

## **The Effectiveness of Principal's Academic Supervision in Enhancing Teachers' Pedagogical Competency: A Systematic Literature Review**

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Article History: Received on 29 May 2025, Revised on 6 July 2025,  
Published on 9 August 2025

**Abstract:** This study aims to examine the role and effectiveness of principal's supervision in improving teachers' performance and pedagogical competence through a Systematic Literature Review (SLR) approach. By analyzing relevant literature on academic supervision in Indonesian primary and secondary education, the study finds that effective, structured, and continuous supervision enhances teacher skills in lesson planning, subject mastery, and the use of appropriate teaching methods. Principal supervision not only strengthens professional competence but also fosters motivation and a conducive learning environment. The study highlights that the success of supervision is influenced by the principal's leadership, school culture, and teacher involvement. Additionally, it identifies key challenges such as limited time and resources that hinder effective supervision. Overall, the findings emphasize the need for a collaborative, feedback-based supervision model and suggest that strengthening principals' capacity as academic supervisors is essential to improving teaching quality and informing educational policies that support teacher development and school improvement.

**Keywords:** Educational Leadership, Principal's Academic Supervision, Systematic Literature Review, Teachers' Pedagogical Competency

### **A. Introduction**

Education plays a central role in shaping high-quality human resources, and the success of educational development is inseparable from the competence of teachers as the frontliners in the learning process. One of the fundamental competencies required of teachers is pedagogical competence, which encompasses the ability to design, implement, and evaluate learning activities that are effective, meaningful, and aligned with students' needs and curriculum standards (Sanoto & Shafa Prastania, 2022). However, in practice, many teachers still face difficulties in preparing instructional tools such as lesson plans,

teaching materials, and assessments that are in line with competency-based curricula. This gap in planning and pedagogical design often results in suboptimal classroom delivery and diminished learning outcomes (Karuna, 2023). In response to this challenge, academic supervision by school principals has emerged as a key mechanism to foster continuous teacher improvement. Rather than serving as a mere administrative task, academic supervision is increasingly viewed as a professional development activity that aims to nurture pedagogical excellence and instructional innovation among teachers (Amini et al., 2022).

Despite the strategic importance of academic supervision in improving teaching quality, there remains a noticeable lack of studies that explore its structured implementation and measurable impact within the Indonesian school context. Most previous research tends to emphasize theoretical frameworks or subjective perceptions, without providing consistent empirical data or comparative analysis across different education levels and geographical settings. As such, the effectiveness of academic supervision as a systematic and transformative intervention remains underexplored in the national discourse on educational quality improvement. This research gap is particularly evident in the limited availability of studies that examine supervision using clearly defined indicators, longitudinal approaches, or outcome-based evaluations. In light of these limitations, there is a pressing need to revisit academic supervision from an empirical and evidence-based perspective, especially in the Indonesian context where the role of school leadership is pivotal yet often constrained by administrative burdens and resource limitations.

A brief review of recent literature confirms that academic supervision, when conducted systematically and with professional intent, has the potential to enhance various dimensions of pedagogical competence. Action research-based models and collaborative supervision cycles have been found to improve instructional planning, classroom management, learning assessment, and reflective practice among teachers (Karuna, 2023; Ading, 2022). Several studies have reported that academic supervision led by proactive and supportive principals contributes positively to teacher motivation, creativity, and the alignment of learning activities with curriculum goals (Dari et al., 2022; Nggadas et al., 2024). The leadership style of the principal plays a critical role in determining the success of supervision. Transformational and facilitative leadership characterized by empathy, empowerment, and collaboration has been consistently associated with more effective supervision practices and stronger school-wide instructional cultures (Turmuzi, 2023; Arissandi, 2024).

Nevertheless, academic supervision in Indonesian schools still faces a number of challenges. Time constraints, heavy administrative loads, and the absence of a clear

supervision roadmap often led to irregular and superficial supervision sessions that fail to address pedagogical issues in depth (Ayubi et al., 2020). In many schools, supervision is still perceived as a bureaucratic requirement rather than a formative and dialogic process aimed at professional learning. Furthermore, some studies do not provide robust empirical evidence or fail to measure critical variables such as the impact of supervision on student learning outcomes, the influence of leadership dynamics, or the role of school culture in shaping supervision effectiveness (Suhaeni, 2022). These limitations highlight the importance of conducting systematic investigations into how supervision is practiced, evaluated, and sustained across different school contexts.

