

School Leadership Policy and Early Literacy–Numeracy Development in Indonesian Early Childhood Education: A Case Study of the Merdeka Curriculum

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ABSTRACT

This study examines how principal leadership policy supports early literacy and numeracy development in Indonesian early childhood education (PAUD) through the implementation of the Merdeka Curriculum. Employing a qualitative case study design, the research was conducted in selected PAUD institutions in Indonesia that had actively implemented the Merdeka Curriculum. Data were collected through semi-structured interviews with principals and teachers, classroom observations, and analysis of curriculum plans, lesson plans, and school policy documents. The data were analyzed using thematic analysis involving open, axial, and selective coding to identify recurring patterns and explanatory themes. The findings reveal that principal leadership policy influences literacy and numeracy development indirectly by shaping classroom practices, teacher instructional capacity, and assessment processes rather than directly affecting children's learning outcomes. Effective leadership was enacted through five interrelated mechanisms: fostering pedagogical coherence, strengthening teacher professional capacity, integrating literacy and numeracy into play-based learning, aligning formative assessment with developmental principles, and promoting active parent and community engagement. The study further shows that the enactment of leadership policy is constrained by variations in leadership capacity, institutional resources, and tensions between developmental approaches and academic expectations. Conceptually, this study positions principal leadership policy as a mediating mechanism that connects curriculum enactment with instructional practices and children's early literacy and numeracy development, thereby extending current perspectives on educational leadership within the implementation of the Merdeka Curriculum.

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1. INTRODUCTION

The introduction should briefly place the study in a broad context and highlight why it is important. It should define the purpose of the work and its significance. The current state of the research field should be reviewed carefully, and key publications cited. Please highlight controversial and diverging hypotheses when necessary. Finally, briefly mention the main aim of the work and highlight the principal

conclusions. As far as possible, please keep the introduction comprehensible to scientists outside your particular field of research. References should be cited as (Kamba 2018) or (Marchlewska et al. 2019) or (Cichocka 2016; Madjid 2002; Hidayat and Khalika 2019; Ikhwan 2019) or (Miller and Josephs 2009, 12) or Rakhmat (1989). See the end of the document for further details on references. Technical terms should be defined. Symbols, abbreviations, and acronyms should be defined the first time they are used. All tables and figures should be cited in numerical order.

Early childhood education (ECE) is recognized as a critical stage for developing foundational literacy and numeracy skills that support children's future learning and development. In Indonesia, this priority has been reinforced through the implementation of the Merdeka Curriculum, which promotes developmentally appropriate and play-based learning in PAUD (Duncan et al. 2007; Heckman 2006). Global policy frameworks advanced by institutions such as UNESCO and OECD consistently emphasize the urgency of strengthening foundational learning in early childhood as a strategic response to global learning crises. Reports indicate that many children fail to achieve minimum proficiency in literacy and numeracy, even after several years of schooling, thereby underscoring the importance of early intervention (OECD 2017; UNESCO 2024).

In response to these challenges, education systems worldwide have initiated curriculum reforms aimed at improving early learning outcomes. In Indonesia, the introduction of the Merdeka Curriculum (*Kurikulum Merdeka*) represents a significant policy shift toward a more flexible, student-centered, and competency-based educational framework (Nur 'Azah et al. 2024; Marthawati and Setyo 2024). This reform departs from traditional content-heavy curricula by emphasizing differentiated instruction, contextual learning, and the integration of essential competencies, including literacy and numeracy, into holistic developmental processes (Gurion 2024). The Merdeka Curriculum also decentralizes decision-making authority, granting schools and their leaders greater autonomy in designing and implementing learning strategies that align with local needs and student characteristics.

Within this decentralized framework, the role of school principals becomes increasingly pivotal. Contemporary theories of educational leadership, particularly instructional leadership and transformational leadership, position school leaders as key agents in shaping teaching practices and student outcomes (Hallinger 2018; Leithwood and Seashore-Louis 2011). School leadership policy, in this context, encompasses the strategic decisions and institutional practices enacted by principals to guide curriculum implementation, support teacher professional development, allocate resources, and establish a conducive learning environment. Empirical studies have consistently demonstrated that effective school leadership is second only to classroom instruction in influencing student achievement (Robinson 2008; Hadi et al. 2023). However, the mechanisms through which leadership policy impacts early childhood learning outcomes remain underexplored, especially in the context of emerging curriculum reforms such as the Merdeka Curriculum.

