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Managerial Supervision in Primary Education: A Systematic Literature Review of Trends, Challenges, and Implications for Teacher Professional Development

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ABSTRACT: Managerial supervision in primary education has recently evolved from a traditional administrative mechanism into a strategic driver for improving instructional quality and teacher professional development. This systematic literature review aims to synthesize empirical and conceptual research published between 2020 and 2025 to identify trends, theoretical orientations, methodological patterns, and implementation challenges in managerial supervision within primary schools. Guided by the PRISMA protocol, ten high-quality studies were selected from an initial pool of 500 publications sourced from Scopus and Google Scholar. Thematic analysis indicates a global shift toward more collaborative, reflective, and data-driven supervisory practices, supported by principals' managerial leadership competence, systematic academic supervision, and the adoption of digital tools for classroom observation and feedback. Distributed leadership also emerged as an effective model for enhancing supervisory reach and strengthening professional learning cultures. Nonetheless, implementation barriers persist, including teacher resistance, limited data literacy, and inadequate digital infrastructure, resulting in inconsistent supervisory

outcomes among schools. The review highlights the need for policies that strengthen supervisory capacity, integrate technology into supervision systems, and accommodate teachers' career stages through adaptable supervisory frameworks. Future research is recommended to employ longitudinal and experimental designs to examine the causal impact of digital-based managerial supervision on teaching quality and student learning achievement.

Supervisi manajerial di pendidikan dasar dalam beberapa tahun terakhir telah mengalami perkembangan dari mekanisme administratif tradisional menjadi penggerak strategis dalam peningkatan kualitas pembelajaran dan pengembangan profesional guru. Kajian literatur sistematis ini bertujuan untuk mensintesis penelitian empiris dan konseptual yang dipublikasikan pada rentang tahun 2020 hingga 2025 guna mengidentifikasi tren, orientasi teoretis, pola metodologis, serta tantangan implementasi supervisi manajerial di sekolah dasar. Berpedoman pada protokol PRISMA, sepuluh studi berkualitas tinggi diseleksi dari sekitar 500 publikasi awal yang bersumber dari basis data Scopus dan Google Scholar. Hasil analisis tematik menunjukkan adanya pergeseran global menuju praktik supervisi yang lebih kolaboratif, reflektif, dan berbasis data, yang didukung oleh kompetensi kepemimpinan manajerial kepala sekolah, pelaksanaan supervisi akademik yang sistematis, serta pemanfaatan perangkat digital untuk observasi kelas dan pemberian umpan balik. Kepemimpinan terdistribusi juga muncul sebagai model yang efektif dalam memperluas jangkauan supervisi dan memperkuat budaya pembelajaran profesional di sekolah. Meskipun demikian, berbagai hambatan implementasi masih ditemukan, antara lain resistensi guru, keterbatasan literasi data, serta infrastruktur digital yang belum memadai, yang pada akhirnya menyebabkan ketidakkonsistenan hasil supervisi antarsekolah. Kajian ini menegaskan pentingnya kebijakan yang berorientasi pada penguatan kapasitas supervisi, integrasi teknologi ke

dalam sistem supervisi, serta penyesuaian kerangka supervisi yang adaptif terhadap tahapan karier guru. Penelitian selanjutnya direkomendasikan untuk menggunakan desain longitudinal dan eksperimental guna mengkaji dampak kausal supervisi manajerial berbasis digital terhadap kualitas pembelajaran dan capaian hasil belajar peserta didik.

