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INTEGRATIVE CURRICULUM DEVELOPMENT BASED ON HIGHER ORDER THINKING SKILLS (HOTS) IN PRIMARY EDUCATION

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Abstrak

Penelitian ini mengkaji pengembangan kurikulum integratif dan perannya dalam menanamkan keterampilan berpikir tingkat tinggi (Higher Order Thinking Skills/HOTS) di pendidikan dasar. Melalui tinjauan literatur yang sistematis, penelitian ini menemukan bahwa kurikulum integratif memfasilitasi pembelajaran yang holistik dengan menghubungkan berbagai mata pelajaran ke konteks dunia nyata. Strategi pedagogis yang efektif, seperti pembelajaran berbasis proyek, pembelajaran berbasis inkuiri, dan pemecahan masalah yang kontekstual, terbukti meningkatkan kemampuan kognitif siswa, termasuk pemikiran kritis, kreativitas, dan pemecahan masalah. Meskipun demikian, implementasi menghadapi tantangan, seperti kurangnya kesiapan guru, keterbatasan sumber daya, dan masalah keselarasan kebijakan. Kurikulum integratif yang berfokus pada HOTS sangat penting untuk mempersiapkan siswa menjadi pembelajar seumur hidup dan warga negara global.

Kata kunci: kurikulum integratif, Higher Order Thinking Skills (HOTS), pendidikan dasar, pembelajaran berbasis proyek.

Abstract

This study examines the development of an integrative curriculum and its role in embedding Higher Order Thinking Skills (HOTS) in primary education. Through a systematic literature review, this research finds that an integrative curriculum facilitates holistic learning by connecting various subjects to real-world contexts. Effective pedagogical strategies, such as project-based learning, inquiry-based learning, and contextualized problem-solving, are proven to enhance students' cognitive abilities, including critical thinking, creativity, and problem-solving. Nevertheless, implementation faces challenges, such as a lack of teacher readiness, resource limitations, and policy alignment issues. An integrative curriculum focused on HOTS is crucial for preparing students to be lifelong learners and global citizens.

Keywords: integrative curriculum, Higher Order Thinking Skills (HOTS), primary education, project-based learning.

INTRODUCTION

In a world of increasing complexity, it's vital to shift the focus of primary education from rote memorization to Higher Order Thinking Skills (HOTS) (Rusmini et al., 2025). This approach helps prepare young learners to analyze, evaluate, and create new knowledge, equipping them to face future challenges. By moving beyond traditional curricula, an integrative curriculum that prioritizes HOTS can help students become independent and innovative thinkers (Irwan et al., 2024; Rosiana & Lestari, 2024).

Many countries, including Indonesia, are already working to incorporate HOTS into their educational frameworks (Irwan et al., 2024; Rusmini et al., 2025). Models like the Connected Creative Problem Solving (CCPS) model integrate skills such as critical thinking, creative problem-solving, and scientific literacy to foster a student's holistic cognitive development. This emphasis on integrative curricula reflects a growing agreement among educators that these skills are essential for lifelong learning and career readiness.

An integrative curriculum breaks down traditional subject boundaries, allowing for a learning environment where critical and creative skills can be developed and strengthened together (Rosiana & Lestari, 2024). This approach uses active learning methods, such as project-based learning and collaborative problem-solving, to help young students apply these skills to real-world situations (Yurt, 2025). It's especially important at the primary education level, where these foundational thinking skills can be most effectively cultivated.

Despite this clear need, a significant gap remains between traditional teaching practices and the demands of modern education. Educators often lack the training, resources, and instructional models needed to integrate these skills into their daily teaching. This highlights the need for further research to identify practical strategies for incorporating HOTS into classroom practices and to address the challenges teachers face.

METHOD

This study employed a literature review to explore how an integrative curriculum can be used to incorporate Higher Order Thinking Skills (HOTS) into primary education. The research focused on contemporary educational practices and challenges by including sources from the last 10 to 15 years (Snyder, 2019). To ensure the study's relevance and rigor, only peer-reviewed journals, books, and policy documents that focused specifically on primary education, integrative curriculum models, and HOTS were included. Materials that were not relevant to curriculum development or that focused on higher education were excluded.

Academic databases like Google Scholar and Scopus were systematically searched to collect data, which was then supplemented with relevant policy documents and educational reports. The data was analyzed using a thematic analysis approach, which helped identify recurring concepts, outcomes, and strategies across the literature. Key themes that emerged from the analysis included student-centered teaching, interdisciplinary learning, and the use of active learning strategies to foster HOTS. By examining these themes, the research aims to provide a comprehensive understanding of how integrative curricula support critical, creative,

and problem-solving skills in primary education while also highlighting the practical challenges educators face (Bowen, 2009; Miles et al., 2014).