A critical gap in the literature lies in the limited focus on early childhood settings. While numerous studies have examined the relationship between school leadership and student achievement in primary and secondary education, relatively few have addressed this relationship in ECE contexts (Siraj-Blatchford et al. 2007; Mubarak et al. 2023). Early childhood education is characterized by distinct pedagogical approaches, including play-based learning, socio-emotional development, and holistic child-centered practices. Consequently, the influence of leadership policy in ECE may operate through different pathways compared to higher levels of education. For instance, principals in early childhood institutions must not only manage administrative functions but also ensure that pedagogical practices align with developmental principles and support emergent literacy and numeracy.

Moreover, the implementation of the Merdeka Curriculum requires adaptive and context-responsive principal leadership. Although the curriculum provides schools with greater flexibility, principals are expected to translate its principles into developmentally appropriate, play-based literacy and numeracy practices. Differences in leadership capacity, institutional resources, and teacher readiness contribute to variations in curriculum implementation across PAUD institutions in Indonesia. However, limited empirical research has examined how principal leadership policy creates the

instructional, organizational, and relational conditions that support early literacy and numeracy development under the Merdeka Curriculum (Fullan, 2015; Spillane et al., 2002). In this regard, school leadership policy functions as a critical mediating variable that bridges national curriculum directives and classroom-level practices.

Another important dimension concerns the conceptualization and measurement of literacy and numeracy in early childhood. Unlike in formal schooling, where standardized assessments are prevalent, early childhood learning outcomes are often assessed through observational and developmental approaches. Literacy at this stage includes emergent reading, oral language development, and symbolic understanding, while numeracy encompasses basic mathematical reasoning, pattern recognition, and problem-solving skills (Sarama and Clements 2009; Dianita et al. 2023). Effective leadership policy must therefore support teachers in implementing pedagogically appropriate strategies that foster these competencies within play-based and experiential learning environments.

In addition, socio-cultural factors play a significant role in shaping the implementation of educational policies in Indonesia. Community engagement, parental involvement, and local cultural values influence how early childhood education is delivered and experienced (Amato and Sobolewski 2001). School leaders must navigate these contextual dynamics while maintaining alignment with national curriculum standards (Bush and Glover 2014). This complexity reinforces the importance of leadership policy as a contextualized practice that integrates global educational principles with local realities. As such, examining school leadership policy within the Merdeka Curriculum framework requires a nuanced understanding of both structural and cultural dimensions of educational practice.

Despite increasing scholarly attention to the implementation of the Merdeka Curriculum and educational leadership in Indonesia, empirical evidence explaining how principal leadership policy supports early literacy and numeracy development in early childhood education (PAUD) remains limited. Existing studies have predominantly examined curriculum implementation or school leadership as separate domains, with little attention to how leadership policies create the instructional, organizational, and relational conditions necessary for developmentally appropriate, play-based literacy and numeracy learning. Consequently, the mechanisms through which principal leadership policy mediates curriculum enactment and classroom practices in Indonesian PAUD remain insufficiently understood.

In this study, principal leadership policy refers to the strategic instructional, organizational, and relational decisions enacted by school principals to facilitate curriculum implementation, strengthen teacher capacity, organize supportive learning environments, and foster collaboration with families and communities. Within the Merdeka Curriculum, such leadership extends beyond administrative management to the enactment of policies that promote developmentally appropriate, play-based literacy and numeracy learning consistent with the pedagogical principles of early childhood education. This perspective positions leadership policy as a dynamic process through which curriculum reform is translated into meaningful educational practice.

Accordingly, this study addresses the following research questions: (1) How do principal leadership policies shape the implementation of the Merdeka Curriculum in Indonesian PAUD? (2) Through what instructional, organizational, and relational mechanisms do these leadership policies support early literacy and numeracy development? (3) What contextual factors facilitate or constrain the enactment of principal leadership policy during curriculum implementation?

This study contributes to the educational leadership literature by conceptualizing principal leadership policy as a mediating mechanism linking curriculum enactment with early literacy and numeracy development in Indonesian PAUD. It extends existing perspectives on educational leadership by explaining how leadership policies establish the instructional, organizational, and relational conditions that enable developmentally appropriate learning under the Merdeka Curriculum. Practically, the findings provide evidence-based insights for policymakers, school leaders, and

educators seeking to strengthen leadership capacity and improve the quality of early childhood education.

