

Reconceptualizing Academic Supervision and Teacher Performance: An Empirical Study in Public Secondary School Management

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ABSTRACT

Improving teacher performance remains a central issue in educational quality, particularly in developing countries where instructional effectiveness is closely linked to school leadership practices. Academic supervision conducted by school principals is considered a strategic mechanism for fostering teacher professionalism and improving classroom practices. This study aims to examine the effect of principals' academic supervision on teacher performance at a public senior high school in Indonesia. A quantitative explanatory design with a survey approach was employed. The population consisted of all 48 teachers, who were selected using a saturated sampling technique. Data were collected through validated Likert-scale questionnaires and analyzed using descriptive statistics and simple linear regression. The results reveal that academic supervision has a positive and significant effect on teacher performance ($R^2 = 0.425$; $p < 0.05$), indicating that effective supervision contributes to improvements in lesson planning, instructional implementation, assessment, and follow-up activities. These findings highlight the role of structured and continuous supervision as a professional development tool rather than merely an administrative function. This study contributes to the growing body of research on instructional leadership by providing empirical evidence on how academic supervision strengthens school quality culture and teacher performance, and offers practical implications for optimizing supervisory programs to enhance learning quality.

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1. Introduction.

Teacher performance has consistently been identified as a decisive factor in determining the quality of education and student learning outcomes across countries. In the era of global competition and the knowledge-based economy, education systems are required to produce graduates who are adaptive, critical, creative, and collaborative (Arlene Borbon et al, 2025) This demand places teachers at the center of educational transformation, as they are the main actors who translate curriculum into meaningful learning experiences (A. Canales et al, 2018) International organizations such as UNESCO and the OECD emphasize that improving teacher quality is the most strategic investment in education reform because teacher effectiveness has a direct and long-term impact on student achievement, school performance, and national competitiveness (Mary Ryan et al, 2025). Consequently, many countries have shifted their educational policies toward strengthening instructional leadership, continuous professional development, and school-based quality assurance systems that support teachers' professional growth (Milinia Frisila et al, 2025)

Within this global framework, academic supervision has emerged as a key instrument in improving teaching quality (Istikomah Istikomah et al, 2025). Academic supervision is no longer viewed merely as a mechanism for monitoring teacher compliance with administrative standards, but as a structured and continuous professional assistance process that includes planning, classroom observation, constructive feedback, reflective dialogue, and follow-up programs (Muhamad Suryadi et al, 2025). In effective school systems, academic supervision functions as a form of instructional leadership that creates a professional learning environment, encourages innovation in teaching practices, and fosters a culture of continuous improvement (Agustina Said, 2025). Through this process, teachers are not positioned as objects of evaluation but as reflective practitioners who continuously develop their pedagogical competence (Srima Deliana Damanik et al, 2025).

However, the implementation of academic supervision in many developing countries, including Indonesia, still faces serious challenges (Niyaz Panakaje et al, 2024). Various national and international reports indicate that teacher performance has not reached the expected standards, particularly in aspects of lesson planning, the use of student-centered learning approaches, authentic assessment, and the integration of technology into the learning process (A. Pamungkas, 2023). These conditions suggest that the supervisory practices carried out in schools have not fully functioned as instruments for professional learning. In many cases, supervision is still dominated by administrative activities, document checking, and one-way evaluation, rather than collaborative mentoring that supports teachers' professional growth (Asnita Putri Dewi, 2020). As a result, supervision has not yet been able to significantly transform classroom practices and improve learning quality (Irzawati, 2025).

At the school level, the principal plays a strategic role as an academic supervisor who is responsible for ensuring that the learning process runs effectively and continuously improves (hengnan Liu & Philip Hallinger, 2018). In the perspective of instructional leadership, the principal is not only a manager of school administration but also a leader of learning who guides teachers in developing their professional competence (Chairunnisa Amelia & Andika Aprilianto, 2022). Effective principals design systematic supervision programs, conduct classroom observations, provide objective and constructive feedback, and ensure the implementation of follow-up programs (Marisol Galdames-Calderón, 2023). When academic supervision is carried out in a planned, communicative, and collegial manner, it can increase teachers' motivation, strengthen professional commitment, and encourage reflective teaching practices (Mustajib; Ansori, 2021). Conversely, when supervision is conducted only as a formality, its impact on teacher performance becomes minimal.