Keywords: *Academic supervision; Distributed leadership; Managerial supervision; Primary education; Teacher professional development*

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INTRODUCTION

Managerial supervision in primary education has become a pivotal mechanism for enhancing instructional quality, fostering teacher professional development, and improving overall school effectiveness. Unlike traditional administrative oversight, managerial supervision integrates pedagogical guidance, leadership, and performance evaluation to support both the operational and instructional aspects of schooling (Edi et al., 2024; Qadach et al., 2020; Quilala & Tantiado, 2025). In the context of primary education, where foundational learning experiences critically influence students' academic trajectories and lifelong learning, effective managerial supervision has been shown to improve instructional planning, classroom management, and the adoption of innovative teaching strategies. Supervisors in primary schools are expected to monitor instructional practices, facilitate collaborative teacher reflection, and implement evidence-based quality assurance measures that align with institutional goals and educational policies (Rahmawati & Sumarni, 2022; Sufiyadi & Syukri, 2017; Suwardi et al., 2020). These practices not only strengthen teaching effectiveness but also contribute to the professional growth of educators by fostering reflective, creative, and adaptive instructional practices.

Theoretical perspectives underpinning managerial supervision in primary education are diverse, encompassing transformational leadership theory, distributed leadership theory, and organizational learning theory. Transformational leadership emphasizes the supervisor's role in inspiring teachers, promoting innovation, and fostering commitment to shared instructional goals, which are critical for sustaining school improvement and enhancing learning outcomes

(Gao et al., 2024; Satyawati, 2020; Syahrir et al., 2025). Distributed leadership highlights collaborative decision-making and shared responsibility among school leaders, instructional coaches, and teachers, facilitating professional learning communities that enhance instructional quality and student achievement (Galdames-Calderón, 2023; Goos & Martin, 2019; Nadeem, 2024). Organizational learning theory emphasizes reflective practice, knowledge sharing, and adaptive change, suggesting that effective managerial supervision must cultivate a school culture that supports continuous professional learning, evidence-based innovation, and systematic evaluation of teaching and learning processes (Arif et al., 2022; Bibi & Akram, 2022; Christensen & Jerrim, 2025). Together, these frameworks provide a holistic lens to understand how supervisory practices can simultaneously improve instructional quality, teacher competence, and organizational effectiveness in primary schools.

Recent research indicates an increasing role of digital and data-driven approaches in managerial supervision, particularly in enhancing instructional planning, teacher performance monitoring, and school management. Digital platforms, performance dashboards, and observation applications have facilitated real-time feedback, evidence-based evaluation, and professional mentoring, thereby enhancing teacher accountability and instructional innovation (Kaur & Chahal, 2024; Moon et al., 2023; Nguyen et al., 2024). Despite these advancements, implementation remains uneven across schools due to disparities in digital literacy, infrastructure, and institutional support, highlighting the need for further research on effective integration of technology-mediated supervision in primary education contexts (Afifah et al., 2025; Bintang et al., 2024; Sutrisno et al., 2024). Moreover, managerial supervision relies heavily on relational factors, including trust, communication quality, and collaborative problem-solving between supervisors and teachers, which significantly influence instructional improvement, teacher motivation, and innovative classroom practices (Lorensius et al., 2022; Maisura et al., 2025; Riyadi, 2025). These findings underscore the importance of managerial supervision as a multidimensional practice that combines instructional guidance, leadership, and technology-mediated support.

Despite the growing body of research, studies on managerial supervision in primary education remain fragmented. Many studies focus on specific aspects, such as instructional leadership, teacher evaluation, or school management, without integrating these into a comprehensive, evidence-based framework that can inform policy and practice (Guimarães & Lima, 2021; Hallinger, 2018, 2019).

Methodologically, most studies employ cross-sectional designs, offering limited insight into longitudinal effects on teaching quality or student learning outcomes. Comparative research across cultural and policy contexts is scarce, which constrains the generalizability of findings. Furthermore, research examining the integration of digital supervision tools, AI-assisted monitoring, and innovative instructional strategies in primary schools is still underdeveloped, leaving critical gaps in understanding how managerial supervision can effectively enhance teacher professional development, instructional quality, and school innovation.

