

The Role of School Management in Fostering Creativity and Critical Thinking among Elementary School Students

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ABSTRACT

This study investigated the role of school management in fostering creativity and critical thinking among elementary school students at SD Islam Nurul Iman, Parung. In the context of twenty-first-century education, these competencies were considered essential for enabling students to respond effectively to complex and dynamic challenges. However, their development was often limited by managerial constraints and insufficient systemic support at the school level. This study employed a qualitative case study design involving the principal, teachers, and students as key informants. Data were collected through semi-structured interviews, classroom and school observations, and document analysis, and were analyzed thematically. The findings showed that school management supported the development of creativity and critical thinking through four interrelated dimensions: instructional leadership, curriculum innovation, collaborative school culture, and a supportive learning environment. Instructional leadership strengthened teachers' pedagogical practices, while curriculum innovation facilitated student-centered and project-based learning. A collaborative school culture and psychologically safe learning environment also encouraged active participation, idea generation, and critical dialogue. The study concluded that integrative and adaptive school management provided an important foundation for developing higher-order thinking skills in elementary education.

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Introduction

In the 21st-century educational landscape, creativity and critical thinking have become core competencies that must be cultivated from the early stages of formal education. These

skills are not only essential for academic success but also for preparing students to navigate complex social, technological, and global challenges (Organisation for Economic Co-operation and Development [OECD], 2020; World Bank, 2021). Elementary schools, as foundational institutions, play a strategic role in shaping these competencies. However, the development of such higher-order thinking skills is not solely dependent on classroom instruction; it is significantly influenced by how schools are managed and led (Hallinger & Wang, 2021). School management encompasses a wide range of processes, including leadership practices, curriculum management, teacher development, and the creation of a supportive learning environment. Effective school management has been identified as a critical determinant in improving educational quality and student outcomes (Bush, 2020; Leithwood et al., 2020). In this context, school leaders particularly principals, are expected to adopt transformational and instructional leadership approaches that encourage innovation, a collaborative culture, and reflective teaching practices (Harris & Jones, 2022). Such leadership is essential in fostering an environment where creativity and critical thinking can flourish.

Recent studies highlight that the integration of student-centered learning, problem-based learning, and inquiry-based approaches significantly contributes to the development of creativity and critical thinking skills (Voogt et al., 2021; Saavedra & Opfer, 2021). However, the successful implementation of these pedagogical approaches requires systematic management support, including policy alignment, teacher capacity building, and resource allocation. Without effective management, innovative teaching strategies often fail to sustain long-term impact (Fullan, 2020).

In the Indonesian context, the push towards enhancing higher-order thinking skills is reflected in national education reforms, including the emphasis on the *Profil Pelajar Pancasila* and competency-based curricula. Nevertheless, empirical evidence suggests that many elementary schools still struggle to translate these policies into effective classroom practices due to limitations in managerial capacity, teacher readiness, and institutional culture (Suchyadi, 2020; Suchyadi et al., 2021). This indicates that the issue is not merely pedagogical but deeply rooted in school management practices. Several studies conducted by Suchyadi and colleagues emphasize the importance of strategic school management in improving learning quality and student competencies. For instance, Suchyadi (2020) found that leadership effectiveness significantly influences teacher performance and instructional innovation. Furthermore, Suchyadi et al. (2021) and Suchyadi et al. (2022) demonstrate that collaborative school culture and participatory management contribute to the development of students' critical thinking skills. In a more recent study, Suchyadi et al. (2023) highlight that adaptive management strategies are essential in responding to educational challenges in the digital era. Despite these contributions, there remains limited research specifically examining how school management practices directly foster both creativity and critical thinking at the elementary level.

Globally, while there is a growing body of literature on 21st-century skills, much of it focuses on instructional strategies rather than managerial dimensions (Care et al., 2020; Darling-Hammond et al., 2021). This creates a research gap in understanding the integrative role of school management in systematically developing these competencies. Additionally, most studies are conducted in developed countries, leaving a contextual gap regarding how these dynamics operate in developing regions, particularly in Indonesian elementary schools. Another critical gap lies in the limited use of case-based, context-specific analyses that capture the complexity of school management practices in real

settings. Schools such as SD Islam Nurul Iman, Parung, represent unique educational environments where religious values, community involvement, and institutional leadership intersect. Investigating such contexts can provide nuanced insights into how management practices can be optimized to support holistic student development. Based on these considerations, this study aims to analyze the role of school management in fostering creativity and critical thinking among elementary school students. Specifically, it seeks to explore how leadership practices, curriculum management, and school culture contribute to the development of these competencies. By focusing on a case study at SD Islam Nurul Iman, Parung, this research intends to fill both theoretical and empirical gaps, while also providing practical implications for school leaders and policymakers.