Over the last decade, numerous studies have examined the relationship between academic supervision and teacher performance (Lorensius Lorensius, Nikolaus Anggal & Stepanus Lukan, 2022). Empirical research generally confirms that academic supervision has a positive contribution to improving teacher professionalism, teaching effectiveness, and learning quality (M. M. Mekarsari, Bunyamin & I. Sudana, 2025). For example, studies conducted in various educational contexts show that supervision that emphasizes mentoring and professional dialogue can improve teachers' pedagogical competence, classroom management, and assessment practices. Other studies highlight that academic supervision is closely related to work motivation, school climate, professional collaboration, and organizational culture. This indicates that supervision does not operate in isolation, but is part of a broader system of school quality management (M. Syukri, Elsa Viona & Hendri Budi Utama, 2023).

In the Indonesian context, several recent studies have also reported similar findings. Academic supervision is proven to have a significant effect on teacher performance (Imron Muttaqin et al, 2023), both directly and indirectly through mediating variables such as work motivation, professional competence, and organizational commitment (Wulan Devinta Ahmanda & Rihab Wit Daryono, 2024). Collaborative supervision approaches are also reported to be more effective in encouraging teacher reflection and innovation in learning (Abu Nawas et al, 2024). These studies confirm that academic supervision is an important factor in improving the quality of education at the school level.

Nevertheless, a critical review of previous studies shows several limitations that open opportunities for further research (L. Yuliani, A. Agung & I. M. Yudana, 2023). First, many studies place academic supervision as one of several independent variables in complex models involving leadership, organizational culture, work climate, and teacher competence. As a result, the specific contribution of academic supervision as a core instrument of instructional leadership has not been deeply explored (C. Muraraneza, N. Mtshali & T. Bvumbwe, 2020). Second, previous research tends to emphasize managerial and administrative supervision rather than academic supervision that focuses on improving the quality of classroom instruction. Third, empirical studies that examine academic supervision using a saturated sampling approach at the school level are still limited, even though this approach is important to obtain a comprehensive picture of the implementation of supervision and its impact on teacher performance (Warman Warman et al, 2024). Fourth, there is still limited research that explicitly links academic supervision to the development of a school quality culture, particularly in the context of public senior high schools (R. Rusdi & Husnul Madihah, 2023).

These gaps indicate the need for research that places academic supervision as the main variable that directly influences teacher performance within the framework of school quality improvement (Radhiyah & Muhammad Anggung, 2024). Such research is important not only to strengthen empirical evidence but also to provide a more operational conceptual model for implementing effective supervision in schools (Rokhman Rokhman et al, 2024). In addition, studies that focus on the micro context of educational units are needed to understand how supervision practices are implemented in real terms and how they contribute to improving teaching quality.

Based on these considerations, this study offers several contributions and novelties (Masturo Masturo, 2023). First, this research positions academic supervision as a core instrument of instructional leadership that directly affects teacher performance, rather than as a complementary variable in a broader leadership model. Second, this study emphasizes academic supervision that focuses on improving the quality of classroom instruction through systematic stages, namely supervision planning, classroom observation, evaluation, and follow-up. Third, this research provides empirical evidence based on saturated sampling involving all teachers in a school, so that it is able to present a comprehensive and accurate picture of the relationship between academic supervision and teacher performance. Fourth, this study integrates the perspective of school quality culture to explain how continuous and structured supervision can create reflective, collaborative, and improvement-oriented teaching practices.

Thus, this study not only confirms the findings of previous research but also offers a more focused analytical framework in understanding the role of academic supervision in improving teacher performance. The results of this study are expected to contribute theoretically to the development of instructional leadership and educational quality management literature, as well as practically to provide strategic recommendations for school principals in designing effective and sustainable academic supervision programs.

Therefore, the main objective of this study is to analyze the effect of principals' academic supervision on teacher performance. Specifically, this study aims to: (1) examine the implementation of academic supervision carried out by the principal; (2) analyze the level of teacher performance in planning, implementing, evaluating, and following up on learning; and (3) determine the extent to which academic supervision contributes to improving teacher performance. Through these objectives, this research seeks to provide empirical evidence on the strategic role of academic supervision as an instrument for improving the quality of learning and strengthening the culture of school quality.

2. Research Method

This study employed a quantitative approach using an explanatory survey design to examine the causal relationship between principals' academic supervision and teacher performance. The explanatory design was selected to test the predictive power of academic supervision as an independent variable on teacher performance as a dependent variable through statistical analysis (Creswell & Creswell, 2018; Hair et al., 2019). This approach enables an objective measurement of relationships among variables and provides empirical evidence of the magnitude and significance of the effect.