In response to these gaps, this study aims to systematically review empirical research published in the last three years on the implementation and outcomes of academic supervision conducted by school principals in Indonesian schools. By synthesizing recent findings through a structured and evidence-based lens, this study seeks to provide a comprehensive understanding of how supervision models are applied, which factors contribute to their success or limitations, and what implications these findings have for future school leadership practices and policy development. The ultimate goal is to support the optimization of academic supervision as an integral part of teacher development and school quality improvement.

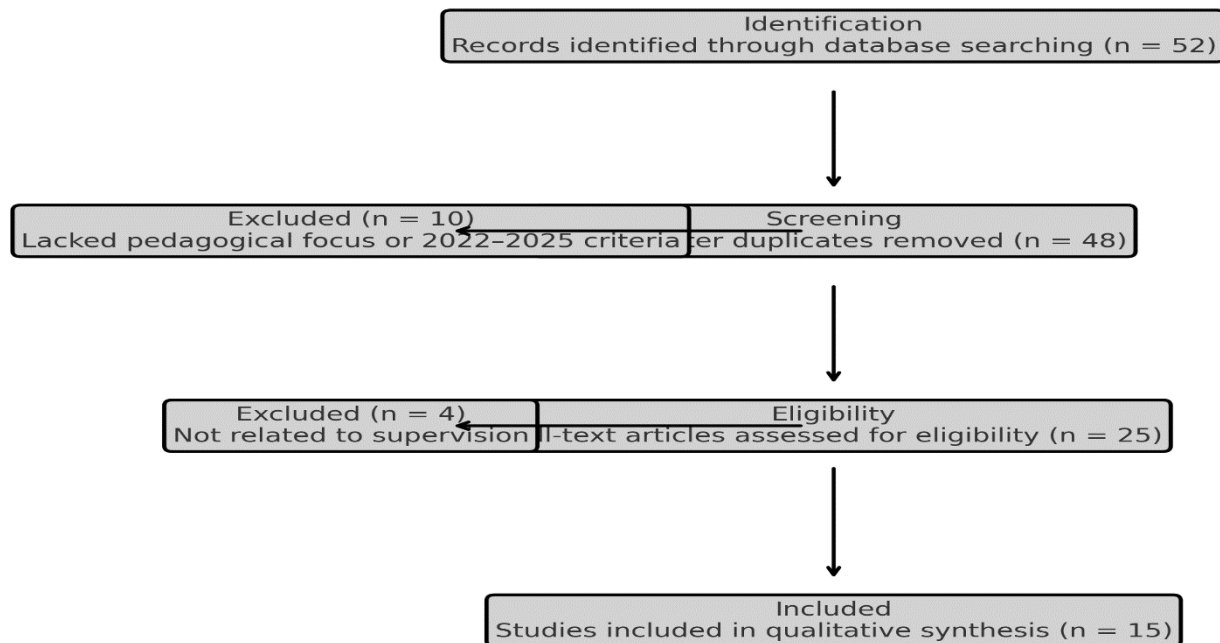
To guide this review, the following research questions were formulated: 1) What patterns and models of academic supervision have been implemented by school principals in the last three years? 2) To what extent do these supervision models contribute to improving teacher pedagogical competence? 3) What factors support or hinder the effectiveness of academic supervision in the school context? Through this inquiry, it is hoped that practical insights and research-based recommendations can be generated to strengthen the implementation of academic supervision in Indonesian schools, with the broader aim of enhancing the quality of teaching and learning nationwide.

## **B. Methods**

This study employed a Systematic Literature Review (SLR) approach to investigate the effectiveness of academic supervision conducted by school principals in improving teachers' pedagogical competence. The SLR methodology was selected for its ability to synthesize and critically evaluate findings from multiple scientific studies in a structured and transparent manner, in accordance with PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) guidelines. The procedure included the following stages:

1. Defining inclusion criteria: peer-reviewed articles published between 2022–2025, written in Indonesian or English, focusing on academic supervision by school principals or madrasah heads, and explicitly addressing teachers’ pedagogical competence.
2. Exclusion criteria: articles that did not discuss academic supervision as a variable or lacked relevance to pedagogical competence were excluded.
3. Database search: systematic searches were conducted across online scholarly databases using keywords such as “academic supervision,” “pedagogical competence,” “school principal,” and “teacher performance.”
4. Screening and eligibility: from the initial pool of studies, 15 articles met all inclusion criteria and were included in the final analysis.
5. Analysis process: studies were analyzed using content analysis, involving deep reading, coding of recurring themes, identifying supervision models, and mapping their effectiveness on pedagogical indicators.
6. Synthesis: data were synthesized descriptively and narratively to highlight methodological differences, effectiveness of interventions, and gaps in practice.