Given these gaps, this study aims to systematically synthesize research on managerial supervision in primary education from 2010 to 2025. Specifically, the objectives are to identify trends, theoretical orientations, methodological patterns, and practical challenges in managerial supervision, as well as to propose directions for future research that can inform evidence-based practices, foster teacher professional development, and support innovative instructional planning in primary schools. By integrating qualitative, quantitative, and mixed-method studies, this systematic literature review seeks to provide actionable insights for school leaders, policymakers, and researchers committed to improving instructional quality and fostering sustainable educational innovation in primary education.

METHODS

This study employed a systematic literature review (SLR) approach to comprehensively synthesize empirical and theoretical research on managerial supervision in primary education from 2010 to 2025. A systematic review was deemed appropriate as it enables the identification of research trends, theoretical frameworks, methodological patterns, and evidence-based gaps across diverse educational contexts, thereby providing a robust foundation for developing future research agendas (Regassa & Mamo, 2024; Zohriah et al., 2022). The review process followed established SLR guidelines, including the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA), to ensure methodological transparency, replicability, and rigor. A structured search strategy was implemented across multiple databases, including Scopus, Web of Science, ERIC, Google Scholar, and relevant national journals indexed in SINTA, to capture both international and national studies. Keywords were carefully selected to align with the focus of the study and included “managerial supervision,” “primary education,” “instructional leadership,” “teacher professional development,” and “school

supervision.” Boolean operators and truncation symbols were applied to refine search results and maximize relevance.

Inclusion and exclusion criteria were predefined to ensure consistency and relevance of the selected literature. Studies were included if they addressed managerial supervision or instructional leadership within primary education contexts, provided empirical or conceptual insights into supervisory practices, and were published in peer-reviewed journals between 2020 and 2025. Articles focusing solely on secondary or tertiary education, or those lacking substantive methodological or theoretical contributions, were excluded. After initial retrieval, duplicate records were removed, and titles and abstracts were screened for relevance. Full-text screening was subsequently conducted to confirm alignment with the research focus, resulting in a final dataset of studies deemed suitable for qualitative synthesis. Data extraction involved systematically coding key information from each article, including authorship, publication year, country/context, research design, sample characteristics, supervisory practices investigated, theoretical frameworks employed, and principal findings.

To enhance reliability and minimize bias, the study adopted a dual-reviewer approach, whereby two independent reviewers conducted the selection and coding processes, and discrepancies were resolved through discussion and consensus. The extracted data were analyzed thematically to identify recurring trends, conceptual models, methodological approaches, and observed challenges in managerial supervision. Patterns were further classified according to dimensions such as instructional leadership, digital or technology-mediated supervision, teacher professional development outcomes, and cross-cultural or policy-related factors. The synthesis not only highlighted existing knowledge but also identified under-researched areas and methodological limitations, thereby providing a foundation for generating practical recommendations and a forward-looking research agenda in primary education supervision.

FINDINGS AND DISCUSSION

Findings

In the initial stage of this research, articles were identified through searches of several electronic databases in accordance with the established research criteria. All obtained articles were then selected through several stages, including title and abstract screening, duplication checking, and full-text eligibility assessment. This selection process followed the Preferred Reporting Items for Systematic Reviews

and Meta-Analyses (PRISMA) guidelines, which aim to ensure that only relevant articles meeting high methodological standards are used in the final analysis. The article selection stages, along with the number of publications at each stage, are detailed in the following PRISMA Flow Diagram.