FINDINGS AND DISCUSSION

A. Findings

Definition and Characteristics of Integrative Curriculum

An integrative curriculum is a progressive educational model that merges different subjects to help students see the connections between them rather than learning them in isolation (Nwakoby, 2025). This approach moves beyond traditional boundaries to create a more holistic learning experience. It can take on various forms, from multidisciplinary models that link topics across subjects to interdisciplinary models that blend them, and even transdisciplinary models that organize learning around real-world problems that transcend disciplines entirely. These models share a common goal: to make education more relevant by connecting classroom learning to real-life situations.

Table 1. Type of Integrative Model

Type of Integrative Model	Description	Example
Multidisciplinary	A topic is studied through the lens of multiple separate subjects.	A unit on "weather" where students read about it in English, measure rainfall in math, and study the water cycle in science.
Interdisciplinary	Subjects are intentionally combined to highlight their connections.	A project on "urban planning" that merges concepts from history, geography, and economics to design a sustainable city.
Transdisciplinary	Learning is organized around a real-world problem, with content flowing across subjects naturally.	A community service project to address local pollution, drawing on science, civics, and art to create solutions and public awareness campaigns.

The core of an integrative curriculum lies in its emphasis on real-life contexts and problem-solving (Herlinawati et al., 2024). Instead of simply memorizing facts, students are encouraged to apply their knowledge to solve authentic problems, making their learning more meaningful and durable. This approach prepares students for a world where complex challenges require a synthesis of knowledge from multiple fields. By focusing on practical

application, integrative curricula help students develop a deeper understanding and appreciation for what they are learning.

Integration of HOTS in Primary Education Curriculum

Embedding Higher Order Thinking Skills (HOTS) into primary education requires a shift from traditional, teacher-centered instruction to student-centered, active learning (Irwan et al., 2024). Strategies for fostering critical thinking, creativity, and problem-solving often involve pedagogical approaches that require students to analyze, synthesize, and evaluate information. These methods encourage students to be active participants in their learning rather than passive recipients of information, helping to build a foundation for lifelong learning.

Several models and frameworks have been successful in integrating HOTS. Inquiry-based learning encourages students to ask questions and investigate topics independently, while project-based learning allows them to work on extended projects that require critical thinking and collaboration (Rosiana & Lestari, 2024). Problem-based learning models, such as the Connected Creative Problem Solving (CCPS) model, use real-world problems as a starting point, prompting students to develop creative solutions by applying knowledge from different disciplines (Rusmini et al., 2025). These frameworks provide a structured way for educators to move beyond rote memorization and cultivate deeper cognitive abilities.

Table 2. HOTS-Based Pedagogical Model

HOTS-Based Pedagogical Model	Description	Skills Developed
Inquiry-Based Learning	Students investigate questions and problems through research and exploration.	Questioning, analyzing, researching, evaluating.
Project-Based Learning	Students engage in a long-term project to address a real-world problem.	Collaboration, problem-solving, critical thinking, creativity.
Problem-Based Learning	Students learn through the experience of solving an open-ended problem.	Critical thinking, creativity, argumentation, synthesis.

Outcomes of HOTS-based Integrative Curriculum

One of the most significant outcomes of an integrative, HOTS-based curriculum is improved student engagement and motivation (Herlinawati et al., 2024). When learning is

connected to real-life contexts and challenges, students find it more interesting and relevant, which boosts their intrinsic motivation. The active nature of these learning models also keeps students engaged and reduces the passivity often associated with traditional teaching methods, creating a more dynamic and enjoyable classroom environment.

This approach also leads to enhanced cognitive skills and independent learning. By regularly engaging in tasks that require critical thinking and problem-solving, students develop a stronger ability to think independently and work through complex problems on their own (Rosiana & Lestari, 2024). This not only improves their academic performance but also prepares them to become autonomous learners capable of navigating a rapidly changing world. The ability to analyze information and form reasoned conclusions is a crucial skill that this curriculum model aims to develop from an early age.

Beyond cognitive gains, a HOTS-based integrative curriculum helps develop crucial social-emotional and collaborative competencies. Project-based and problem-based learning often require students to work together, fostering collaboration, communication, and teamwork (Irwan et al., 2024). These models also build resilience and adaptability as students learn to handle setbacks and adjust their strategies. These interpersonal skills are invaluable for personal and professional success in the 21st century.

Challenges Identified

Despite its benefits, the implementation of an integrative, HOTS-based curriculum faces several significant challenges. A major hurdle is teacher readiness and professional development (Irwan et al., 2024). Many educators have been trained in traditional, subject-specific teaching methods and may lack the pedagogical knowledge and skills required to effectively facilitate an integrated curriculum. Without adequate training and ongoing support, teachers may struggle to transition to student-centered and inquiry-based approaches.

