

LEADING DEEP LEARNING IN PRIMARY EDUCATION: HOW SCHOOL PRINCIPALS LEVERAGE TEACHER LEARNING COMMUNITIES TO ENHANCE EDUCATIONAL QUALITY

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ABSTRACT

This study explores how school principals lead the implementation of deep learning in primary education by leveraging teacher learning communities to enhance educational quality. Responding to increasing demands for meaningful, higher-order learning in the twenty-first century, the study adopts a qualitative case study design to examine leadership practices in a primary education context. Data were collected through semi-structured interviews, non-participant observations, and document analysis involving school principals, teacher learning community coordinators, and primary school teachers. The findings reveal that leadership in deep learning is enacted through a coherent, integrated set of strategies. These include articulating and institutionalizing a shared pedagogical vision, positioning teacher learning communities as core mechanisms for collaborative professional learning, reorienting instructional supervision toward reflective dialogue, and managing structural and cultural conditions that sustain instructional change. Teacher learning communities function as mediating structures that translate leadership vision into classroom-level deep learning practices. When supported by reflective supervision and aligned organizational conditions, these communities foster teachers' pedagogical innovation and collective responsibility for student learning. The study contributes to the literature on instructional leadership and professional learning communities by conceptualizing leadership for deep learning as a systemic and relational process. In practice, the findings offer insights for school leaders and policymakers seeking to embed deep learning into everyday professional routines in primary education.

Keywords: instructional leadership; deep learning; teacher communities; primary education

INTRODUCTION

In recent decades, educational systems worldwide have faced increasing pressure to move beyond surface-level learning and equip students with the cognitive, social, and metacognitive competencies required in the twenty-first century. Global policy frameworks and empirical research consistently emphasize the need for learning environments that foster deep understanding, critical thinking, creativity, collaboration, and the ability to transfer knowledge across contexts (OECD, 2020). In response, deep learning has gained renewed attention as a pedagogical approach that prioritizes meaningful engagement with content, higher-order thinking, and sustained cognitive challenge over rote memorization or procedural compliance.

Deep learning in education refers to learning processes in which students actively construct knowledge, integrate new information with prior understanding, reflect on their thinking, and apply learning to authentic and complex problems (Fullan et al., 2020). Empirical evidence suggests that deep learning-oriented instruction is associated with improved conceptual understanding, student motivation, and long-term learning outcomes, particularly when supported by collaborative and inquiry-based pedagogies (Darling-Hammond et al., 2020). In primary education, where foundational cognitive and dispositional habits are formed, implementing deep learning is especially critical yet also particularly challenging.

Despite its theoretical promise, translating deep learning into everyday classroom practice remains uneven. Numerous studies report that teachers often struggle to move beyond traditional, teacher-centered instructional models due to limited pedagogical knowledge, time constraints, assessment pressures, and insufficient professional support (Avalos, 2020; Schleicher, 2021). These challenges are amplified in primary school contexts, where teachers are responsible for multiple subjects and may have limited opportunities for sustained professional learning focused on instructional innovation.

Within this context, school leadership—and particularly the role of school principals—has emerged as a decisive factor in shaping the conditions under which deep learning can flourish. Research on instructional and transformational leadership consistently demonstrates that principals influence teaching and learning indirectly by articulating a clear instructional vision, fostering collaborative cultures, allocating resources strategically, and supporting teacher professional learning (Leithwood et al., 2020). When school leaders prioritize learning-centered leadership, they create organizational environments that enable teachers to experiment with new pedagogies, reflect on practice, and engage in continuous improvement.

One of the most powerful ways principals can support deep learning is by developing and strengthening teacher learning communities, commonly known as professional learning communities (PLCs). PLCs are characterized by shared goals, collective responsibility for student learning, reflective dialogue, and collaborative inquiry into instructional practice (Stoll et al., 2020). Recent research indicates that well-functioning teacher learning communities contribute to improved instructional quality, stronger teacher efficacy, and greater coherence between school-level vision and classroom practice (Vescio et al., 2021).

However, the effectiveness of teacher learning communities is highly contingent on leadership. Without purposeful guidance, PLCs risk becoming administratively driven or ritualistic, with limited impact on instructional change (Harris & Jones, 2022). Principals play a critical role in ensuring that teacher collaboration remains focused on deep learning goals, grounded in evidence of student learning, and embedded within broader school improvement strategies.