2. METHODS

This study employed a qualitative single-case study design to examine how principal leadership policy supports early literacy and numeracy development through the implementation of the Merdeka Curriculum in Indonesian early childhood education (PAUD). A qualitative case study was considered appropriate because it enables an in-depth exploration of how leadership policies are interpreted, enacted, and translated into instructional practices within their real-life context. This design provides a contextually grounded understanding of the relationship between principal leadership policy and the implementation of developmentally appropriate, play-based literacy and numeracy learning (Yin 2011).

The study was conducted in selected PAUD institutions in Indonesia that had actively implemented the Merdeka Curriculum. The research sites were purposively selected based on three criteria: active implementation of the Merdeka Curriculum, demonstrated principal involvement in curriculum planning and school policy, and the willingness of school staff to participate in the study. This purposive sampling strategy ensured the selection of information-rich cases capable of providing in-depth insights into the enactment of principal leadership policy (Duck 1993). This strategy was designed to ensure that the cases selected would provide information-rich data relevant to the research objectives (Patton 2002). Participants consisted of school principals and teachers who were directly involved in curriculum implementation and literacy–numeracy instruction. Principals were selected because of their responsibility for developing and implementing school leadership policies, while teachers were included to examine how these policies were translated into classroom practices. A total of 8–12 participants were involved, which was considered sufficient to achieve data saturation and generate rich qualitative evidence (Creswell 2013).

Data were collected through semi-structured interviews, non-participant observations, and document analysis to ensure methodological triangulation and enhance the credibility of the findings. Semi-structured interviews were conducted with school principals and teachers to explore their experiences and perspectives regarding principal leadership policy, the implementation of the Merdeka Curriculum, and strategies for supporting developmentally appropriate literacy and numeracy learning. Non-participant observations were carried out in both classroom and school settings using a structured observation protocol to examine how leadership policies were enacted in everyday educational practices. Classroom observations focused on teacher–child interactions, play-based literacy and numeracy activities, instructional strategies, learning environments, assessment practices, and the use of learning resources, while school-level observations examined curriculum planning, teacher professional collaboration, and instructional supervision. Document analysis of curriculum plans, lesson plans, school policy documents, and assessment records was conducted to verify and complement the interview and observational data. The integration of these multiple data sources enabled a comprehensive understanding of how principal leadership policy shaped curriculum enactment and supported early literacy and numeracy development under the Merdeka Curriculum (Hartley and Sturm 1997).

Document analysis complemented the interview and observational data by examining curriculum plans, teaching modules, lesson plans, school policy documents, meeting minutes, and student assessment records related to the implementation of the Merdeka Curriculum. These documents were systematically reviewed to identify how principal leadership policies were formulated, communicated, and translated into instructional planning and classroom practices. The analysis also enabled cross-validation of evidence obtained from interviews and observations, thereby strengthening the credibility and comprehensiveness of the findings through data triangulation (Bowen 2004).

Data analysis was conducted using an iterative and interpretive approach based on thematic analysis. The process began with the transcription of interview data and the organization of

observational and documentary data. The researcher then engaged in a systematic coding process, starting with open coding to identify initial concepts and patterns within the data. This was followed by axial coding to explore relationships between categories, and finally selective coding to develop overarching themes that explain the role of school leadership policy in shaping literacy and numeracy outcomes. The use of constant comparative analysis allowed for the refinement of categories and ensured that interpretations were grounded in empirical evidence (Miles and Huberman 1994). This analytical process enabled the construction of a coherent narrative linking leadership policy, curriculum implementation, and early learning outcomes.

To ensure the trustworthiness of the study, several strategies were employed in accordance with established qualitative research standards. Credibility was enhanced through data triangulation and member checking, where participants were invited to review and validate the researcher's interpretations. Transferability was addressed by providing detailed descriptions of the research context, enabling readers to assess the applicability of the findings to other settings. Dependability was ensured through a transparent and systematic documentation of the research process, while confirmability was maintained by minimizing researcher bias and grounding conclusions in the data (Lincoln and Guba 1985).