School management refers to the systematic process of planning, organizing, leading, and controlling educational resources to achieve institutional goals effectively and efficiently (Bush, 2020). In the context of elementary education, school management plays a crucial role in shaping the quality of teaching and learning processes, as well as the overall development of students. Effective school management is not limited to administrative functions but extends to instructional leadership, organizational culture, and continuous improvement mechanisms (Hallinger & Wang, 2021). Contemporary perspectives emphasize that successful school management requires a shift from traditional bureaucratic approaches to more adaptive, collaborative, and data informed practices. Leithwood et al. (2020) argue that school leadership significantly influences student outcomes through its impact on teacher motivation, instructional quality, and school climate. Similarly, Harris and Jones (2022) highlight that school leaders must navigate uncertainty by fostering innovation and resilience within educational institutions.

In the Indonesian elementary school context, school management is increasingly expected to align with national education reforms that emphasize competency-based learning and character education. However, disparities in managerial capacity and institutional readiness often hinder effective implementation (Suchyadi, 2020). This underscores the need to examine how school management practices can be optimized to support the development of higher-order thinking skills.

Creativity and critical thinking are widely recognized as essential competencies for the 21st century. Creativity involves the ability to generate original ideas, think divergently, and produce innovative solutions, while critical thinking refers to the capacity to analyze, evaluate, and make reasoned judgments (OECD, 2020; Saavedra & Opfer, 2021). These skills are interrelated and mutually reinforcing, forming the foundation for problem-solving and lifelong learning. Research indicates that the development of these competencies should begin at the elementary level, where cognitive flexibility and curiosity are still highly malleable (Darling-Hammond et al., 2021). Instructional approaches such as inquiry-based learning, project-based learning, and collaborative learning have been shown to enhance both creativity and critical thinking (Voogt et al., 2021). However, these approaches require supportive institutional conditions, including flexible curricula, teacher autonomy, and resource availability. Despite their importance, many schools struggle to effectively integrate creativity and critical thinking into daily learning practices. This is often due to an overemphasis on standardized testing, limited teacher capacity, and rigid organizational structures (Care et al., 2020). Therefore, the role of school management becomes critical in creating an enabling environment that supports innovative pedagogical practices.

School leadership is a central component of school management that directly influences the development of students' competencies. Transformational leadership, for instance, has been associated with increased teacher commitment, innovation, and student engagement (Leithwood et al., 2020). Instructional leadership, on the other hand, focuses on improving teaching quality and aligning curriculum with learning objectives (Hallinger & Wang, 2021). Recent studies suggest that effective school leaders integrate both leadership models to create a balanced approach that supports teacher development and student learning outcomes. Harris and Jones (2022) emphasize that leadership practices must be adaptive and context-sensitive, particularly in rapidly changing educational environments. In addition, distributed leadership, where responsibilities are shared among teachers and staff, has been shown to foster collaboration and collective efficacy. Empirical studies in Indonesia further reinforce the importance of leadership in educational improvement. Suchyadi (2020) found that principal leadership significantly affects teacher performance and instructional quality. Moreover, Suchyadi et al. (2021) highlight that collaborative leadership practices contribute to the creation of a positive school culture, which in turn supports student learning. These findings suggest that leadership is not only a managerial function but also a pedagogical driver.

School culture refers to the shared values, beliefs, and norms that shape interactions within the school community. A positive school culture is characterized by trust, collaboration, and a shared commitment to learning (Fullan, 2020). Such an environment is essential for fostering creativity and critical thinking, as it encourages students to express ideas, take risks, and engage in meaningful discussions. Research shows that school culture is strongly influenced by management practices and leadership styles. Schools that promote open communication, teacher collaboration, and student-centered learning tend to produce better educational outcomes (Darling-Hammond et al., 2021). Furthermore, participatory management approaches where stakeholders are actively involved in decision-making have been linked to increased student engagement and critical thinking skills (Suchyadi et al., 2022).