In many developing and decentralizing education systems, including Indonesia, teacher learning communities take locally contextualized forms. At the primary level, teacher working groups function as collaborative forums where teachers share instructional practices, develop lesson plans, and reflect on classroom challenges. While these groups hold significant potential to support deep learning, empirical research examining how school principals strategically leverage such communities to drive instructional transformation remains limited, particularly in primary education contexts.

This gap is notable given the growing policy emphasis on student-centered learning and curriculum reform. National reforms increasingly call for pedagogical approaches that emphasize conceptual understanding, inquiry, and real-world application of knowledge. However, policy aspirations often outpace schools' organizational capacity to enact meaningful change. Understanding how principals translate reform ideals into school-level practices—especially through teacher learning communities—is therefore an urgent research priority.

Several recent studies provide important insights into this issue, yet also reveal critical limitations. For example, Leithwood et al. (2020) demonstrated that instructional leadership practices such as setting clear learning goals and supporting teacher collaboration are positively associated with improved teaching quality. However, their large-scale quantitative design provides limited insight into how leadership strategies are enacted in specific school contexts. Similarly, Darling-Hammond et al. (2020) highlighted the importance of collaborative professional development for instructional improvement. However, they did not examine in depth how school leaders orchestrate such collaboration within existing organizational structures.

A more recent qualitative study by Harris and Jones (2022) explored the role of school leadership in sustaining PLCs and found that leadership coherence and relational trust were key enabling factors. Nevertheless, their study focused primarily on secondary schools in high-income contexts, leaving unanswered questions about leadership practices in primary education and across diverse sociocultural settings. Collectively, these studies underscore the importance of leadership and collaboration but do not explain how principals strategically mobilize teacher learning communities to support deep learning at the classroom level, particularly in primary schools.

These limitations point to a clear research gap. While existing literature establishes that school leadership and teacher collaboration matter, there is insufficient empirical understanding of the management strategies principals use to align teacher learning communities with deep learning goals, especially in primary education settings and non-Western contexts. Moreover, few studies adopt an in-depth qualitative approach that captures the perspectives of principals and teachers simultaneously, allowing for a nuanced analysis of leadership practices, professional learning, and instructional change.

Addressing this gap is important for both theory and practice. From a theoretical perspective, examining leadership for deep learning through the lens of teacher learning communities contributes to ongoing debates about instructional leadership, distributed leadership, and organizational learning in schools. From a practical standpoint, such research can inform principals, policymakers, and teacher educators about effective strategies for embedding deep learning within everyday school routines rather than treating it as a short-term innovation.

Against this backdrop, the present study investigates how school principals lead the implementation of deep learning in primary education by leveraging teacher learning communities. Specifically, it explores the strategies principals employ to articulate a learning-centered vision, support collaborative professional learning, and create organizational conditions conducive to deep learning-oriented instruction. By focusing on principals' leadership practices and teachers' collaborative experiences, this study seeks to illuminate the mechanisms through which deep learning is translated from policy discourse into classroom practice.

The novelty of this study lies in its integrative focus on deep learning, school leadership, and teacher learning communities within the context of primary education. Unlike prior research that examines these elements in isolation, this study conceptualizes them as interdependent components of instructional transformation. Furthermore, adopting a qualitative case study approach provides rich, context-sensitive insights into leadership practices that are often overlooked in large-scale studies.

The purpose of this study is, therefore, to generate an in-depth understanding of how school principals strategically leverage teacher learning communities to enhance deep learning and educational quality in primary schools. In doing so, the study aims to contribute to the international literature on instructional leadership and professional learning while offering empirically grounded insights for school leaders seeking to lead meaningful and sustainable pedagogical change.

METHODOLOGY

Research Design and Approach

This study adopted a qualitative research approach employing a case study design to examine how school principals lead the implementation of deep learning through teacher learning communities in primary education. A qualitative case study was considered the most appropriate design because the research sought to explore leadership strategies, professional interactions, and instructional practices as they unfold within a real-life educational context. Such phenomena are complex, socially constructed, and context-dependent, making them unsuitable for reductionist or purely quantitative investigation. The study was guided by an interpretivist paradigm, emphasizing participants' lived experiences, meanings, and interpretations of leadership and professional collaboration. This approach enabled the researcher to capture not only what leadership strategies were implemented, but also how these strategies were perceived, enacted, and negotiated by principals and teachers within the teacher learning community.