The study was conducted at SMA Negeri 2 Slawi, a public senior high school in Indonesia. The school was selected because it has implemented structured academic supervision programs and represents a typical organizational and instructional context of public secondary education. Data collection was carried out over a three-month period, from January to March 2025, covering the stages of instrument preparation, distribution of questionnaires, data verification, and data analysis.

The population of this study consisted of all teachers at SMA Negeri 2 Slawi, totaling 48 teachers. Considering the relatively small population size, this study employed a saturated sampling technique (total sampling), in which all members of the population were involved as research respondents. This technique was chosen to eliminate sampling bias and to obtain a comprehensive representation of teachers' perceptions regarding the implementation of academic supervision and their performance.

All participants had formal teaching responsibilities and were actively involved in the teaching and learning process during the data collection period. Their teaching experience, educational background, and professional status varied, allowing the data to reflect diverse professional characteristics.

Data were collected using a structured questionnaire based on a five-point Likert scale ranging from strongly disagree (1) to strongly agree (5). The instrument was developed from established theoretical frameworks and previous empirical studies on academic supervision and teacher performance.

The academic supervision variable consisted of the following indicators:

1. Supervision planning
2. Classroom observation
3. Evaluation and feedback
4. Follow-up of supervision programs

The teacher performance variable included:

1. Lesson planning
2. Instructional implementation
3. Learning assessment
4. Follow-up and reflective practice

Before being administered, the instrument underwent content validation through expert judgment to ensure its relevance to the research constructs.

Data collection was conducted in several stages. First, the researcher obtained formal permission from the school principal to conduct the study. Second, the questionnaire was distributed directly to all teachers who met the inclusion criteria. Third, respondents were given clear instructions regarding the purpose of the study and were assured of the confidentiality and anonymity of their responses. Fourth, completed questionnaires were checked for completeness and consistency before being coded and entered into the statistical software.

To minimize response bias, respondents completed the questionnaire independently without intervention from the school management.

The collected data were analyzed using descriptive and inferential statistics with the assistance of statistical software.

1. Descriptive statistics were used to describe the distribution, mean, and standard deviation of each variable.
2. Assumption tests were conducted prior to hypothesis testing, including normality and linearity tests.
3. Simple linear regression analysis was used to examine the effect of academic supervision on teacher performance.

4. The coefficient of determination (R^2) was used to determine the magnitude of the contribution of academic supervision to teacher performance.
5. Hypothesis testing was performed at a significance level of 0.05.

Instrument validity was tested using the Pearson product–moment correlation to measure the correlation between each item score and the total score. All items with a correlation coefficient higher than the critical value were considered valid.

Reliability testing was conducted using Cronbach’s Alpha coefficient. A reliability coefficient greater than 0.70 indicated that the instrument had high internal consistency and was suitable for use in data collection.

3. Research Results

3.1 Academic Supervision Data Description of School Principals

Table 1. Descriptive Statistics of Academic Supervision

Statistik	Nilai
Jumlah Responden (N)	48
Skor Minimum	62
Skor Maksimum	95
Rata-rata (Mean)	78,46
Standar Deviasi	7,83

Based on Table 1, the academic supervision by the principal at SMA Negeri 2 Slawi shows an average score of 78.46, with a minimum score of 62 and a maximum score of 95. This score indicates that the implementation of academic supervision is in the good category. A standard deviation of 7.83 shows that there is variation in teachers' assessment of the implementation of academic supervision, but it is still within an acceptable range. This indicates that academic supervision has been carried out relatively consistently, covering planning, classroom observation, evaluation, and supervision follow-up.

3.2 Teacher Performance Data Description

Table 2. Descriptive Statistics of Teacher Performance

Statistik	Nilai
Jumlah Responden (N)	48
Skor Minimum	65
Skor Maksimum	96
Rata-rata (Mean)	80,12
Standar Deviasi	7,21

Based on Table 2, the teachers' performance has an average score of 80.12, with a minimum score of 65 and a maximum score of 96. These results indicate that the teachers' performance at SMA Negeri 2 Slawi falls into the fairly high category. A standard deviation of 7.21 indicates variations in the performance levels among teachers, but overall shows a positive trend in planning, implementing, and evaluating learning.