Ethical considerations were rigorously observed throughout the research process. Participants were fully informed about the purpose of the study and their rights, including voluntary participation and the option to withdraw at any stage. Informed consent was obtained prior to data collection, and confidentiality was ensured through the use of pseudonyms and secure data storage. These measures align with established ethical standards in educational research and ensure the integrity of the study.

In sum, this methodological framework provides a robust and systematic approach to examining the relationship between school leadership policy and early childhood literacy and numeracy development. By integrating multiple data sources and employing rigorous analytical procedures, the study offers a comprehensive understanding of how leadership policy is enacted within the Merdeka Curriculum and how it contributes to improving early learning outcomes in the context of Indonesian early childhood education.

3. FINDINGS AND DISCUSSION

3.1. Reconceptualizing School Leadership Policy in Early Childhood Education: Institutional Enactment of the Merdeka Curriculum

Interview and observational data revealed that principals did not perceive the Merdeka Curriculum merely as an administrative policy but as a framework for guiding instructional improvement in early childhood education. Principals interpreted the curriculum by adapting its principles to their schools' pedagogical needs, organizational contexts, and available resources, while encouraging teachers to implement developmentally appropriate and play-based literacy and numeracy learning (Fonsén and Soukainen 2020). These findings suggest that school leadership policy extends beyond administrative decision-making to become a dynamic process through which curriculum reform is interpreted, negotiated, and institutionalized (Harini et al. 2023). Consistent with policy enactment theory, leadership policy was enacted through principals' sensemaking, teachers' professional agency, and the socio-cultural context of the school, demonstrating that curriculum policy acquired practical meaning through the actions and interactions of local educational actors (Arruda Filho et al. 2019).

The findings indicate that principals interpreted the flexibility of the Merdeka Curriculum as an opportunity to adapt learning to children's developmental needs rather than merely complying with administrative requirements. Participants consistently described their role as translating broad curriculum principles into practical decisions related to instructional planning, assessment, teacher support, and the allocation of learning resources. This process of sensemaking extended beyond individual understanding to shape school routines, instructional priorities, and collaborative decision-

making among teachers. In the context of early childhood education, principals emphasized the importance of balancing curriculum expectations with developmentally appropriate, play-based learning practices to ensure meaningful literacy and numeracy experiences. These findings demonstrate that principal leadership policy functions as an interpretive mechanism through which curriculum intentions are translated into pedagogical practice, consistent with the principles of policy enactment and instructional leadership (Syahrir et al. 2024).

A central pattern emerging from the data is that leadership policy is enacted through institutional negotiation. Implementation does not proceed linearly; instead, it unfolds through iterative dialogue among principals, teachers, and contextual constraints (Nadeem 2024). The findings further revealed that effective principals fostered collaborative decision-making rather than relying on directive leadership. They encouraged teachers to adapt learning activities to local contexts while maintaining coherence with the principles of the Merdeka Curriculum. This collaborative approach was reflected in the integration of literacy and numeracy into developmentally appropriate, play-based learning activities. Literacy development was promoted through storytelling, dialogic reading, symbolic play, and the use of environmental print, whereas numeracy learning was embedded in counting routines, pattern recognition, sorting activities, and the use of manipulatives. These practices created meaningful learning experiences that supported children's engagement with foundational literacy and numeracy skills while preserving the child-centered philosophy of early childhood education (Sarama and Clements 2009). In this sense, leadership policy functions as a mediating structure that enables pedagogical adaptation without diluting curricular goals.

The findings indicate that principals promoted pedagogical coherence by aligning curriculum objectives, instructional strategies, assessment practices, and classroom learning environments throughout the implementation of the Merdeka Curriculum. Rather than treating literacy and numeracy as separate learning domains, principals encouraged teachers to integrate these foundational competencies into daily routines, classroom activities, and formative assessment practices. This alignment enabled teachers to provide consistent and developmentally appropriate learning experiences, ensuring that literacy and numeracy were embedded across different aspects of children's learning rather than taught as isolated skills. These findings highlight the importance of pedagogical coherence as a key mechanism through which principal leadership policy supports the successful enactment of the Merdeka Curriculum (Nadeem 2024). Literacy-rich environments—featuring accessible books, labels, and print displays—coexisted with numeracy-rich settings—incorporating manipulatives, measurement tools, and visual patterns (Khosa 2025). Assessment practices emphasized formative, observational approaches, including portfolios and anecdotal records, enabling teachers to track developmental trajectories rather than rely on standardized measures. This coherence is consistent with evidence that leadership focused on teaching and learning exerts a strong indirect effect on student outcomes (Robinson 2008).