Research Context

The research was conducted within a primary education teacher learning community that functions as a collaborative professional forum involving multiple schools. This community provides a structured space for teachers and school principals to engage in joint lesson planning, pedagogical discussions, instructional reflection, and professional development activities to improve teaching quality. Although locally organized, the teacher learning community in this study reflects key characteristics of professional learning communities (PLCs) described in international literature, including shared learning goals, collective responsibility for instructional improvement, and reflective professional dialogue. This context offered a valuable opportunity to examine how globally recognized leadership and learning concepts—such as instructional leadership and deep learning—are enacted within a locally grounded professional structure.

Participants and Sampling Strategy

Participants in this study included school principals, teacher learning community coordinators, and primary school teachers who were directly involved in implementing deep learning-oriented instructional practices. School principals were selected due to their formal responsibility for instructional leadership, supervision, and organizational decision-making. Coordinators and teachers were included because of their active participation in collaborative professional learning and classroom-level implementation. A purposive sampling strategy was used to ensure that participants possessed relevant experience and knowledge aligned with the research objectives. Selection criteria included active involvement in teacher learning community activities, direct engagement in instructional leadership or classroom teaching, and at least three years of professional experience in primary education. This strategy ensured the inclusion of information-rich cases that could provide deep insights into leadership practices and professional collaboration.

Table 1. Participant Profile

Participant Category	Number	Primary Role
School Principals	3	Instructional leadership and supervision
Community Coordinators	2	Facilitation of professional collaboration
Primary School Teachers	10	Classroom implementation of deep learning
Total	15	

Data Collection Methods

Data were collected over four months using multiple qualitative data collection methods to enhance depth and triangulation. The primary methods included semi-structured interviews, non-participant observations, and document analysis.

Semi-Structured Interviews

Semi-structured interviews were conducted with all participants to explore their experiences, perceptions, and interpretations of leadership and the implementation of deep learning. Interview protocols were designed to allow flexibility while ensuring coverage of key themes, including leadership strategies, collaborative professional learning, and instructional change. Interviews lasted between 45 and 90 minutes and were audio-recorded with participants' informed consent.

Observations

Non-participant observations were carried out during teacher learning community meetings, professional development sessions, and selected classroom activities. Observations focused on leadership practices enacted during collaborative activities, patterns of teacher interaction, and instructional strategies reflecting deep learning principles. Detailed field notes were maintained to capture both descriptive accounts and reflective insights.

Document Analysis

Document analysis was used to complement interview and observational data. Documents reviewed included school development plans, instructional supervision records, lesson plans, meeting agendas, and reports of teacher learning community activities. These documents provided insight into the formal articulation of deep learning goals and their alignment with leadership practices.

Table 2. Data Sources and Analytical Purposes

Data Source	Analytical Purpose
Interviews	Exploring leadership strategies and professional experiences
Observations	Examining enacted leadership and collaborative practices
Documents	Understanding policy alignment and institutional support

Data Analysis Procedures

Data analysis followed an iterative, inductive thematic approach. First, all interview transcripts, field notes, and documents were read repeatedly to achieve data familiarization. Second, initial codes were generated to identify meaningful units related to leadership practices, professional collaboration, and the implementation of deep learning. Third, related codes were clustered into broader themes representing key leadership strategies and organizational mechanisms. Finally, themes were interpreted in relation to existing theoretical frameworks on instructional leadership and professional learning communities. Throughout the analysis, constant comparison across data sources was employed to refine themes and ensure consistency. This iterative process enabled the researcher to move beyond surface description toward analytical interpretation.

Trustworthiness and Rigor

To ensure methodological rigor, the study applied established criteria for trustworthiness in qualitative research. Credibility was enhanced through triangulation of interviews, observations, and documents, as well as member checking with selected participants. Transferability was addressed by providing rich contextual descriptions that allow readers to assess the applicability of findings to other settings. Dependability was supported by maintaining an audit trail documenting research decisions and analytical procedures. Confirmability was strengthened through peer debriefing with colleagues experienced in qualitative educational research.

Table 3. Strategies to Ensure Trustworthiness

Criterion	Strategy Applied
Credibility	Data triangulation, member checking
Transferability	Thick contextual description
Dependability	Audit trail
Confirmability	Peer debriefing

RESULT AND DISCUSSION

Analysis of interview transcripts, observational data, and documents yielded four major themes that illustrate how school principals lead the implementation of deep learning through teacher learning communities in primary education. These themes reflect interconnected leadership strategies that shape professional collaboration, instructional practices, and organizational conditions supporting deep learning.