3.3 Results of Simple Linear Regression Analysis

The Relationship Between Academic Supervision and Teacher Performance

Table 3. Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0,652	0,425	0,412	5,48

Based on Table 3, the correlation coefficient (R) value of 0.652 indicates a strong and positive relationship between academic supervision and teacher performance. The R Square value of 0.425 shows that 42.5% of the variation in teacher performance can be explained by the principal's academic supervision, while the rest is influenced by other factors outside the research model.

F Test Results (Regression Model Feasibility)

Table 4. ANOVA Test Results

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	683,21	1	683,21	22,764	0,000
Residual	911,34	46	19,81		
Total	1.594,55	47			

Based on Table 4, the calculated F value is 22.764 with a significance level of $0.000 < 0.05$. This indicates that the regression model used in this study is significant and feasible, meaning that academic supervision collectively contributes to changes in teacher performance.

t-Test Results (Partial Effect)

Table 5. t-Test Results (Coefficients)

Variabel	B	Std. Error	Beta	t	Sig.
(Constant)	32,418	6,214	—	5,215	0,000
Supervisi Akademik	0,612	0,145	0,652	4,221	0,000

Based on Table 5, the academic supervision variable has a t-value of 4.221 with a significance level of $0.000 < 0.05$. The regression coefficient is positive ($B = 0.612$), indicating that every one-unit increase in academic supervision will be followed by a 0.612-unit increase in teacher performance. Thus, the principal's academic supervision is proven to have a positive and significant effect on teacher performance.

4. Discussion.**4.1 Academic Supervision for Improving Teacher Professionalism**

The results of this study indicate that academic supervision has a positive and significant effect on teacher performance, with a contribution of 42.5%, which confirms that supervision functions as a central mechanism in developing teacher professionalism rather than merely as an administrative control activity. This finding implies that when supervision is carried out through systematic stages—planning, classroom observation, feedback, and follow-up it becomes a form of job-embedded professional learning that directly improves teachers' pedagogical and instructional competencies. In this context, academic supervision creates a structured reflective space in which teachers are able to identify instructional gaps, receive formative input, and implement continuous improvement in their classroom practices. This interpretation supports the instructional leadership perspective which emphasizes that leadership practices focused on teaching and learning have a direct impact on teacher professional growth and instructional quality (Liu & Hallinger, 2018; Galdames-Calderón, 2023).

The findings of this study are consistent with previous empirical research that confirms the significant relationship between academic supervision and teacher professionalism (Muttaqin et al., 2023; Mekarsari et al., 2025; Ningsih & Wijayanti, 2025). However, this study provides a more specific contribution by positioning academic supervision as a core explanatory variable, not as part of a complex multivariate leadership model as commonly found in previous studies (Yuliani et al., 2023). By using saturated sampling at the school level, this research offers a more comprehensive and contextually grounded picture of how supervision affects all teachers within one organizational system, thereby responding to the methodological gap identified in the bibliometric analysis of supervision research which highlights the need for micro-level empirical evidence (Warman et al., 2024). In the global context, this study strengthens the argument that supervision-based professional development is universally relevant, including in developing-country settings where instructional leadership practices are still evolving.

From a theoretical perspective, these findings reinforce the developmental and clinical supervision model which views supervision as a professional assistance process aimed at improving teaching competence through collegial dialogue and reflective feedback. At the same time, this study extends instructional leadership theory by providing empirical evidence that academic supervision operates as a professional learning cycle that connects leadership practices with classroom-level instructional improvement. This confirms that supervision not only influences teacher performance directly but also contributes to the formation of a school quality culture characterized by continuous reflection and improvement (Sallis, 2014; Syukri et al., 2023). In contrast to traditional supervisory models that emphasize evaluation and compliance (Dewi, 2020), the results of this study indicate that

supervision oriented toward mentoring and follow-up produces a stronger impact on teacher professionalism because it increases teacher motivation, self-efficacy, and openness to change.

The significant influence of academic supervision found in this study can be explained through several interrelated mechanisms. First, structured supervision provides formative feedback that reduces the gap between actual and expected instructional practices, thereby improving teaching effectiveness. Second, continuous interaction between principals and teachers in the supervision process strengthens professional relationships and creates a collaborative learning environment, which has been proven to enhance teacher commitment and professional learning (Lorensius et al., 2022; Rusdi & Madihah, 2023). Third, supervision that includes follow-up programs ensures that feedback is translated into concrete instructional improvement, making it more effective than supervision that stops at the evaluation stage. These mechanisms explain why supervision contributes substantially to teacher performance and why its impact becomes stronger when it is implemented as a continuous and structured program.