In faith-based schools such as SD Islam Nurul Iman, school culture also incorporates religious values that shape students' moral and social development. This adds a unique dimension to the learning environment, where cognitive and character development are integrated. However, limited research has explored how such cultural contexts influence the development of creativity and critical thinking, indicating a need for further investigation.

Although a substantial body of literature highlights the importance of creativity and critical thinking, most studies focus on instructional strategies rather than the managerial processes that support them (Care et al., 2020; Voogt et al., 2021). This creates a theoretical gap in understanding how school management functions as an enabling system for the development of these competencies. Additionally, empirical studies on school management in Indonesia often emphasize leadership effectiveness and teacher performance but rarely examine their direct relationship with students' higher-order thinking skills (Suchyadi et al., 2023). There is also a contextual gap, as many studies are conducted in urban or well-resourced schools, leaving limited insights into schools with specific cultural and institutional characteristics. This study positions itself at the intersection of school management, leadership, and student competency development. By focusing on a case study at SD Islam Nurul Iman, Parung, this research seeks to provide a nuanced understanding of how management practices can foster creativity and critical

thinking within a specific educational context. It aims to contribute to both theoretical development and practical application in the field of educational management.

Method

Research Design and Participants

This study employed a qualitative case study design to investigate how school management supported the development of creativity and critical thinking among elementary school students at SD Islam Nurul Iman, Parung. The case study design was selected because it enabled an in-depth examination of school management practices within their natural educational context. The study involved the principal, teachers, and students as key informants. Informants were selected purposively based on their involvement in school management, instructional activities, and students' learning experiences.

Data Collection Techniques

Data were collected through semi-structured interviews, non-participant observations, and document analysis. Interviews were conducted with the principal and teachers to explore school management practices, instructional leadership, curriculum implementation, and strategies for developing students' creativity and critical thinking. Observations were conducted during learning activities to examine classroom practices, student participation, interaction, and the learning environment. Relevant documents, including school programs, lesson plans, curriculum documents, and learning activity records, were also analyzed. Data from the three techniques were compared to obtain a comprehensive understanding of the phenomenon and to strengthen data credibility.

Data Analysis and Trustworthiness

Data were analyzed thematically through several stages: data organization, data condensation, coding, identification of recurring patterns, development of themes, and interpretation of findings. The analysis focused on themes related to instructional leadership, curriculum innovation, collaborative school culture, learning environment, creativity, and critical thinking. The trustworthiness of the findings was addressed through source and technique triangulation, member checking, prolonged engagement, and an audit trail. The interpretation of the findings was subsequently related to relevant concepts of school management and student competency development to identify the role of management practices in supporting higher-order thinking skills.

Results and Discussion

Based on data collected through interviews, observations, and document analysis, the findings reveal four major themes related to the role of school management in fostering students' creativity and critical thinking: (1) instructional leadership, (2) curriculum innovation, (3) collaborative school culture, and (4) supportive learning environment (Table 1).

Table 1. Summary of Thematic Findings

Theme	Key Practices	Impact on Students
Instructional Leadership	Classroom supervision, mentoring, teacher feedback	Improved critical questioning and reasoning

Theme	Key Practices	Impact on Students
Curriculum Innovation	Project-based learning, differentiated instruction	Enhanced creativity and problem-solving
Collaborative Culture	Teacher collaboration, peer discussion	Increased idea exchange and critical dialogue
Learning Environment	Safe, supportive, student-centered climate	Higher student engagement and confidence

Instructional Leadership and Critical Thinking Development

The findings indicate that the principal's instructional leadership plays a significant role in guiding teachers toward practices that stimulate critical thinking. Regular supervision and reflective feedback encouraged teachers to design learning activities that involve analysis, evaluation, and reasoning.

One teacher stated **figure 1**.

"The principal often reminds us to ask 'why' and 'how' questions, not just 'what'. This helps students think deeper."

Figure 1. The result of the interview

This aligns with research emphasizing that instructional leadership directly influences teaching quality and student cognitive outcomes (Hallinger & Wang, 2021). Similarly, evidence suggests that leadership focused on pedagogy significantly enhances higher-order thinking skills (Leithwood et al., 2020). In line with this, Suchyadi et al. (2023) highlight that adaptive leadership strategies are crucial in promoting critical thinking in dynamic learning environments.

Curriculum Innovation and Student Creativity

The study found that school management actively promotes curriculum innovation, particularly through project-based learning and differentiated instruction. These approaches provide students with opportunities to explore ideas, create solutions, and express originality.