Articulating and Institutionalizing a Shared Vision for Deep Learning

A central finding of this study is the pivotal role of school principals in articulating and institutionalizing a shared vision of deep learning. Principals consistently emphasized that deep learning was not treated as a short-term instructional innovation but as a core pedagogical

orientation guiding teaching and learning practices across schools. Interview data revealed that principals actively communicated the vision of deep learning during staff meetings, teacher learning community sessions, and instructional supervision activities. Rather than imposing directives, principals framed deep learning as a collective commitment to improving students' conceptual understanding and higher-order thinking. One principal explained:

"Deep learning is not just about changing methods. It is about changing how teachers see learning itself. We continuously discuss this in our teacher community so that everyone understands the direction we are heading." (Principal 1)

Teachers echoed this perspective, noting that the clarity and consistency of leadership messages helped align their instructional planning with deep learning principles. Observations of teacher learning community meetings confirmed that discussions frequently returned to shared learning goals, student understanding, and meaningful engagement rather than to curriculum coverage alone. This finding suggests that leadership for deep learning begins with vision coherence, in which principals translate abstract pedagogical concepts into shared professional language embedded in collaborative routines.

Leveraging Teacher Learning Communities as Engines of Professional Learning

The second theme highlights how principals strategically leveraged teacher learning communities as the primary mechanism for supporting deep learning implementation. Rather than relying on one-off workshops or external training, principals positioned the teacher learning community as an ongoing space for collaborative inquiry, reflection, and pedagogical experimentation. Teachers reported that regular community meetings enabled them to discuss instructional challenges, co-design learning activities, and reflect on student responses. These collaborative processes supported the gradual internalization of deep learning practices. As one teacher noted:

"Through the teacher learning community, we do not just receive materials. We discuss our classroom experiences, what works and what does not, especially when trying to make students think more deeply." (Teacher 4)

Principals played an active facilitative role by allocating time for collaboration, encouraging peer sharing, and ensuring that discussions remained focused on instructional improvement rather than administrative matters. Observational data showed that principals frequently participated in sessions, not as evaluators but as co-learners, which contributed to a sense of professional trust. This theme underscores the importance of leadership-enabled collaboration, where teacher learning communities serve as engines of sustained professional learning rather than as formal compliance structures.

Instructional Supervision Focused on Reflection and Improvement

Another prominent theme concerns the way principals reoriented instructional supervision to support deep learning. Supervision practices moved beyond procedural compliance toward reflective dialogue centered on teaching strategies, student engagement, and depth of learning. Principals reported conducting classroom observations followed by feedback sessions that emphasized reflective questioning rather than prescriptive judgments. Feedback often focused on how learning tasks encouraged student reasoning, discussion, and knowledge transfer. One principal described this approach as follows:

"When I observe a class, I do not immediately judge. I ask teachers to reflect: Why did students respond this way? What thinking skills were developed? This reflection is more important than checking lesson plans." (Principal 2)

Teachers perceived this supervisory approach as supportive rather than evaluative. Several teachers indicated that reflective supervision increased their confidence to experiment with new instructional strategies associated with deep learning.

"Because supervision is more about discussion, I feel safer trying new approaches. If something does not work, we talk about how to improve it." (Teacher 7)

These findings suggest that instructional supervision, when aligned with deep learning goals, becomes a professional learning process rather than a control mechanism.

Managing Structural and Cultural Conditions for Sustainable Implementation

The final theme concerns principals' management of the structural and cultural conditions that sustain the implementation of deep learning. Principals intentionally allocated resources such as time for collaboration, access to learning materials, and opportunities for peer observation to support teacher learning communities. However, participants also acknowledged constraints, particularly time limitations and variations in teachers' pedagogical readiness. Principals addressed these challenges by differentiating support and fostering a culture of mutual assistance among teachers. A teacher learning community coordinator stated:

“Not all teachers move at the same pace. The principal encourages us to support one another instead of competing. This makes learning together possible.” (Coordinator 1)

Document analysis confirmed that school development plans explicitly integrated teacher learning community activities with instructional improvement goals, reinforcing deep learning as an institutional priority rather than an optional initiative. This theme highlights the role of principals as organizational designers, balancing structural management with cultural leadership to sustain deep learning practices over time.