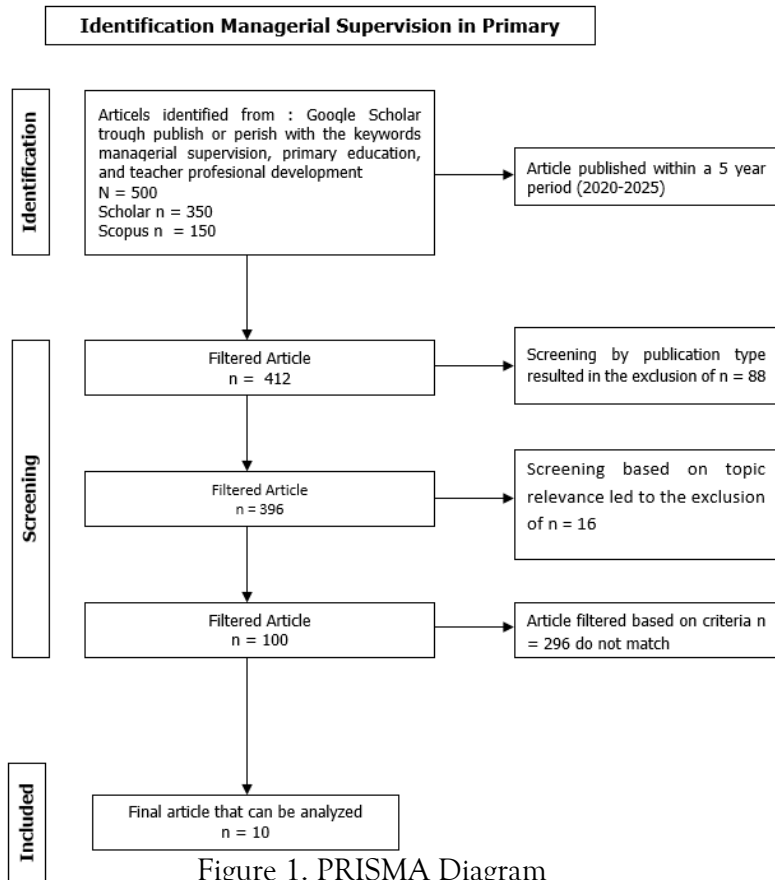


Figure 1. PRISMA Diagram

Figure 1 presents the PRISMA flow diagram that outlines the systematic process of article selection, starting from identification to the final inclusion stage. Initially, a total of 500 records were identified through database searches in Google Scholar using Publish or Perish, based on the keywords “managerial supervision,” “primary education,” and “teacher professional development,” consisting of 350 records from Google Scholar and 150 from Scopus. Following the removal of articles that did not fall within the five-year publication range (2020–2025) or were not categorized as peer-reviewed scientific papers, 88 records were excluded, leaving 412 articles for preliminary screening. Title and abstract screening further removed 16 irrelevant studies, resulting in 396 papers eligible for content relevance evaluation. In the eligibility screening stage, 296 records were excluded

due to methodological weaknesses, insufficient data, lack of alignment with managerial supervision themes, or limited relevance to teacher professional development in primary education. Consequently, 100 full-text articles were rigorously assessed.

Ultimately, 10 high-quality studies met all predetermined eligibility criteria and were included in the final synthesis. These articles demonstrated a strong methodological foundation, relevance to the research focus, and clear contributions toward understanding managerial supervision practices, current trends, challenges, and implications for teacher professional development in primary education contexts. This structured filtering procedure ensures transparency, scientific rigor, and replicability in the review method. In line with international standards for systematic literature reviews, the process not only improves the reliability of synthesized findings but also provides a traceable selection audit trail for future scholarly development in the field of educational management and supervision.

Table 1. Result of Journal Review Based on Inclusion Criteria

No	Title	Authors	Journal
1	Pedagogical supervision and change: dynamics of collaboration and teacher development	(de Nazaré Coimbra et al., 2020)	International Journal of Management Science and Business Administration
2	Principal Competence and Academic Supervision on Vocational Teacher Performance	(Warman, 2022)	Journal of Education and Learning Innovation
3	The Principal's Role as Education Supervisor in Improving Teacher Professionalism	(Amelia et al., 2022)	Nidhomul Haq: Jurnal Manajemen Pendidikan Islam
4	The Competence Of The Madrasa Head In Improving Teacher Professionalism And Performance At Mi Al-Maarif Bojongsari, Cilacap District	(Pamuji & Limei, 2023)	Pengabdian: Jurnal Abdimas