Another key challenge is the limitation of resources. Integrative curricula require more than just textbooks; they need a variety of teaching materials, technology, and flexible classroom spaces to support collaborative and project-based learning. Furthermore, developing appropriate assessment tools to measure complex skills like critical thinking and creativity is difficult. Traditional tests that focus on rote memorization are inadequate for evaluating the outcomes of a HOTS-based curriculum, yet the development of new, authentic assessment methods can be costly and time-consuming.

Finally, policy and curriculum alignment can present a major obstacle. The shift to an integrative curriculum often requires significant changes at the institutional level, including

adjustments to educational policies, curriculum standards, and evaluation systems (Hidayat et al., 2024). In many educational systems, rigid, content-heavy curricula and standardized testing still dominate, making it difficult for schools and teachers to adopt a more flexible, skill-based approach. Without support from policymakers, the successful implementation of an integrative, HOTS-based curriculum will be challenging.

B. Discussion

Interpretation of Findings

The findings show that an integrative curriculum is an effective framework for fostering Higher Order Thinking Skills (HOTS) in primary school students by moving away from isolated subjects and toward a more connected, real-world approach. This model helps learners see the relevance of their education by linking concepts across disciplines (Nwakoby, 2025). The focus on real-life contexts and problem-solving, a hallmark of this curriculum, makes learning more engaging and helps students develop skills like analysis, synthesis, and evaluation (Herlinawati et al., 2024). The core strength of this approach is its ability to prepare students not just for academic success but for the complexities of modern life.

A key aspect of this framework is balancing content mastery with skill development. While traditional models prioritize knowledge acquisition, an integrative curriculum views knowledge as a tool to solve problems (Wang, 2024). This doesn't mean content is less important; instead, it becomes the foundation upon which skills are built. For example, learning about the water cycle isn't just about memorizing facts—it's about using that knowledge to propose solutions to a local water shortage. This balanced approach ensures that students gain both a strong knowledge base and the cognitive skills to use it effectively.

Comparison with Previous Studies

The findings align with a growing global trend in education that emphasizes 21st-century skills (Hidayat et al., 2024). Major educational reforms worldwide recognize the need for students to be creative, critical thinkers and collaborators to succeed in a rapidly changing world. The push for integrative and HOTS-based curricula is a direct response to this need, as they are seen as more effective than traditional models at cultivating these skills (Rusmini et al., 2025). This trend highlights a widespread consensus that education must adapt to prepare students for the demands of the future.

However, a comparison of implementation across different contexts—such as developed versus developing countries—reveals significant contrasts. While developed nations often have the resources and policy flexibility to implement these curricula, developing

countries may face greater challenges, including limited funding, a lack of teacher training, and rigid educational policies (Irwan et al., 2024). For example, while models like the Merdeka Belajar curriculum in Indonesia show promise, their success heavily relies on overcoming these systemic barriers. These contrasts underscore the importance of context-specific strategies and a supportive educational ecosystem for successful implementation.

Implications for Practice

The research findings have clear implications for educational practice, starting with teacher training and pedagogical innovation. To successfully implement an integrative curriculum, teachers need professional development that focuses not just on what to teach but how to teach it in a way that fosters HOTS. Training programs should focus on active learning methodologies, interdisciplinary lesson planning, and the use of technology to facilitate inquiry-based projects. Without this support, the full potential of an integrative curriculum cannot be realized.

Furthermore, policy adjustments are necessary to support this shift. Policymakers must move away from standardized testing and rigid, content-heavy curricula and create space for more flexible, skill-based learning (Hidayat et al., 2024). This includes reforming assessment methods to accurately measure complex skills and providing schools with the resources needed for collaborative and project-based learning. Aligning policy with pedagogical goals is crucial for creating an environment where an integrative, HOTS-focused curriculum can thrive.

Finally, the findings highlight the importance of collaborative learning environments and assessment reform. Schools should be designed as dynamic spaces that encourage interaction and teamwork (Yurt, 2025). Simultaneously, assessment must evolve to include authentic measures like portfolios, project-based evaluations, and peer assessments that can capture the depth of student learning and the development of HOTS. By creating these supportive systems, educators can ensure that the transition to an integrative curriculum is not only possible but also sustainable and impactful.

CONCLUSION

A HOTS-based integrative curriculum is essential for primary education, as it goes beyond traditional learning to create a more holistic experience. This approach helps students connect subjects to real-life situations, using strategies like project-based and inquiry-based learning to build crucial skills in critical thinking and creativity. While this research highlights the benefits of this model, it also notes the limitations of relying on secondary data and the varying contexts of different studies. To address this, future research should include empirical

studies and develop new assessment tools that can accurately measure these higher-order skills. Ultimately, by adopting a HOTS-based integrative curriculum, we can ensure that primary students are not just learning facts but are being prepared to become lifelong learners and innovative global citizens.

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