The PRISMA flowchart below illustrates the screening process and selection of eligible studies.



### C. Results and Discussion

**Table 1. Journal Reviews**

No	Title	Author and year	Research purposes	Research Methods	Research result	Conclusion
1	The Role of the Principal as a Supervisor in Optimizing Teacher Pedagogical Competence at SMPN 2 Lhokseumawe City	(Nurasiah, 2023)	Analyzing the role of the principal as a supervisor in improving teacher pedagogical competence	Qualitative, interviews, observation, documentation	Academic supervision improves teacher competence, but there are still obstacles in implementation, such as a lack of understanding of effective learning models.	More intensive and systematic academic supervision can improve teachers' pedagogical skills and learning effectiveness.
2	Implementation of Clinical Supervision in Improving the Pedagogical Competence of Islamic Religious Education Subject Teachers	(Amir & Hajar, 2022)	Identifying clinical supervision strategies in improving teacher competence	Qualitative, interviews, observation, documentation	Clinical supervision helps teachers analyze learning problems and find appropriate solutions, although there are still obstacles in the use of evaluation instruments.	Clinical supervision has been shown to improve teachers' understanding and skills in implementing more innovative learning methods.
3	Academic Supervision in Improving Madrasah Teacher Performance	(Mulyanto et al., 2023)	Analyzing the effectiveness of academic supervision in madrasas	Qualitative, observation, interviews, document analysis	Monthly academic supervision has an impact on improving teacher discipline and skills in preparing teaching materials.	Planned and systematic academic supervision can improve teacher performance and the quality of learning.
4	The Role of Learning Supervision in Improving 10 Pedagogical Competencies of Teachers at Katulampa 04 Primary School	(Musolihat et al., 2025)	Examining the role of supervision in improving teachers' pedagogical competence	Qualitative descriptive, interviews, observations, documentation	Learning supervision carried out every six months helps teachers improve their teaching skills.	Learning supervision needs to be carried out more frequently and supplemented with ongoing evaluation so that the impact is more significant.

5	Improving Pedagogical Competence in Preparing Lesson Plans Through Academic Supervision of Teachers at Rikut Jawu Primary School, South Barito Regency	Muarif, 2023	Improving teacher competence in preparing lesson plans	School action research, two cycles	Academic supervision shows an improvement in the preparation of lesson plans, especially in terms of learning objectives and strategy selection.	Academic supervision has been proven to improve teachers' skills in preparing lesson plans that are more in line with learning standards.
6	The Role of the Principal as a Supervisor to Improve the Pedagogical Competence of Elementary School Teachers in Cluster I, Aesesa District, Nagekeo Regency	Benedikta Bolen, 2025	Analyzing the role of the principal in academic supervision	Qualitative, interviews, observation, documentation	Academic supervision carried out by the principal actively improves teachers' pedagogical skills, but there are obstacles such as lack of discipline and budget limitations.	The role of the principal as a supervisor is very important in improving teacher competence, so there needs to be a policy that supports more intensive supervision.
7	The Influence of Teacher Competence and Principal Academic Supervision on Teacher Performance in Accounting and Financial Expertise at Vocational High Schools in Jepara Regency	(Wibawani et al., 2024)	Analyzing the influence of teacher competence and academic supervision on teacher performance	Quantitative, correlation, questionnaire	Teacher competence has a 69.8% influence on teacher performance, while academic supervision has a 72.9% influence. Together, the influence is 74%.	Academic supervision carried out periodically and systematically can significantly improve teacher competence and performance.
8	The Role of the Principal as Manager and Supervisor in Improving Teacher Competence at Pangudi Luhur	(Oetari, 2024)	Analyzing the role of the principal as a manager and supervisor	Qualitative, interviews, observation, documentation	Principals who are active in school supervision and management are able to create a more conducive work environment for	Academic supervision combined with good school management can improve teacher competence more effectively.