Another salient dimension is teacher agency as a mediating mechanism. Leadership policy produces effects on learning outcomes primarily through its influence on teachers' beliefs, knowledge, and practices (Bush 2020). Principals who cultivated professional trust and collaborative inquiry enhanced teachers' capacity to design and enact innovative learning experiences. Structured professional learning communities, peer observations, and reflective dialogues enabled teachers to experiment with integrating literacy and numeracy into thematic and play-based curricula. This pattern resonates with distributed leadership, wherein leadership is enacted through interactions among multiple actors, expanding the organization's capacity for improvement (Mubarak et al. 2023). In ECE, where pedagogical decisions are highly contextual and moment-to-moment, empowering teachers is not optional but essential for effective policy enactment.

The study also underscores the role of contextual responsiveness in shaping leadership policy. Indonesian ECE settings are embedded in diverse socio-cultural environments that influence expectations about schooling, achievement, and child development (Bridwell-Mitchell and Sherer 2017). Principals must navigate parental aspirations—often oriented toward early academic

performance—while preserving the developmental integrity of play-based learning. Effective leaders addressed this tension through strategic communication, demonstrating how literacy and numeracy can be cultivated through developmentally appropriate practices (Day and Dragoni 2015). They also incorporated local cultural resources into learning activities, thereby enhancing relevance and engagement. This contextualization reflects the premise that leadership effectiveness depends on the capacity to integrate global reform agendas with local cultural logics (Leithwood and Seashore-Louis 2011).

Despite these strengths, the enactment of leadership policy is constrained by structural limitations. Variability in leadership expertise, uneven access to professional development, and resource disparities across institutions affect the depth and consistency of implementation. In some cases, policy enactment remained procedural—focused on compliance with administrative requirements—rather than transformative. Limited availability of quality learning materials and insufficient mentoring for teachers further restricted innovation. These constraints echo broader findings that successful reform requires alignment among leadership capacity, organizational conditions, and external support systems (Fullan 2007). Without such alignment, the potential of decentralized curricula to enhance learning outcomes may remain unrealized.

Integrating these insights, school leadership policy in the Merdeka Curriculum context can be conceptualized as a multi-layered construct encompassing interpretive, relational, and structural dimensions. It is interpretive in its reliance on leaders' sensemaking; relational in its dependence on teacher agency and collaborative practices; and structural in its organization of resources, routines, and environments that sustain pedagogical coherence (Bridwell-Mitchell and Sherer 2017). Crucially, its effectiveness lies in its capacity to align these dimensions toward the development of early literacy and numeracy as foundational competencies.

Table 1. Reconceptualized Dimensions of School Leadership Policy in the Enactment of the Merdeka Curriculum

Dimension	Conceptual Definition	Empirical Indicators	Implications for Literacy and Numeracy
Policy Sensemaking	Ongoing interpretation of curriculum principles into actionable school-level strategies	Translation of Merdeka principles into thematic plans; alignment with developmental needs	Ensures age-appropriate, integrated literacy–numeracy experiences
Institutional Negotiation	Collaborative adaptation of policy among leaders, teachers, and constraints	Co-planning sessions; flexible instructional designs; iterative refinement	Embeds literacy and numeracy in play-based, context-rich activities
Pedagogical Coherence	Alignment across curriculum, instruction, assessment, and environment	Literacy- and numeracy-rich classrooms; formative assessment systems	Produces consistent exposure and reinforcement of core competencies
Teacher Agency	Teachers' capacity and autonomy to enact policy through practice	Professional learning communities; reflective practice; peer coaching	Enhances instructional innovation and responsiveness
Contextual Responsiveness	Adaptation of policy to socio-cultural expectations and local conditions	Parent engagement; integration of local culture; communication strategies	Increases relevance and acceptance of developmentally appropriate practices
Structural Conditions	Organizational resources and capacities enabling policy enactment	Availability of materials; access to training; leadership expertise	Determines sustainability and equity of implementation outcomes

In sum, this section demonstrates that leadership policy is best understood as an enacted, context-sensitive practice that organizes how curriculum reform becomes pedagogically meaningful in early

childhood settings. By foregrounding sensemaking, negotiation, coherence, and teacher agency, the study offers a refined account of how school leadership policy shapes the institutional enactment of the Merdeka Curriculum. The findings contribute to the broader literature by specifying the mechanisms through which leadership influences early literacy and numeracy development, emphasizing that durable improvement depends on the alignment of interpretive, relational, and structural dimensions within schools.

