



Reframing Educational Administration Innovation in Primary Schools: Evidence-Informed Governance for Effective Learning Environments

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ABSTRACT

This study reconstructs research on innovative educational administration in primary schools by replacing an under-specified single-case design with a structured integrative review and contextual evidence-mapping approach. The source manuscript positioned SDN 1 Banding Agung as an empirical case but did not report participant numbers, sampling logic, interview protocols, observation duration, or auditable primary-data extracts. To preserve analytical integrity, school-specific descriptions are therefore treated as contextual descriptors, while claims about mechanisms and outcomes are grounded in recent peer-reviewed evidence. Sixteen academic sources published between 2019 and 2025, supplemented by an authoritative international education report, were synthesized across five domains: strategic leadership, collaborative governance, teacher professional and digital capacity, equity-responsive resource management, and continuous evaluation. The synthesis indicates that administrative innovation influences learning environments primarily through indirect organizational mechanisms. Meta-analytic evidence links principal practices to teacher well-being, instructional practice, organizational health, and student outcomes, while longitudinal and review evidence highlights teacher collaboration, collective efficacy, digital competence, and coherent implementation routines as critical mediators. Digitalization contributes when it strengthens decision quality, communication, professional learning, and instructional responsiveness, but technology availability alone is insufficient. The study proposes an Integrated Administrative Innovation-to-Learning Environment Framework for resource-sensitive primary schools. Its contribution lies in shifting the unit of analysis from isolated innovations to the governance architecture that enables innovations to become sustainable learning conditions.

Keywords: *digital transformation, educational administration, learning environment, primary school leadership, teacher collaboration*



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INTRODUCTION

Effective learning environments in primary schools are often discussed as classroom-level phenomena, yet many of their enabling conditions are organizational. Scheduling, resource allocation, teacher collaboration, information flows, professional learning, digital infrastructure, school-family communication, and evaluation routines are all shaped by educational administration. Contemporary evidence therefore suggests that school administration should not be treated as a back-office function. It is a governance system that can either enable or constrain instructional quality, teacher agency, inclusion, and organizational health (Liebowitz & Porter, 2019; Meyer et al., 2020).

This perspective is especially relevant as schools move from isolated technology adoption toward broader digital transformation. Digital transformation requires more than replacing paper records with electronic systems. Reviews of school digitalization identify leadership, professional development, digital competence, technology access, organizational readiness, and evaluation as interdependent conditions for sustainable change (Yuliandari et al., 2023; Wohlfart & Wagner, 2022). In primary education, teachers likewise report that technology can support more personalized and interdisciplinary learning, but only when access, training, and leadership are sufficiently strong (Stenbom & Geijer, 2024).

School leadership is a central mechanism in this process because principals shape the structures within which teachers work. A systematic review and meta-analysis of 51 studies found associations between principal behaviors and student achievement of approximately 0.08–0.16 standard deviations, teacher well-being of 0.34–0.38, instructional practice of 0.35, and school organizational health of 0.72–0.81 (Liebowitz & Porter, 2019). These effect estimates should not be interpreted as uniform causal effects, but they demonstrate that administrative and leadership practices have measurable relationships with conditions directly connected to learning. Subsequent research shows that collective efficacy and teacher collaboration are important mechanisms through which leadership contributes to school improvement (Meyer et al., 2020; García-Martínez et al., 2021).

Innovation, however, is difficult to sustain when it remains dependent on an individual principal or a small number of enthusiastic teachers. Longitudinal evidence from school improvement initiatives shows that change requires goal clarity, time, structures for collaboration, staff motivation, and leadership practices that enable teachers to participate in implementation (Meyer et al., 2022). Similarly, transformational leadership for deeper learning operates at a system level by reorganizing collaboration, assessment, time, space, and professional routines rather than focusing exclusively on single classroom innovations (Sliwka et al., 2023). The implication is that educational administration becomes innovative when it creates repeatable organizational conditions for learning, not merely when it introduces a new tool or program.

The source manuscript on SDN 1 Banding Agung identified several potentially relevant practices, including digital attendance, school information systems, virtual communication with parents, participatory planning, teacher professional development, and community support. However, its qualitative case-study design did not report the number or characteristics of participants, sampling procedures, interview questions, observation duration, coding evidence, or primary-data quotations. The conclusion also shifted toward teacher perceptions of information-



technology innovation despite the study being framed around educational administration. These inconsistencies weaken traceability between method, findings, and conclusion. The present study therefore reconstructs the research design rather than reproducing unsupported empirical claims.

The study addresses two questions. First, what mechanisms does recent evidence identify as central to innovative educational administration that supports effective learning environments? Second, how can those mechanisms be organized into a context-sensitive framework relevant to a resource-sensitive primary school such as SDN 1 Banding Agung? The contribution is an Integrated Administrative Innovation-to-Learning Environment Framework that connects leadership, collaboration, digital and professional capacity, equity-responsive resource governance, and continuous evaluation to the organizational mechanisms through which learning conditions improve.