This study contributes theoretically by reconceptualizing academic supervision as a core instrument of instructional leadership that operates through a professional learning cycle and directly shapes teacher professionalism and school quality culture. This integrative perspective bridges the gap between leadership theory, teacher professional development, and educational quality management, which have often been examined separately in previous studies. Furthermore, by providing empirical evidence from a developing-country context, this study enriches the global discourse on instructional supervision, which has been largely dominated by research from developed education systems.

Practically, the findings of this study imply that academic supervision should be redesigned as a sustainable professional development system rather than a periodic administrative agenda. School principals need to prioritize collegial supervision approaches that emphasize formative feedback, reflective dialogue, and structured follow-up programs. For teachers, supervision should be positioned as a professional learning opportunity that supports continuous instructional improvement. At the policy level, integrating academic supervision into school-based quality assurance systems can become a strategic approach to strengthening teacher professionalism and improving learning quality in a sustainable manner.

4.2 Academic Supervision of Teacher Performance

The results of this study show that teachers who perceive academic supervision positively tend to demonstrate higher performance in lesson planning, instructional implementation, learning assessment, and reflective follow-up. This finding indicates that academic supervision functions as a significant external factor that shapes the quality and consistency of teachers' professional work. The regression coefficient ($B = 0.612$) confirms that every improvement in the quality of supervision is followed by a meaningful increase in teacher performance, which implies that supervision operates not only as a monitoring mechanism but as a performance-enhancing professional support system. In this sense, academic supervision contributes to transforming teaching from a routine activity into a reflective and continuously improving professional practice. This interpretation is consistent with the view that teacher performance is strongly influenced by organizational support systems that provide direction, feedback, and professional reinforcement (Mangkunegara; Liu & Hallinger, 2018).

This finding is in line with a number of previous studies which report that academic supervision has a direct and significant effect on teacher performance across different educational levels and contexts (Mardalena et al., 2020; Riyadi et al., 2025; Sitorus & Haeruddin, 2025). However, this study offers a more specific empirical confirmation by demonstrating that the strongest contribution of supervision lies in its role in improving core instructional tasks rather than administrative compliance. While earlier studies often linked teacher performance with multiple mediating variables such as motivation, organizational climate, and professional commitment (Muttaqin et al., 2023; Rusdi & Madihah, 2023), this research shows that academic supervision itself already provides a substantial direct effect. This strengthens the argument that supervision is not merely a supporting variable but a key driver of instructional improvement. In the global discourse on school effectiveness, this finding reinforces the centrality of instructional supervision as a school-based strategy for improving teaching quality and learning outcomes.

From a theoretical standpoint, the results of this study support the performance theory which states that individual performance is influenced by the interaction between ability, motivation, and organizational support. Academic supervision represents a form of structured organizational support that enhances teachers' ability through professional guidance, strengthens motivation through constructive feedback, and clarifies performance expectations through systematic observation and evaluation. Furthermore, these findings reinforce instructional leadership theory, which posits that principals' direct involvement in the teaching and learning process significantly influences teacher effectiveness and classroom practices (Galdames-Calderón, 2023). In contrast to traditional bureaucratic supervision models that emphasize compliance and document checking (Dewi, 2020), the supervision model identified in this study demonstrates a developmental orientation that produces measurable performance improvement because it focuses on instructional substance and professional dialogue.

The positive effect of academic supervision on teacher performance can be explained through several interrelated mechanisms. First, classroom observation followed by formative feedback provides teachers with specific and actionable information about their teaching practices, which reduces instructional uncertainty and improves pedagogical decision-making. Second, continuous supervision encourages teachers to prepare learning tools more systematically because there is a clear performance standard that must be achieved. Third, follow-up programs create accountability and ensure that the results of supervision are translated into real instructional improvement. These mechanisms are consistent with research showing that performance improvement occurs when supervision is conducted as a continuous cycle rather than as a one-time evaluative activity (Lorensius et al., 2022; Syukri et al., 2023). Therefore, the effectiveness of academic supervision lies not only in its implementation but in its continuity and its orientation toward professional growth.