3.2. Leadership Policy and Early Learning Outcomes: Mechanisms of Literacy and Numeracy Development in the Merdeka Curriculum Context

This section analyzes how school leadership policy is translated into early childhood learning outcomes—particularly literacy and numeracy—within the implementation of the Merdeka Curriculum. Building on the understanding that policy is enacted rather than merely implemented, the findings indicate that leadership does not exert a direct, linear influence on children's competencies (Franceško and Nedeljković 2022). Instead, its effects are mediated through a constellation of interrelated mechanisms that shape instructional practices, teacher capacity, learning environments, assessment systems, and stakeholder engagement. These mechanisms together form a policy–practice–outcome nexus through which early literacy and numeracy are developed in contextually meaningful ways.

The findings indicate that the integration of literacy and numeracy into developmentally appropriate, play-based learning constituted one of the principal mechanisms through which leadership policy supported children's early learning. Rather than treating literacy and numeracy as isolated academic subjects, principals encouraged teachers to embed these competencies within storytelling, dialogic reading, symbolic play, guided exploration, and problem-solving activities that reflected children's everyday experiences. Through these instructional practices, children demonstrated observable progress in vocabulary development, narrative comprehension, print awareness, counting, pattern recognition, number identification, and simple problem-solving. The integration of literacy and numeracy into authentic learning experiences enabled children to develop foundational competencies while maintaining the child-centered and play-based principles of the Merdeka Curriculum. These findings support previous studies showing that early cognitive development is strengthened when literacy and numeracy are embedded in meaningful and engaging learning contexts rather than taught through formal academic instruction (Rahayu et al. 2025; Sarama and Clements 2009).

A second mechanism identified in this study is teacher capacity-building as a key mediator of principal leadership policy. The findings indicate that principals strengthened instructional quality by fostering teachers' professional knowledge, pedagogical skills, and collaborative practices. Through regular professional learning activities, reflective discussions, and peer collaboration, teachers developed a deeper understanding of the Merdeka Curriculum and gained greater confidence in integrating literacy and numeracy into developmentally appropriate, play-based learning. This professional support enabled teachers to design more responsive learning experiences that promoted children's vocabulary development, early reading awareness, counting, pattern recognition, and problem-solving skills. These findings suggest that the influence of principal leadership policy on children's learning outcomes is largely indirect, operating through the enhancement of teacher capacity and instructional practice, consistent with previous studies emphasizing teacher effectiveness as a central pathway linking educational leadership to student learning (Leithwood and Seashore-Louis 2011). In this context, teacher capacity serves as a central conduit through which leadership policy is translated into improved learning experiences for children.

The findings further indicate that the organization of learning environments constitutes an important mechanism through which principal leadership policy supports children's literacy and numeracy development. Principals promoted the creation of classroom environments enriched with literacy and numeracy resources, including accessible storybooks, labeled learning materials, alphabet

and number displays, counting tools, manipulatives, and play-based learning centers that encouraged active exploration. These learning environments provided children with continuous opportunities to engage with language and mathematical concepts through both structured and child-initiated activities. As a result, literacy and numeracy learning became an integral part of children's daily experiences rather than isolated instructional sessions. These findings highlight that leadership policy extends beyond instructional supervision to encompass the strategic organization of physical learning environments that foster developmentally appropriate and meaningful learning (Eze and Bienert 2025). These environmental features provide continuous opportunities for children to engage with language and mathematical concepts in both structured and unstructured contexts. Drawing on ecological theories of development, such environments can be understood as providing the proximal processes necessary for cognitive growth (Bronfenbrenner 2005). Leadership policy, in this sense, extends beyond instructional guidance to include the deliberate organization of space and resources that support sustained engagement with foundational competencies.