METHODS

Research design

A structured integrative literature review combined with contextual evidence mapping was employed. This design is appropriate when heterogeneous empirical, review, and conceptual studies must be synthesized to develop an explanatory framework rather than a pooled causal estimate (Snyder, 2019). The redesign was necessary because the source manuscript did not contain auditable primary data sufficient to support a conventional qualitative case study. Accordingly, the research does not claim to reproduce interviews or observations that cannot be independently traced.

Evidence scope and selection

The analytical corpus prioritized peer-reviewed publications from the most recent ten-year window, with the final cited academic evidence concentrated in 2019–2025. Studies were retained when they addressed at least one of five domains relevant to school administration and learning environments: principal leadership, teacher collaboration and collective efficacy, teacher digital or professional competence, school digital transformation and resource readiness, or organizational conditions for instructional improvement. High-value evidence included systematic reviews, meta-analyses, longitudinal case research, large-sample studies, and primary-school-specific studies. An international education policy report was used only to situate the framework within broader commitments to equitable and quality education.

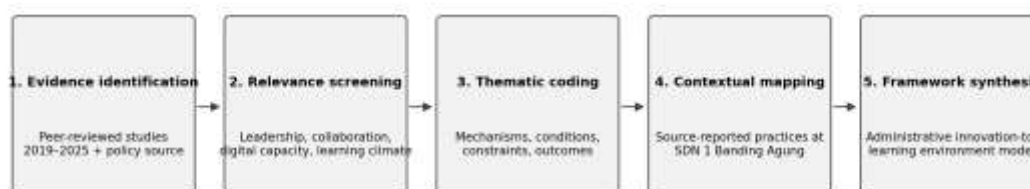
Analytical procedure

The synthesis followed three stages. First, evidence was coded for the administrative mechanism examined, the level of evidence, the reported outcome, and implementation conditions. Second, convergent mechanisms were grouped into five analytical domains: strategic leadership, collaborative governance, digital and professional capacity, equity-responsive resource governance, and continuous evaluation. Third, source-reported descriptions of SDN 1 Banding Agung were mapped against these domains as contextual descriptors. They were not treated as verified measures of effectiveness. This distinction preserves the school context while preventing literature-based assertions from being mislabeled as field findings.



Analytical safeguards

Three safeguards were applied. Claims of effectiveness were tied to identifiable evidence rather than the mere existence of an innovation. Effect-size evidence was interpreted cautiously because the leadership literature remains dominated by observational designs (Liebowitz & Porter, 2019). Finally, technology adoption was analytically separated from pedagogical or organizational transformation. This follows evidence showing that digital competence, professional development, organizational support, and leadership determine whether digital resources become meaningful educational practices (Fernández-Batanero et al., 2020; Claro et al., 2024; Wohlfart & Wagner, 2022).



Structured integrative review with contextual evidence mapping; no unsupported participant-level inference

Figure 1. Analytical workflow of the reconstructed research design

RESULTS AND DISCUSSION

Administrative innovation is leadership-mediated rather than tool-driven

The strongest cross-study pattern is that innovative administration depends on leadership practices that translate vision into routines, resources, and professional conditions. Liebowitz and Porter (2019) show that principal behavior is most strongly associated with school organizational health among the outcomes they synthesized, while also displaying meaningful relationships with teacher well-being and instructional practice. These results imply that the principal's influence on learning is largely mediated through the organizational environment rather than through direct instructional contact with students.

This mechanism is consistent with recent evidence on transformational leadership and school innovation. Sliwka et al. (2023) found that leaders who successfully supported deeper learning addressed systemic conditions such as teacher collaboration, assessment structures, and the use of time and space. In the primary-school digital context, Handayani et al. (2025) similarly identify shared vision, teacher support, continuous professional development, and resource mobilization as central leadership themes. Administrative innovation should therefore be evaluated by whether it reorganizes institutional conditions for learning, not simply by whether the school has adopted digital attendance, an application, or a management information system.

Teacher collaboration is the operational bridge between administration and learning



Evidence consistently positions teacher collaboration as a mechanism that converts leadership intent into instructional change. Meyer et al. (2020), using data from 630 teachers across 29 schools, found that principal leadership had a significant indirect relationship with teacher collaboration through collective efficacy. A systematic review by García-Martínez et al. (2021) likewise identifies communication, openness, participation, trust, and leadership delegation as recurring conditions for successful collaborative school cultures.