Table 4. Summary of Findings and Supporting Evidence

Theme	Core Focus	Key Evidence
Shared Vision for Deep Learning	Vision alignment and pedagogical coherence	Principal interviews, meeting observations
Teacher Learning Communities	Collaborative professional learning	Teacher interviews, community observations
Reflective Instructional Supervision	Feedback and reflective dialogue	Principal–teacher interviews
Structural and Cultural Support	Resource allocation and collaborative culture	Documents, coordinator interviews

Collectively, these findings demonstrate that effective leadership for deep learning in primary education is not enacted through isolated actions but through a coherent set of interrelated strategies. School principals shape the implementation of deep learning by aligning vision, collaboration, supervision, and organizational conditions within teacher learning communities. These leadership practices enable teachers to move beyond surface instructional change toward sustained professional learning and improved educational quality.

Interrelationships Among Leadership Strategies

Beyond their individual contributions, the four themes identified in this study are deeply interconnected and mutually reinforcing. The findings indicate that school principals' leadership strategies for deep learning operate as an integrated system rather than as isolated practices. The articulation of a shared vision for deep learning served as the foundational driver that oriented all other leadership actions. This shared vision provided a common language and purpose that guided teacher collaboration within the learning community. Without this vision, collaborative activities risked becoming fragmented or driven by administration rather than being learning-focused.

Teacher learning communities functioned as the primary mechanism through which the shared vision was translated into professional practice. Collaborative inquiry, peer discussion, and joint lesson design enabled teachers to collectively interpret deep learning principles and adapt them to classroom realities. These collaborative processes were further strengthened by reflective instructional supervision, which reinforced learning-focused dialogue and continuous improvement. Instructional supervision served as a link between leadership vision and classroom practice. Feedback conversations prompted teachers to reflect on student thinking, instructional design, and learning outcomes, thereby deepening professional learning within the

community. This reflective supervision also fostered a culture of trust, encouraging teachers to experiment with innovative pedagogical approaches without fear of negative evaluation.

Finally, the management of structural and cultural conditions provided the enabling environment for all leadership strategies. The allocation of time, resources, and institutional recognition ensured that teacher learning community activities were sustainable rather than symbolic. Cultural norms emphasizing mutual support and collective responsibility further reinforced teachers' engagement in deep learning-oriented practices. Taken together, these interrelated strategies illustrate that leadership for deep learning is a coherent and systemic process, where vision, collaboration, supervision, and organizational support function in alignment to enhance educational quality.

DISCUSSION

This study sought to understand how school principals lead the implementation of deep learning in primary education by leveraging teacher learning communities. Building on the cross-theme analysis, the discussion interprets the findings through the lenses of instructional leadership, professional learning communities, and organizational learning, highlighting how leadership practices operate as a coherent, systemic process rather than isolated actions.

Leading Deep Learning as a Coherent Leadership System

The findings demonstrate that leadership for deep learning is not reducible to a single strategy or leadership style. Instead, principals enact a coherent leadership system in which vision-building, collaborative professional learning, reflective supervision, and organizational management align. This systemic perspective resonates with recent scholarship emphasizing that successful instructional leadership emerges from the integration of multiple, mutually reinforcing practices (Hallinger et al., 2020; Nguyen et al., 2023). The articulation of a shared vision for deep learning serves as the anchoring mechanism within this system. By consistently framing deep learning as a collective pedagogical commitment rather than a technical innovation, principals create cognitive and normative coherence among teachers. This finding extends prior research on instructional leadership by illustrating how vision-setting becomes operationalized through ongoing professional dialogue rather than symbolic rhetoric alone (Gümüş et al., 2021).

Teacher Learning Communities as Mediating Structures

The study further highlights teacher learning communities as mediating structures that translate leadership vision into instructional practice. Rather than functioning as administrative forums, these communities operate as sites of collaborative inquiry where teachers collectively interpret deep learning principles and adapt them to classroom contexts. This aligns with recent empirical studies showing that PLCs are most effective when explicitly focused on instructional improvement and student learning outcomes (Admiraal et al., 2021). Importantly, the findings underscore the principal's role in shaping the focus and quality of collaboration. By participating as facilitators and co-learners, principals foster relational trust and sustain pedagogical focus within teacher learning communities. This supports distributed leadership perspectives, which argue that leadership influence is amplified when formal leaders intentionally cultivate collective professional agency (Wenner & Campbell, 2017; Liu & Hallinger, 2022).