This study contributes theoretically by strengthening the conceptual linkage between academic supervision and teacher performance within the framework of instructional leadership and school quality management. It provides empirical evidence that supervision directly influences the core dimensions of teacher performance planning, implementation, assessment, and reflection which are the main indicators of instructional effectiveness. In addition, this study offers an operational explanation of how supervision becomes a performance improvement mechanism through feedback, professional interaction, and structured follow-up. This contribution is important because previous studies have tended to treat teacher performance as an outcome influenced by multiple organizational variables without explaining the specific working mechanism of academic supervision.

Practically, the findings of this study imply that improving teacher performance cannot rely solely on training programs or administrative evaluation systems. Instead, schools need to institutionalize academic supervision as a continuous performance coaching system. Principals should focus supervision on the substance of teaching, provide constructive and data-based feedback, and design measurable follow-up programs. For teachers, active engagement in the supervision process will help them develop reflective teaching habits and improve the quality of their instructional practice. At the policy level, strengthening the competence of principals as instructional supervisors becomes a strategic step in improving teacher performance and overall school effectiveness.

4.3 Academic Supervision and School Quality Culture.

The findings of this study indicate that academic supervision carried out in a planned, systematic, and continuous manner contributes not only to improving individual teacher performance but also to the formation of a school quality culture characterized by reflective practice, collegial collaboration, and continuous improvement. This suggests that supervision functions as an internal quality assurance mechanism that embeds professional standards into daily instructional practices. When supervision is implemented as an ongoing cycle consisting of observation, feedback, and structured follow-up, it gradually shapes shared norms, values, and expectations regarding effective teaching. In this sense, academic supervision moves beyond a technical activity and becomes a cultural instrument that influences how teachers perceive their professional responsibilities and their commitment to improving learning quality.

This finding is consistent with previous studies which report that academic supervision plays a strategic role in strengthening school quality and organizational effectiveness (Fadilah et al., 2025; Syukri et al., 2023). Research on school-based quality management also confirms that sustainable improvement

in teaching and learning can only occur when supervision is integrated into the school's internal quality assurance system rather than implemented as an incidental program (Radhiyah & Prasetyo, 2024). However, this study provides a more specific contribution by empirically demonstrating how supervision at the micro level shapes a culture of continuous professional learning within a single school context through the active involvement of all teachers using a saturated sampling approach. This strengthens the argument that school quality culture is not merely determined by policy or structural reform but by the consistency of instructional leadership practices in everyday school life. In the global discourse, this finding aligns with the view that professional learning culture is built through leadership practices that focus on instruction and teacher development (Galdames-Calderón, 2023).

From a theoretical perspective, the results of this study reinforce the principles of Total Quality Management in education, which emphasize continuous improvement, participatory leadership, and data-based decision making as the foundation of quality culture (Sallis, 2014). Academic supervision functions as a continuous improvement cycle similar to the Plan–Do–Check–Act (PDCA) model, where planning supervision represents the “plan” stage, classroom observation and implementation represent “do,” feedback and evaluation represent “check,” and follow-up programs represent “act.” Through this cycle, supervision systematically institutionalizes quality-oriented practices in teaching. At the same time, the findings extend instructional leadership theory by demonstrating that the principal's direct involvement in supervising instruction not only improves teacher competence but also shapes collective professional norms that support sustainable school improvement (Liu & Hallinger, 2018). In contrast to traditional perspectives that view school culture as a relatively static and value-based construct, this study shows that school quality culture can be actively developed through structured professional practices such as academic supervision.

The influence of academic supervision on school quality culture can be explained through several mechanisms. First, continuous supervision creates a shared understanding of instructional standards, which becomes a reference for teachers in carrying out their professional duties. Second, the feedback process encourages reflective dialogue among teachers and between teachers and principals, thereby strengthening professional collaboration and reducing individualistic teaching practices. Third, follow-up programs ensure that improvement efforts are collective and sustainable rather than individual and temporary. These mechanisms are consistent with research showing that professional learning communities emerge when there is structured leadership support for collaborative reflection and continuous improvement (Lorensius et al., 2022; Rusdi & Madihah, 2023). Therefore, academic supervision contributes to cultural transformation because it integrates professional learning into the daily routines of the school.

This study contributes theoretically by providing an integrative explanation of the relationship between academic supervision, instructional leadership, and school quality culture. It demonstrates that supervision is not only a technical process aimed at improving teacher performance but also a strategic cultural mechanism that institutionalizes continuous improvement in schools. This perspective bridges the gap between the literature on educational leadership, teacher professional development, and quality management, which have often been discussed separately. In addition, empirical evidence from a developing-country context enriches the global literature on school quality culture, which has been predominantly based on studies from developed education systems.