Longitudinal evidence adds an implementation perspective. Meyer et al. (2022) show that school improvement initiatives require time, team structures, goal-setting, resources, and active principal support if collaboration is to generate organizational change. This finding is particularly relevant for SDN 1 Banding Agung because the source manuscript emphasizes participatory planning and professional development. Under the reconstructed method, those practices are not treated as proven outcomes; rather, they are interpreted as contextually plausible administrative levers that should be documented and evaluated through meeting records, collaborative lesson artifacts, professional-learning participation, and implementation follow-up.

Digital administration creates value only when it increases institutional capacity

Digitalization can improve administrative efficiency, communication, and access to information, but the literature does not support equating digital use with transformation. Yuliandari et al. (2023), reviewing 65 studies on school digital transformation, identified leadership, digital competence, professional development, technology access, school evaluation, and institutional competence as key implementation factors. Stenbom and Geijer (2024) similarly found that primary teachers expect digitalization to reshape learning and professional roles, but emphasized the need for technology access, comprehensive training, and leadership support.

Teacher capacity is therefore a central administrative responsibility. Fernández-Batanero et al. (2020) found persistent deficiencies in ICT and digital-competence training across the teacher professional-development literature. More recent systematic evidence by Claro et al. (2024) shows that teacher digital competence extends beyond basic technology use to lesson planning, technology-supported teaching, student-centered digital activities, and the development of students' digital skills. An umbrella review by Wohlfart and Wagner (2022) reinforces that digitalization depends on both teacher digital literacy and meaningful technology integration. For school administration, this means professional development should be treated as infrastructure for innovation, not an optional supplement.

Digital leadership and professional learning communities interact

The recent literature also suggests that leadership effects on technology-related innovation may operate through professional learning structures. Rasdiana et al. (2024), using structural modeling with 257 teachers, reported that principal digital leadership supported teacher innovation indirectly through professional learning communities, with a mediated contribution reported at 47.4% in their model. While that result comes from



a different school level and cannot be transferred numerically to SDN 1 Banding Agung, the mechanism is informative: leaders create value when they organize collaboration, knowledge exchange, and sustained support rather than relying on directives alone.

Primary-school-specific evidence also indicates that leadership orientation and digital competence are related. Antonopoulou et al. (2025), in a cross-sectional study of 105 primary teachers, found transformational leadership to be important for satisfaction and the adoption of digital practices while identifying competency gaps that require targeted professional development. Together, these findings support an administrative model in which digital leadership, teacher development, and professional collaboration are designed as an integrated system.

Learning-environment outcomes should be evaluated through measurable organizational pathways

A major weakness in many administrative innovation narratives is the direct leap from innovation activity to claims about improved learning environments. The evidence supports a more cautious pathway. Leadership shapes organizational health, teacher well-being, collaboration, and instructional practice; these conditions then influence student engagement and learning opportunities. Bond et al. (2020), although focused on higher education, demonstrates the importance of distinguishing behavioral, affective, and cognitive engagement rather than treating engagement as a single undifferentiated outcome. For primary schools, the same measurement logic is useful: an effective learning environment should be evidenced through observable indicators such as attendance stability, student participation, classroom interaction, teacher responsiveness, inclusion, family communication, and instructional continuity.

This reframing changes the role of administrative data. Digital attendance, school-management systems, and communication platforms should generate decision-relevant information rather than merely electronic records. A mature administrative innovation system uses such information to identify participation problems, coordinate interventions, allocate resources, and evaluate whether organizational changes improve the day-to-day conditions of teaching and learning.

Evidence source	Design / scope	Key evidence	Administrative implication
Liebowitz & Porter (2019)	Systematic review and meta-analysis; 51 studies	Leadership associated with student, teacher, instructional, and organizational outcomes; largest association with organizational health	Invest in leadership capacity and evaluate organizational conditions, not only student scores
Meyer et al. (2020)	SEM; 630 teachers, 29 schools	Collective efficacy mediated the	Build structures that strengthen collective



		relationship between principal leadership and teacher collaboration	efficacy and teacher collaboration
García-Martínez et al. (2021)	Systematic review; 18 studies	Trust, communication, participation, and leadership delegation support collaborative culture	Institutionalize collaborative routines and shared decision-making
Yuliandari et al. (2023)	Systematic review; 65 studies	Leadership, digital competence, professional development, access, evaluation, and school competence are recurring digital-transformation factors	Treat digital transformation as an organizational system
Claro et al. (2024)	Systematic review; 44 quantitative studies	Digital competence includes planning, teaching, student-centered use, and development of student digital skills	Move teacher training beyond platform operation toward pedagogical integration
Stenbom & Geijer (2024)	Longitudinal focus-group perspective, primary teachers	Digital transformation requires access, training, leadership, and evolving teacher roles	Align administrative support with teacher-role transformation

Table 1. Selected evidence and administrative implications

An integrated framework for administrative innovation

The synthesis supports five interdependent domains. Strategic leadership provides direction and aligns innovation with learning priorities. Collaborative governance distributes agency and creates professional trust. Digital and data capacity supplies infrastructure for coordination and evidence-informed decision-making. Equity-responsive resource governance ensures that innovation does not depend on uneven access or informal workarounds. Continuous evaluation closes the loop by testing whether administrative change actually improves learning conditions. The framework is deliberately systemic: weakness in one domain can neutralize strength in another.