No	Title	Authors	Journal
5	School Counseling Site Supervision: Training Recommendations to Benefit School Counselor Interns and Site Supervisors	(C. R. Smith et al., 2022)	Journal of Counselor Preparation and Supervision
6	Competence and challenge in professional development: teacher perceptions at different stages of career	(Keller-Schneider et al., 2020)	Journal of Education for Teaching
7	The professional development needs of beginning and experienced teachers in four municipalities in Sweden	(Karlberg & Bezzina, 2022)	Professional Development in Education
8	The effects of distributed leadership on teacher professionalism: The case of Korean middle schools	(Joo, 2020)	International Journal of Educational Research
9	<u>International Journal of Educational Research</u>	(Mayer & Mills, 2021)	European Journal of Teacher Education
10	Team Teaching and Learning: A Model of Effective Professional Development for Teachers	(R. Smith et al., 2020)	The Professional Educator

Table 1 provides a comprehensive summary of the ten studies that met all inclusion criteria and collectively represent current empirical and conceptual developments related to managerial supervision in primary education. Overall, the selected articles demonstrate that managerial supervision extends beyond administrative oversight and functions as a strategic mechanism for fostering professional collaboration, pedagogical reflection, and the continuous improvement of teacher competence. The first article highlights the transformative and collaborative nature of pedagogical supervision, emphasizing that meaningful changes in instructional

practice are strongly shaped by the quality of supervisor–teacher interactions. Other studies, such as those by Warman, 2022 and by Amelia et al., 2022., reveal that principals' managerial competencies including the ability to design academic supervision, conduct systematic performance monitoring, and apply data driven decision making directly support improvements in teacher professionalism, particularly within vocational and Islamic primary school settings.

Several articles in the table further expand the understanding of professional development by examining teachers' evolving needs across different career stages (e.g., Keller-Schneider et al.) and by demonstrating how distributed leadership strengthens teachers' professional identities and organizational cohesion. Findings from Karlberg & Bezzina, 2022 underscore that teachers' professional development needs are strongly shaped by local policy contexts, suggesting that managerial supervision should be adaptive and responsive to systemic and cultural variations. Meanwhile, the study by Joo, 2020 contributes evidence that distributed leadership practices enhance teacher collaboration and instructional effectiveness through participatory and shared supervisory processes. The inclusion of research from the field of school counseling supervision also broadens the conceptual landscape, illustrating how field supervisors support professional capacity-building among interns and reinforcing parallels with managerial supervision in primary education.

Collectively, the studies summarized in Table 1 offer a robust empirical basis for understanding how various models of supervision pedagogical, academic, distributed, and collaborative contribute to teacher quality enhancement and overall school effectiveness. A cross-study comparison reveals that despite differing approaches and contexts, all articles converge on the importance of supportive professional relationships, systematic supervisory structures, and competent principal leadership. These shared insights form the analytical foundation of the present systematic review while also revealing research gaps that remain insufficiently addressed, particularly regarding the integration of digital tools in supervision, longitudinal examinations of supervisory impact on student learning outcomes, and the adaptation of supervisory models across diverse educational environments.

Discussion

The results of this study clarify that managerial supervision in elementary education serves not only as an administrative control tool but has also evolved into a strategic instrument contributing to new

trends in improving the quality of learning and teacher professional development. The findings in this SLR indicate a global trend toward a more collaborative, reflective, and data-driven supervision model, in line with research by de Nazaré Coimbra et al., 2020., which emphasized the role of the supervisor-teacher professional relationship in driving instructional change. This study not only confirms the importance of a collaborative approach but also expands upon it by finding that contemporary supervision trends are moving toward technology integration, performance data analysis, and strengthening the managerial capacity of principals as key supervisors. These findings are consistent with reports by Warman and Amelia et al., but this study provides new insights that the principal's role now includes the ability to manage digital-based supervision systems, which is becoming a significant trend in the elementary school context.