Practically, the findings of this study imply that efforts to build a school quality culture should begin with strengthening the academic supervision system. Principals need to design supervision programs that are sustainable, collaborative, and oriented toward instructional improvement rather than administrative compliance. Schools should position supervision as a collective professional learning process that involves all teachers and is linked to school quality assurance mechanisms. At the policy level, strengthening the capacity of school leaders as instructional supervisors and integrating supervision into quality assurance frameworks can become an effective strategy for creating a sustainable culture of quality in schools. For teachers, the existence of continuous and supportive supervision will foster reflective habits and a shared commitment to improving learning outcomes.

4.4 Relevance of Research Findings to Previous Studies

The findings of this study confirm and extend the existing body of research that identifies academic supervision as a significant determinant of teacher performance and professional development. The positive and significant relationship found in this study strengthens previous empirical evidence demonstrating that supervision contributes to improving instructional quality, pedagogical competence, and teachers' professional commitment (Mardalena et al., 2020; Muttaqin et al., 2023; Mekarsari et al., 2025). However, beyond merely confirming earlier results, this study provides a more focused analytical perspective by positioning academic supervision as a core variable that directly explains teacher performance, rather than as one component within a complex model involving multiple leadership and organizational factors as commonly found in previous studies (Yuliani et al., 2023). This more parsimonious model allows a clearer identification of the specific working mechanism of academic supervision in influencing the core dimensions of instructional practice.

In comparison with earlier studies conducted in various educational contexts, the magnitude of the contribution of academic supervision found in this research ($R^2 = 0.425$) indicates a relatively strong explanatory power at the school level. This suggests that when supervision is implemented systematically and continuously, its direct effect on teacher performance becomes more visible and measurable. Previous studies often reported indirect effects mediated by variables such as work motivation, organizational climate, or professional commitment (Rusdi & Madihah, 2023; Sitorus & Haeruddin, 2025), whereas this study demonstrates that supervision itself already has a substantial direct impact. This difference can be explained by the organizational context of the research, where supervision is carried out through structured stages and followed by concrete improvement programs, enabling it to function as a primary driver of instructional improvement rather than as a supporting managerial activity.

From a theoretical standpoint, the consistency of these findings with previous research reinforces the central position of academic supervision within the framework of instructional leadership and professional learning. International research has emphasized that leadership practices that are directly related to teaching and learning have a stronger influence on teacher effectiveness than administrative or transformational leadership practices that operate at the organizational level (Liu & Hallinger, 2018; Galdames-Calderón, 2023). The results of this study provide empirical support for this argument in the context of a developing-country education system. At the same time, the study extends the theoretical discussion by showing that academic supervision not only affects individual teacher performance but also contributes to the formation of a school quality culture through continuous professional interaction and reflective practice. This integrative finding is still relatively limited in previous empirical studies, which tend to examine supervision, teacher performance, and school culture as separate constructs.

The relevance and alignment of this study with previous research can also be explained by the similarity in the core characteristics of effective supervision identified across studies, namely structured planning, classroom observation, formative feedback, and follow-up programs (Lorensius et al., 2022; Syukri et al., 2023). These components create a professional learning cycle that consistently leads to instructional improvement regardless of the educational context. However, this study highlights that the effectiveness of these components depends on their continuity and their orientation toward professional assistance rather than evaluation. This finding provides an important refinement to earlier research that still reported supervision practices dominated by administrative compliance and document checking (Dewi, 2020), which tend to produce weaker impacts on teacher performance.

Theoretically, this study contributes to the literature by strengthening the empirical and conceptual linkage between academic supervision, instructional leadership, and school-based quality improvement. It provides a more operational explanation of how supervision works as a direct mechanism for improving teacher performance and as a cultural instrument for institutionalizing continuous improvement in schools. By offering evidence based on a saturated sampling approach within a single school, this research also responds to the methodological gap identified in recent bibliometric studies which emphasize the need for micro-level, contextually grounded investigations in supervision research (Warman et al., 2024). This contribution is important for enriching the global knowledge base, which has been largely dominated by large-scale and multilevel studies.

Practically, the strong alignment between the findings of this study and previous research provides a robust empirical foundation for policymakers and school leaders to prioritize academic supervision as a strategic instrument for improving teacher performance and school quality. The

consistency of evidence across different contexts indicates that strengthening the competence of principals as instructional supervisors and institutionalizing continuous supervision programs can become an effective and scalable strategy for educational reform. For schools, this means that efforts to improve teacher performance should not rely solely on external training but must be supported by an internal professional learning system built through structured and sustainable academic supervision.