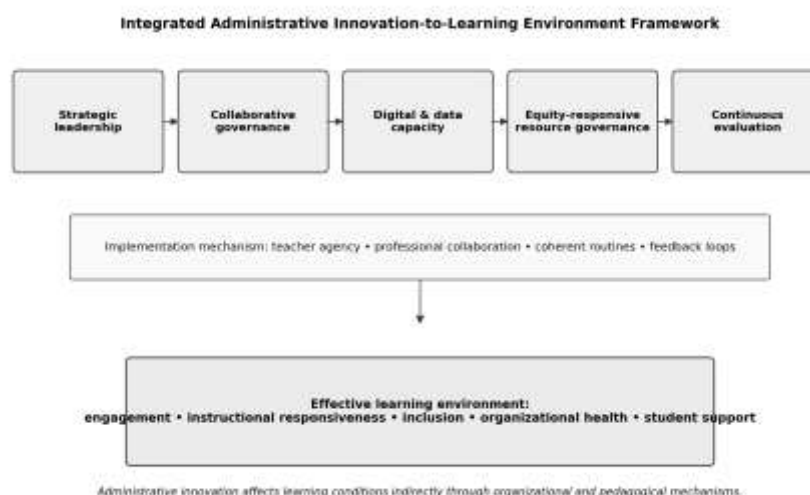


Figure 2. Integrated Administrative Innovation-to-Learning Environment Framework

Contextual implications for SDN 1 Banding Agung

For SDN 1 Banding Agung, the source-reported practices can be reorganized into an evidence-oriented implementation agenda. Digital attendance and information systems should be linked to clearly defined decisions, such as early identification of attendance problems or resource needs. Teacher workshops should be embedded within professional learning communities that produce observable artifacts and follow-up changes in practice. Participatory planning should be documented through decision logs and role allocation. Parent communication should be evaluated for reach, response time, and inclusion rather than merely frequency. Community partnerships should be connected to explicit school priorities and sustainability plans.

This approach also clarifies what future empirical research should measure. A locally validated study could collect baseline and follow-up indicators of teacher collaboration, digital competence, administrative response time, participation in professional learning, student attendance, classroom engagement, and family communication. Qualitative interviews could then explain mechanisms and implementation barriers. Such a mixed-method design would allow the school to move from plausible innovation narratives to measurable evidence of administrative effectiveness.

Limitations and future research

The reconstructed study does not provide causal estimates for SDN 1 Banding Agung because participant-level primary evidence from the original case was not available. The proposed framework is therefore evidence-informed and contextually mapped, not locally validated. The evidence base also combines studies from different countries, school levels, and research designs. Future research should validate the framework through a longitudinal mixed-method design in primary-school settings, with transparent sampling, auditable instruments, baseline measures, implementation records, and outcome indicators. Comparative multi-school research would further test



whether the framework remains useful under different infrastructure and governance conditions.

CONCLUSION

Innovative educational administration should be understood as the deliberate redesign of organizational conditions that enable better teaching and learning, rather than as the introduction of isolated administrative or digital tools. The reconstructed evidence shows that school leadership, teacher collaboration, collective efficacy, professional and digital competence, resource readiness, and continuous evaluation form an interconnected governance architecture. Meta-analytic evidence indicates that principal practices are associated with student outcomes, teacher well-being, instructional practice, and particularly organizational health, while longitudinal and review studies demonstrate that sustainable change depends on structures for collaboration, implementation time, professional learning, and shared agency. Digital transformation adds value when it improves coordination, data use, communication, professional support, and instructional responsiveness; technology availability alone does not constitute innovation. For SDN 1 Banding Agung, the source-reported practices are best treated as contextual starting points that require documented indicators and evaluation rather than as verified evidence of effectiveness. The study therefore proposes an Integrated Administrative Innovation-to-Learning Environment Framework consisting of strategic leadership, collaborative governance, digital and data capacity, equity-responsive resource governance, and continuous evaluation. Its central proposition is that administrative innovation affects learning environments indirectly through organizational and pedagogical mechanisms. The framework provides a more defensible basis for school improvement because it links each innovation to implementation conditions, measurable pathways, and learning-environment outcomes. Future longitudinal mixed-method research should test the framework empirically and determine which combinations of administrative practices generate sustainable improvements in resource-sensitive primary-school contexts.

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