focused and thorough manner.

Meanwhile, to overcome students' low independence during scientific activities, teachers and assisting students agreed to design very simple student worksheets with easy-to-understand pictorial instructions. Teachers also provided intensive instructional guidance during the observing and trying steps while giving positive reinforcement in the form of praise or achievement stars to students who followed instructions orderly. This is relevant to the advice of Nurahayu and Samsudin (2023) as well as Yulia (2024) regarding the utilization of structured visual media like serial images to train children's focus attention and slowly build their language skills in delivering observation results.

The use of guided discovery strategies with a large portion of teacher assistance in lower grades has been proven to maintain an active and conducive learning climate, which is in line with the

findings of Wicaksono (2020) and Albertus and Rahayu (2020) that scientific stimulation packaged in a directed and fun way is highly effective in increasing learning motivation while stimulating critical thinking skills of primary school students from an early age.

CONCLUSION

Based on the entire series of data analysis results and discussion presented, it can be concluded that primary school teachers in target schools of the Kampus Mengajar program, specifically at SDN 2 Harumansari, Garut Regency, have a good understanding and skills in designing thematic Lesson Plans based on a scientific approach. Although teachers do not carry out all stages of curriculum planning from the basic level, such as KD mapping and independent syllabus compilation, because these documents are provided by the school, teachers successfully modified the RPP to be more contextual.

The integration of the scientific approach in thematic learning for lower-grade students is implemented flexibly and adaptively by emphasizing observing and trying steps, adjusted to the cognitive developmental capacity of students' concrete operational phase. Administrative obstacles in the form of forced integration of cross-subject KDs were overcome by teachers by teaching non-relevant materials independently outside the binding theme. Furthermore, the close collaboration forged between classroom teachers and students of the Kampus Mengajar program was proven to provide a significant accelerating impact in solving learning infrastructure limitations through the creation of concrete learning media and providing personal learning guidance for students experiencing basic reading and arithmetic delays.

Based on the research conclusions, the authors formulate several constructive recommendations for improving thematic learning quality in the future. First, for primary school teachers, it is recommended to continue training creativity in packaging scientific steps into fun educational games so that lower-grade students do not feel cognitively burdened. Second, for schools, it is important to provide a wider room for flexibility for teachers to adjust themes and syllabi to match the surrounding school environment. Third, for organizers of the Kampus Mengajar program, it is recommended that preparation for prospective student participants be reinforced with practical materials regarding management strategies for slow-learning students and interactive thematic learning media creation on a low-cost scale in areas with limited facilities.

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