Another important mechanism identified in this study is the alignment of assessment practices with developmental and curricular objectives. The findings indicate that principal leadership policy influenced how children's learning was monitored and evaluated by encouraging teachers to adopt formative and authentic assessment practices consistent with the Merdeka Curriculum. Rather than relying solely on standardized measures, teachers used classroom observations, learning documentation, anecdotal records, and portfolio assessments to monitor children's progress in literacy and numeracy within everyday learning activities. These assessment practices enabled teachers to identify individual developmental needs, provide timely instructional support, and adjust learning experiences accordingly. The findings suggest that leadership policy plays a pivotal role in establishing assessment systems that are developmentally appropriate while ensuring alignment between curriculum goals, instructional practices, and children's learning outcomes (Martone and Sireci 2009). Teachers are encouraged to use observational methods, documentation, and portfolio-based assessments to capture children's progress in literacy and numeracy. This approach allows for a more nuanced understanding of individual development and supports responsive teaching strategies that address children's specific needs (Siregar et al. 2025). It also reflects best practices in early childhood assessment, which emphasize the importance of continuous and context-sensitive evaluation (Ahmad et al. 2020). Leadership policy thus plays a crucial role in establishing assessment systems that are aligned with both pedagogical principles and curriculum goals.

In addition to internal school processes, stakeholder engagement emerges as a significant mechanism through which leadership policy enhances learning outcomes. The findings indicate that principals who actively involve parents and communities in educational processes are able to create a more supportive learning ecosystem (Gilbert and Low 2021). Parental involvement in activities such as shared reading, storytelling, and numeracy-based interactions at home reinforces the skills developed in the classroom and contributes to a more holistic learning experience. This continuity between home and school environments is particularly important in early childhood, where learning is deeply embedded in everyday interactions. Research has consistently demonstrated that parental engagement positively influences children's literacy and numeracy development (Epstein, 2011). Leadership policy, therefore, functions as a bridging mechanism that connects institutional practices with broader social contexts (Setiawan 2024).

Despite the presence of these enabling mechanisms, the study also identifies several constraints that mediate the effectiveness of leadership policy. One of the primary challenges is the uneven distribution of resources and professional expertise across institutions. Schools with limited access to instructional materials and professional development opportunities face difficulties in implementing literacy and numeracy programs effectively (Mintrop 2012). Additionally, variations in teacher preparedness can lead to inconsistencies in instructional practices, thereby affecting the quality of learning experiences. These findings highlight the importance of organizational capacity in supporting the enactment of leadership policy and ensuring equitable outcomes.

Another significant challenge relates to the tension between societal expectations for early academic achievement and the developmental principles underpinning early childhood education. In some contexts, parents and communities place strong emphasis on formal instruction in literacy and numeracy, which can conflict with the play-based approach advocated by the Merdeka Curriculum (Asfiati 2023). Principals must navigate these competing demands by balancing accountability pressures with pedagogical integrity. This requires not only technical expertise but also the ability to communicate effectively with stakeholders and advocate for developmentally appropriate practices.

Overall, the findings demonstrate that the relationship between school leadership policy and early childhood literacy and numeracy development is complex and mediated by multiple factors. Leadership policy influences learning outcomes indirectly by shaping the conditions under which teaching and learning occur. These conditions include the quality of instruction, the capacity of teachers, the design of learning environments, the alignment of assessment practices, and the engagement of stakeholders. The effectiveness of these mechanisms depends on the coherence between policy intentions, institutional capacities, and contextual realities.