9	Bernardus Kindergarten Academic Supervision Management to Improve Pedagogical Competence of Madrasah Tsanawiyah Teachers	(Amruddin, 2023)	Improving the pedagogical competence of MTsN teachers through academic supervision	Case studies with training and simulation	improving teacher competence. Training and simulations help teachers understand the classroom, develop teaching skills, and apply academic supervision techniques.	Academic supervision is effective in improving teacher professionalism as well as enhancing pedagogical skills and classroom management.
10	Academic Supervision for Improving Teachers' Pedagogical Competence	(Rasu et al., 2021)	Describing academic supervision in improving teacher pedagogical competence	Case study with observation, interviews and documentation	Academic supervision helps teachers in planning, implementing and evaluating learning, as well as improving skills in classroom management.	Academic supervision needs to be implemented consistently with the support of the principal so that teachers can continue to develop their competencies.
11	The Role of the Principal in Implementing Academic Supervision as an Effort to Improve Teacher Competence	(Saman & Hasanah, 2024)	Examining the role of the principal in academic supervision	Qualitative approach	Principals who actively carry out academic supervision can improve teachers' teaching skills, improve classroom management, and increase learning effectiveness.	The principal acts as a partner to teachers in academic supervision, not just as a supervisor, so that a more collaborative approach is more effective.
12	The Role of Principal Leadership in Improving Teacher Pedagogical Competence	Wakidi, Fatimah Aristiati (2022)	Reviewing the principal's leadership strategy in improving teacher competence	Qualitative study with interviews and observations	Principals who implement facility strategies such as training, seminars, and group discussions are successful in improving the quality of teacher teaching.	Good principal leadership plays a big role in improving teacher competence and has a positive impact on the quality of learning in schools.
13	Implementation of Principal Academic	(Aning, 2022)	Measuring the impact of principal	Action research with observation,	The implementation of academic supervision	Academic supervision carried out

	Supervision Study on Teacher Pedagogical Competence		academic supervision on teacher pedagogical competence	interviews, and documentation	carried out repeatedly improves teacher skills in preparing lesson plans, implementing teaching strategies, and evaluating learning.	systematically can increase the effectiveness of teaching and provide a better learning experience for students.
14	The Relationship Between Academic Supervision by the Principal and Teacher Pedagogical Competence at State Vocational High School 2 Padang	(Dari et al., 2022)	Measuring the relationship between academic supervision and teacher pedagogical competence	Quantitative correlational	There is a significant relationship between the principal's academic supervision and the improvement of teachers' pedagogical skills, especially in the aspects of classroom management and teaching methods.	The more frequently academic supervision is carried out, the higher the increase in teacher pedagogical competence, showing the importance of academic supervision as a major factor in developing teacher quality.
15	Efforts to Improve Teachers' Pedagogical Competence Through Academic Supervision at SDI Rinalolon, West Rote Regency	(Nggadas et al., 2024)	Improving teacher pedagogical competence through academic supervision	School action research using the Kemmis and McTaggart model	Significant increase in teacher pedagogical competence from 33.33% to 100% in two research cycles, especially in the aspects of learning planning and application of innovative methods.	Academic supervision carried out with a participatory and reflective approach has proven effective in improving teachers' teaching skills in a sustainable manner.

## **Discussion**

The review of ten scientific articles focusing on the implementation of academic and clinical supervision in Indonesian educational institutions reveals that, in general, supervision plays a highly significant role in facilitating teacher professional development. Research by Turmuzi (2023), for example, demonstrates a school action research model that systematically improved teachers' ability to prepare teaching materials aligned with the Independent Curriculum. The study recorded an increase in the percentage of teachers preparing instructional tools from 16.67% in the pre-cycle to 90.74% in the second cycle. This quantitative improvement highlights the effectiveness of structured academic supervision. However, the narrow scope of the study limited to only one school with 12 participants – and the absence of data on student learning outcomes limit the generalizability and practical impact of the findings.

Similar studies such as those by Maulana and Sayan Suryana (2023) and Oetari (2024) emphasize the importance of planning, implementation, and follow-up stages in academic supervision, as well as the dual managerial-supervisory role of school principals. These studies underline the value of structured leadership in supporting teacher development, although many of them fall short in providing quantitative measurements of effectiveness. Likewise, clinical supervision, as shown in the work of Amir and Hajar (2022), offers a more personalized approach through observation and feedback, but its success is highly dependent on teacher readiness and implementation consistency.

When these findings are contrasted with international literature, notable differences and gaps emerge. In many high-performing education systems, such as those in Finland, Singapore, and Canada, academic supervision is not merely reactive or compliance-driven, but embedded within a continuous professional learning ecosystem. For example, in Singapore, instructional leadership is part of a broader teacher performance management system that links supervision with professional learning communities and career progression (Ng, 2017). In contrast, studies in Indonesia often show supervision being limited to documentation checks or irregular visits, with minimal emphasis on instructional coaching or student learning impact.

Moreover, research in the United States and the United Kingdom has increasingly focused on data-driven supervision models that integrate student performance data into the feedback process (Reeves, 2009; Danielson, 2013). Such models allow supervisors to measure not only teacher competence, but also the actual effects on student achievement. In comparison, the majority of Indonesian studies reviewed do not link improvements in teacher performance to student learning outcomes. For instance, although Manurung (2023) and Musolihat et al. (2025) documented measurable gains in teacher planning and

pedagogical competence, they did not evaluate whether these gains translated into more effective classroom practices or improved student engagement and achievement.