Another identified trend is the importance of adapting supervision models based on teachers' career stages, as noted by (Karlberg & Bezzina, 2022; Keller-Schneider et al., 2020). However, this study shows that at the elementary level, implementation challenges arise when schools lack a flexible supervision framework to accommodate the needs of both novice and experienced teachers. Furthermore, Joo, 2020 research on distributed leadership confirms that the trend in modern supervision no longer relies solely on the principal, but rather on collaborative practices involving senior teachers as mentors and facilitators. Our findings expand on this by demonstrating that a distributed approach not only enhances teacher professionalism but also addresses structural challenges such as principals' workload and time constraints in direct supervision. Wilder & Diec, 2025 perspective on counseling supervision provides additional evidence that mentoring and competency-based supervision practices are also relevant in the elementary education context to address the challenge of low teacher reflective literacy.

The main novelty of this study lies in the comprehensive integration of the latest managerial supervision trends, implementation challenges in elementary schools, and their implications for teacher professional development within a single systematic analytical framework. Unlike previous SLRs that only addressed leadership or performance evaluation aspects, this study combines pedagogical, managerial, digital, and collaborative perspectives into a concept of managerial supervision relevant to the needs of contemporary elementary education. Furthermore, this study, for the first time, identifies that the integration of digital technologies in supervision, such as performance dashboards, classroom

observation applications, and data-driven evaluation systems, is emerging as an important trend but still faces significant challenges at the elementary school level. Another novel contribution is the systematic mapping of managerial supervision challenges, including the administrative burden on principals, lack of supervisory competency, teacher resistance, and the lack of contextual evaluation tools for elementary education.

The practical implications of this review indicate that principals need strong managerial capacity, including data literacy, reflective coaching skills, and skills in facilitating teacher collaboration. Elementary schools need to develop more flexible, adaptive, and comprehensive supervisory structures to align with contemporary supervision trends. From a theoretical perspective, this study encourages the expansion of the managerial supervision model into a framework that relies not only on administrative control but also encompasses the development of a learning culture, continuous collaboration, and an evidence-based approach. Meanwhile, policy implications require the government and educational institutions to design managerial supervision standards that address the realities of elementary schools, including the provision of digital-based principal training programs and the alignment of supervision with the national quality assurance system.

While this study makes a significant contribution to the study of managerial supervision in primary education, several limitations should be acknowledged. First, the limited publication coverage to the period 2020–2025 may overlook relevant historical trends in managerial supervision prior to that period. Second, the reliance on specific databases (Scopus and Google Scholar) may create a representation bias, particularly from developing countries where quality research is often not indexed in international databases. Third, most of the reviewed studies are cross-sectional, precluding an in-depth understanding of the longitudinal impact of managerial supervision on teacher professional development or student learning outcomes. These limitations open up opportunities for further research using longitudinal, mixed-methods, or experimental designs that can test the effectiveness of managerial supervision models in improving the quality of primary education over time.

CONCLUSION

The findings of this systematic review conclude that managerial supervision in primary education has progressively shifted from a traditional administrative function toward a strategic mechanism that

drives instructional quality improvement and teacher professional development through collaborative, reflective, and data-driven practices. The reviewed literature indicates that principal leadership competence, systematically designed academic supervision, and the integration of digital technologies for classroom observation and performance feedback are key determinants of supervisory effectiveness. Evidence further highlights that distributed leadership strengthens professional learning cultures and reduces structural limitations of principal-centered supervision by expanding supervisory roles to experienced teachers and professional learning communities. However, implementation remains uneven due to persistent challenges, including teacher resistance to change, limited data literacy, and inadequate digital infrastructure across many primary schools, which collectively constrain the full realization of contemporary supervision reforms. Strengthening supervisory quality therefore requires enhanced principal capacity building, adaptive supervision frameworks aligned with teachers' career stages, and supportive policy structures that institutionalize technology-mediated supervision to sustain continuous improvement in teaching performance and learning outcomes. Future studies are recommended to employ longitudinal and experimental research designs to examine the causal impact of digital-based managerial supervision on student learning achievements and teacher professionalism

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