Reflective Supervision and Professional Learning

A significant contribution of this study lies in its illumination of reflective instructional supervision as a bridge between leadership intentions and classroom practice. Supervision practices centered on reflective dialogue encourage teachers to examine students' thinking, instructional design, and depth of learning. This approach aligns with contemporary views of supervision as professional learning rather than performance monitoring (Sullivan & Glanz, 2020). The findings suggest that reflective supervision strengthens teachers' willingness to take

pedagogical risks, a condition widely recognized as essential to deep learning. This insight extends the existing literature by demonstrating that supervision, when embedded in collaborative professional cultures, reinforces rather than constrains instructional innovation (Pietsch et al., 2022).

Managing Structural and Cultural Conditions for Sustainability

Beyond pedagogical leadership, the study emphasizes principals' roles as organizational designers who manage both structural and cultural conditions to sustain deep learning practices. The intentional allocation of time, resources, and institutional recognition signals that deep learning and teacher collaboration are organizational priorities. These findings echo recent research highlighting the importance of aligning organizational structures with instructional goals to avoid initiative fatigue and superficial reform (Kools & Stoll, 2021). Culturally, principals foster norms of mutual support and collective responsibility, enabling teachers with varying levels of pedagogical readiness to learn together. This finding reinforces organizational learning theories that emphasize the interplay between structure, culture, and leadership in sustaining educational change (Zheng et al., 2020).

Theoretical Contributions

This study contributes to the literature in three key ways. First, it advances understanding of leadership in deep learning by conceptualizing it as a systemic, relational process rather than a set of discrete actions. Second, it extends research on professional learning communities by demonstrating how teacher collaboration mediates the relationship between school leadership and classroom-level deep learning practices. Third, it enriches instructional leadership theory by integrating supervision, collaboration, and organizational management into a unified analytical framework. From a practical perspective, the findings suggest that principals seeking to lead deep learning should prioritize coherence over compliance. Establishing a shared pedagogical vision, investing in teacher learning communities, reorienting supervision toward reflection, and aligning organizational structures with learning goals are critical strategies for enhancing educational quality in primary education.

CONCLUSION

This study examined how school principals lead the implementation of deep learning in primary education by leveraging teacher learning communities. The findings demonstrate that effective leadership for deep learning is enacted through a coherent, integrated set of strategies rather than through isolated actions. Principals play a pivotal role in articulating a shared pedagogical vision, mobilizing teacher learning communities as sites of collaborative inquiry, reorienting instructional supervision toward reflective professional learning, and managing structural and cultural conditions that sustain instructional change. By synthesizing these leadership practices, the study shows that deep learning becomes embedded in everyday professional routines rather than remaining a policy-level aspiration. Teacher learning communities function as critical mediating structures through which leadership intentions are translated into classroom practices. When supported by reflective supervision and aligned organizational conditions, these communities enable teachers to collectively develop pedagogical approaches that foster deeper student engagement and understanding. Overall, the study contributes to a more nuanced understanding of instructional leadership by highlighting its relational, systemic, and context-sensitive nature in deep learning in primary education. Rather than positioning principals as the sole change agents, the findings emphasize leadership as a distributed, collaborative process embedded within professional learning communities.

Several limitations of this study should be acknowledged. First, the research employed a qualitative case study design within a specific primary education context, which may limit the generalizability of the findings. While the study provides rich, context-sensitive insights, future research could employ comparative or mixed-methods designs to examine leadership for deep

learning across diverse school settings. Second, the study primarily focused on the perspectives of principals and teachers. Although this focus aligns with the research objectives, incorporating student perspectives and learning outcomes in future studies would provide a more comprehensive understanding of how leadership and professional collaboration influence deep learning at the learner level. Third, the study examined leadership practices over a limited time frame. Longitudinal research would be valuable in capturing how leadership strategies and teacher learning communities evolve and how deep learning practices are sustained or transformed over time. Despite these limitations, the study offers empirically grounded insights into the leadership conditions that support deep learning in primary education. Future research building on these findings can further refine theoretical models of leadership for learning and inform policy and practice aimed at improving educational quality through collaborative professional learning.

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