Another difference lies in the feedback culture. Global studies emphasize formative, collaborative feedback as a key to effective supervision, where teachers are treated as reflective partners rather than subordinates. Indonesian studies, while showing promising efforts, often reflect a top-down model where supervision is perceived as evaluative rather than developmental. This perception can hinder teacher openness and limit the sustainability of improvements.

Nevertheless, some studies, such as Wibawani et al. (2024), have begun to adopt more robust methodologies, demonstrating statistically significant correlations between supervision and teacher performance. However, even in these cases, the findings are heavily quantitative and lack rich qualitative insight into how teachers experience supervision and what contextual factors affect its success. This contrasts with global best practices that combine quantitative metrics with qualitative narratives to inform policy and practice.

Additionally, the contextual challenges faced by Indonesian schools such as limited resources, overloaded principals, weak supervision competencies, and cultural hierarchies highlight the need for localized solutions. For example, studies like those by Nurasiah (2023) and Djuhartono et al. (2021) reveal critical barriers such as lack of discipline, low teacher motivation, and ineffective curriculum implementation, which are rarely addressed in global models. This suggests that while lessons can be learned from international practices, supervision models in Indonesia must be context-sensitive and grounded in the realities of each school.

In sum, while the Indonesian studies reviewed indicate a growing awareness of the strategic importance of supervision, there remains a gap in terms of implementation quality, integration with learning outcomes, and alignment with global supervision standards. Bridging these gaps will require more rigorous, mixed-method research that not only quantifies teacher development but also captures its impact on student learning in diverse educational settings.

#### **D. Conclusion**

Based on a review of ten scientific articles on the implementation of academic and clinical supervision across various educational levels, it can be concluded that supervision plays a strategic and transformative role in enhancing teacher competence and professional performance. Structured academic supervision and feedback-oriented clinical supervision have both been shown to make significant contributions to the development

of teacher professionalism. This is evident in improvements in teachers' ability to develop instructional tools, implement effective and student-centered learning, and conduct evaluations that align with curriculum standards. Supervision functions not only as a managerial tool but also as a bridge between pedagogical theory and classroom practice. When implemented collaboratively and consistently, supervision serves as a platform for professional reflection, dialogue, and instructional improvement. For instance, research by Turmuzi, Muarif, and Esti Wibawani highlights how well-executed supervision can make teaching practices more systematic and data-driven. Likewise, the clinical supervision model described by Asmah and Hajar demonstrates its importance in supporting both the personal and professional growth of teachers.

Despite these benefits, challenges remain in the field. Supervision is often limited in frequency and depth due to a lack of follow-up, minimal institutional resources, and practices that are still dominantly administrative rather than developmental. In addition, not all school principals possess adequate supervision competencies, particularly in instructional leadership, mentoring, and coaching. These limitations reduce the potential impact of supervision as an effective mechanism for continuous teacher development.

To overcome these challenges, several practical steps are recommended. School principals should receive intensive training in supervision techniques, with particular emphasis on how to give formative feedback, facilitate reflective dialogue, and conduct classroom observations that support instructional growth. These competencies should be integrated into ongoing professional development programs and supported through policy initiatives at the district or national level. Schools are also encouraged to implement structured supervision cycles that include clear objectives, consistent scheduling, proper documentation, and meaningful follow-up to ensure continuity and impact. Furthermore, school cultures need to promote supervision as a collaborative and supportive process rather than a mere compliance task. Empowering senior teachers to participate in peer supervision and building teacher learning communities can also strengthen the implementation of effective supervision practices.

In terms of future research, there is a need for more longitudinal studies that examine the sustained impact of academic and clinical supervision on both teacher performance and student learning outcomes. Future studies could also investigate the role of leadership style, teacher motivation, and school climate in shaping the effectiveness of supervision. In addition, mixed-method research that combines quantitative analysis of student achievement with qualitative insights from teacher and principal experiences would offer a more holistic understanding of the supervision process and its outcomes.

In conclusion, academic supervision, when carried out purposefully, reflectively, and professionally, has the potential to transform teaching practice and contribute meaningfully to educational quality. Strengthening principal capacity, institutionalizing structured supervision models, and expanding the empirical base through rigorous research are key steps toward optimizing the impact of supervision in Indonesian schools.

## E. Acknowledgement

Thanks to all colleagues from SD Negeri 59 Palembang for the support.

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