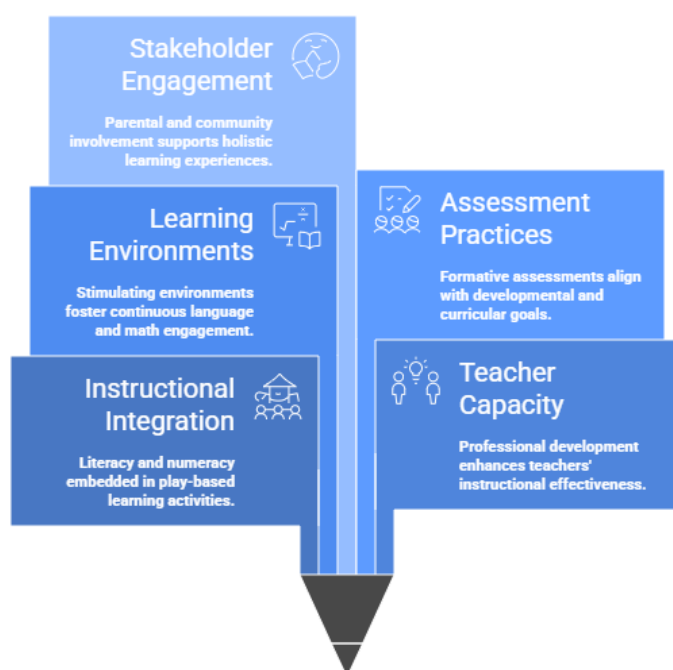


Figure 1. Pathways to Early Literacy and Numeracy

In conclusion, this section underscores the central role of school leadership policy in advancing early learning outcomes within the Merdeka Curriculum framework. By orchestrating a set of interconnected mechanisms, leadership policy creates the enabling conditions necessary for the development of literacy and numeracy in early childhood. However, its impact is contingent upon the alignment of structural, pedagogical, and contextual factors. These findings contribute to the broader discourse on educational leadership by offering a nuanced understanding of how policy translates into practice and, ultimately, into learning outcomes in early childhood education.

4. CONCLUSION

This study set out to examine how school leadership policy shapes early childhood literacy and numeracy development within the implementation of the Merdeka Curriculum. The findings demonstrate that leadership policy is not merely an administrative instrument, but a dynamic and

context-sensitive process that mediates the relationship between curriculum reform and learning outcomes. By moving beyond a procedural understanding of policy, this study reconceptualizes school leadership as an active, interpretive, and practice-oriented force that plays a decisive role in translating national curriculum intentions into meaningful pedagogical realities.

A central conclusion emerging from this study is that the influence of leadership policy on early learning outcomes is indirect yet systematic, operating through a set of interconnected mechanisms. These include the integration of literacy and numeracy within play-based pedagogy, the strengthening of teacher capacity, the structuring of supportive learning environments, the alignment of assessment practices, and the engagement of stakeholders. Together, these mechanisms form a coherent system through which leadership policy shapes the quality of teaching and learning in early childhood education.

The study also highlights that effective leadership policy is characterized by its ability to foster pedagogical coherence and professional agency. Principals who adopt an instructional and collaborative leadership approach are more successful in aligning curriculum goals with classroom practices, while simultaneously empowering teachers to act as active agents of change. This alignment ensures that literacy and numeracy development is not treated as an isolated objective, but as an integral component of holistic early childhood learning. In this regard, leadership policy functions as both a coordinating and enabling mechanism, integrating various elements of the educational process into a unified framework.

At the same time, the findings reveal that the enactment of leadership policy is shaped by contextual and structural conditions. Variations in leadership capacity, institutional resources, and socio-cultural expectations significantly influence how the Merdeka Curriculum is implemented and how learning outcomes are achieved. In particular, the tension between academic expectations and developmentally appropriate practices presents a critical challenge for school leaders. Addressing this tension requires adaptive leadership that is capable of balancing policy demands with the principles of early childhood education.

From a theoretical perspective, this study contributes to the broader discourse on educational leadership by offering a nuanced understanding of policy enactment in early childhood settings. It positions leadership policy as a multi-layered construct encompassing interpretive, relational, and structural dimensions, and demonstrates how these dimensions interact to influence learning outcomes. By linking leadership practices with early literacy and numeracy development, the study provides a more comprehensive framework for understanding the role of leadership in educational reform.

From a practical standpoint, the findings carry important implications for policymakers and educational practitioners. Strengthening leadership capacity should be a priority in the implementation of curriculum reform, particularly in early childhood settings where pedagogical practices are highly sensitive to developmental considerations. Professional development programs for school leaders should emphasize instructional leadership, policy interpretation, and collaborative practices. Additionally, efforts to improve early literacy and numeracy outcomes must be supported by adequate resources, continuous teacher development, and strong partnerships with families and communities.

In conclusion, the success of the Merdeka Curriculum in enhancing early childhood literacy and numeracy depends not only on the design of the curriculum itself but also on the effectiveness of school leadership policy in its enactment. Leadership policy serves as the critical link between reform intentions and educational outcomes, shaping the conditions under which children learn and develop. By fostering coherence, empowering teachers, and responding to contextual realities, effective leadership policy can significantly contribute to the development of foundational competencies that are essential for lifelong learning.

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