4.5 Research gap

This study successfully addresses several critical gaps identified in previous research on academic supervision and teacher performance. First, while earlier studies frequently positioned academic supervision as one of many predictors within complex leadership and organizational models, this research demonstrates its direct and substantial effect as a core instructional leadership practice, thereby clarifying its specific working mechanism in improving the core dimensions of teaching. Second, prior empirical studies have predominantly relied on partial sampling or multilevel data that often obscure the micro-processes through which supervision influences teachers' daily instructional practices. By employing a saturated sampling approach at the school level, this study provides a comprehensive and contextually grounded explanation of how academic supervision operates as a continuous professional learning cycle involving all teachers within a single organizational setting. Third, previous studies have tended to examine teacher performance, instructional leadership, and school quality culture as separate constructs; this study integrates these three dimensions into a single analytical framework and empirically demonstrates their interrelationship. In doing so, this research not only confirms the universality of the positive impact of academic supervision across contexts but also offers a more operational and practice-oriented model for implementing supervision as a sustainable strategy for improving instructional quality and building a culture of continuous improvement in schools.

4.6 Grand Synthesis Paragraph

Taken together, the findings of this study construct a coherent argument that academic supervision constitutes the central mechanism through which instructional leadership is translated into improved teacher performance and the development of a sustainable school quality culture. The significant effect of supervision on the core components of teaching planning, implementation, assessment, and reflective follow-up demonstrates that professional improvement occurs when teachers are supported through structured, continuous, and collegial supervision processes embedded in their daily work. This confirms that teacher professionalism is not primarily shaped by episodic training programs or administrative evaluation, but by job-embedded professional learning facilitated by school leaders. Furthermore, the integration of supervision practices into the internal quality assurance system institutionalizes shared norms of reflective practice, collaboration, and continuous improvement, thereby transforming individual instructional enhancement into an organizational culture of quality. In the broader landscape of educational leadership and school effectiveness research, this study provides empirical support for the growing global shift from bureaucratic supervision toward developmental and learning-centered supervision models. It also demonstrates that in developing-country contexts, strengthening principals' capacity as instructional supervisors can become a high-leverage strategy for improving teaching quality and school effectiveness simultaneously. Thus, academic supervision emerges not merely as a managerial function but as a strategic cultural and professional infrastructure for sustainable educational improvement.

5. Conclusion

This study set out to examine the effect of principals' academic supervision on teacher performance and to analyze its role in strengthening instructional practices and school quality culture. The findings demonstrate that academic supervision has a positive and significant direct effect on teacher performance, particularly in lesson planning, instructional implementation, assessment, and reflective follow-up. The results confirm that supervision conducted through systematic stages planning, classroom observation, formative feedback, and structured follow-up functions as a job embedded professional learning process that supports continuous instructional improvement. In this sense, academic supervision

is not merely an administrative requirement but a core mechanism for enhancing teacher professionalism and improving the quality of learning at the school level.

This study provides an integrative synthesis by empirically showing that academic supervision operates simultaneously at the individual and organizational levels: improving teachers' professional performance while also fostering a culture of continuous quality improvement in schools. The main contribution of this research lies in positioning academic supervision as a central instrument of instructional leadership with a clear operational mechanism and measurable impact, rather than as a complementary managerial activity. By employing a saturated sampling approach, this study offers a comprehensive school-based model that explains how supervision becomes a sustainable professional learning cycle embedded in daily instructional practices. This integrative perspective enriches the theoretical linkage between instructional leadership, teacher professional development, and school quality management, particularly in the context of developing-country education systems that remain underrepresented in the global literature.

Practically, these findings imply that schools need to redesign academic supervision as a continuous professional development system that emphasizes collegial dialogue, formative feedback, and measurable follow-up programs. Strengthening the competence of school principals as instructional supervisors should become a strategic priority for improving teacher performance and school effectiveness. For future research, further studies are recommended to develop multilevel and longitudinal models that examine the mediating and moderating variables of academic supervision, such as teacher self-efficacy, professional learning communities, and digital-based supervision practices. In addition, comparative and mixed-method studies across different educational contexts are needed to deepen understanding of how supervision contributes to sustainable educational quality improvement.

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