An observation note recorded figure 2.

"Students worked in groups to design a simple eco-friendly product, presenting their ideas with confidence and creativity."

Figure 2. The result of the interview

This finding supports prior studies indicating that innovative pedagogical models enhance creativity and problem-solving skills (Voogt et al., 2021). Project-based learning, in particular, has been widely recognized as effective in fostering creative thinking (Darling-Hammond et al., 2021). Moreover, Suchyadi et al. (2022) found that participatory and flexible curriculum management significantly contributes to the development of students' creative capacities.

Collaborative School Culture and Critical Dialogue

Another key finding is the presence of a collaborative culture among teachers and students. Teachers frequently engage in professional discussions, share teaching strategies, and

reflect on classroom practices. This collaborative environment extends to students, who are encouraged to participate in group discussions and peer learning. A teacher noted in Figure 3.

"We often discuss teaching strategies together. It helps us create more engaging and challenging activities for students."

Figure 3. The result of the interview

This aligns with research showing that collaborative school culture enhances both teaching effectiveness and student engagement (Harris & Jones, 2022). Furthermore, collaborative environments promote critical dialogue, which is essential for developing reasoning skills (Care et al., 2020). Suchyadi et al. (2021) also emphasize that a strong culture of collaboration positively impacts student achievement and critical thinking.

Supportive Learning Environment and Student Engagement

The study also reveals that a supportive and student-centered learning environment significantly contributes to the development of creativity and critical thinking. The school fosters a safe atmosphere where students feel comfortable expressing ideas without fear of failure.

A student expressed in figure 4.

"I am not afraid to give my opinion because the teacher always appreciates our ideas."

Figure 4. The result of the interview

This finding is consistent with studies highlighting the importance of psychological safety in learning environments (Darling-Hammond et al., 2021). A supportive climate encourages risk-taking and exploration, which are essential components of creativity (OECD, 2020). Additionally, Suchyadi (2020) notes that effective school management contributes to a positive learning environment that enhances student participation.

The findings demonstrate that school management plays an integrative and strategic role in fostering creativity and critical thinking. Instructional leadership ensures that teaching practices align with higher-order thinking objectives, while curriculum innovation provides the necessary pedagogical framework. At the same time, collaborative culture and a supportive learning environment create conditions that enable these competencies to develop holistically. These results reinforce the argument that the development of 21st-century skills is not solely dependent on instructional strategies but requires a systemic approach involving effective school management (Care et al., 2020). The study also extends previous research by providing empirical evidence from a specific elementary school context, highlighting how management practices operate in real settings. Importantly, this study addresses the gap identified in previous literature by demonstrating the direct linkage between school management and student competencies, particularly in the Indonesian context. The case of SD Islam Nurul Iman shows that even within resource limitations, strategic management practices can significantly enhance students' creativity and critical thinking.

Conclusion

This study concluded that school management supported the development of creativity and critical thinking among elementary school students through the integration of instructional leadership, curriculum innovation, collaborative school culture, and a supportive learning environment. The findings indicated that these four dimensions did not operate independently but interacted to create school conditions that encouraged student participation, exploration of ideas, problem-solving, and critical dialogue. The novelty of this study was the identification of an integrated school management pattern in which leadership, curriculum management, collaborative culture, and learning environment collectively supported the development of higher-order thinking skills within the context of elementary education in Indonesia. These findings suggested that the development of students' creativity and critical thinking should not be addressed solely through classroom instructional strategies but should also be supported through coherent management practices at the school level. Practically, school leaders were encouraged to strengthen instructional leadership, facilitate teacher collaboration, support innovative learning practices, and establish learning environments that encouraged students to express and evaluate ideas. As this study was limited to a single school, further research involving multiple schools and comparative or mixed-method approaches was recommended to examine the applicability and sustainability of the identified management pattern in different educational contexts.

Author Contributions

The contributions of each author, based on the CRediT contributor roles, are as follows:

Conceptualization: YS; Methodology: WSA; Formal analysis: RSI; Investigation: MKY; Writing – original draft: YS, WSA; Writing – review & editing: RSI, MKY; Supervision: YS.

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Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Use of Artificial Intelligence

The authors used Claude AI to assist in improving the clarity, coherence, and organization of the manuscript. All AI-generated suggestions were critically reviewed and verified by the authors, who take full responsibility for the accuracy and final content of the manuscript.

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