



Encouragement of Educators for SDG 4: An Investigation into Lesson Study-Based Peer Supervision

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Abstract:

This study aims to examine the role of collaborative supervision based on lesson study in enhancing teacher professionalism and improving learning quality in alignment with global educational priorities such as SDG 4 promoted by the United Nations. The background of this research is grounded in the persistent limitations of traditional supervisory practices, which tend to be hierarchical and evaluative rather than developmental. This study employed a qualitative case study design, involving classroom observations, in-depth interviews with teachers, and document analysis. Data were analyzed using thematic analysis to identify patterns across supervisory practices and instructional improvement. The findings reveal that multi-directional collaboration fosters professional dialogue and shared responsibility among teachers and school leaders. Furthermore, the integration of the lesson study cycle (Plan-Do-See) into supervision creates a systematic and continuous process of professional learning. Additionally, the shift toward a learning-centered focus enables teachers to better understand student engagement and learning processes. Evidence-based practices also demonstrate measurable improvements in learning quality, including student participation and instructional variation. These findings contribute to the development of a comprehensive supervision model that integrates collaboration, systematic cycles, and data-driven practices.

INTRODUCTION

Educational supervision remains a critical issue in improving teaching quality and student learning outcomes in contemporary education systems (Mutohar & Trisnantari, 2020; Samsilayurni et al., 2025). Many schools continue to rely on traditional supervisory practices that emphasize evaluation rather than professional development (Gordon, 2023; Miller, 2023). This condition creates a gap between the ideal concept of supervision as a developmental process and its implementation in practice. In theory, supervision is expected to support teachers through guidance, collaboration, and reflection. However, in reality, supervision is often perceived as administrative control that limits teacher creativity and

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autonomy (Suriagiri et al., 2022). This discrepancy raises questions about how supervision can effectively contribute to teacher professionalism and learning quality. Furthermore, global educational agendas such as SDG 4 emphasize the importance of quality education, which requires effective instructional support systems (Seesai et al., 2024). The persistence of ineffective supervision practices suggests that current approaches may not adequately address the needs of teachers and students.

Effective supervision is not merely about assessing teacher performance, but about cultivating a professional environment where continuous improvement becomes an embedded culture (Estaji & Ghiasvand, 2022; Mwasawa & Wainaina, 2021). This requires supervision to be dialogical rather than hierarchical—positioning teachers not as objects of evaluation, but as active agents in their own professional growth. In this sense, feedback is no longer a one-directional instrument of control, but a reciprocal process grounded in evidence, reflection, and mutual trust.

A critical dimension of this transformation lies in the integration of reflective practice. When teachers are encouraged to critically examine their instructional decisions, classroom interactions, and student outcomes, supervision evolves into a space for intellectual engagement rather than administrative compliance (Conroy et al., 2018; Suryaningsih & Aisyah, 2024). Reflection, however, cannot stand alone; it must be supported by structured opportunities for collaboration. Collegial interactions—such as joint lesson planning, peer observation, and collective problem-solving—create a shared epistemic community in which knowledge is co-constructed.

Various approaches—such as collaborative learning among teachers, continuous feedback mechanisms, reflective practice, structured lesson analysis, and the use of evidence-based strategies—have each demonstrated their potential to enhance instructional quality and student outcomes (Aifan, 2022; Ghani et al., 2021). However, a closer analysis shows that these elements are often conceptualized and implemented in isolation. Collaboration may occur without systematic reflection, reflective activities may lack empirical grounding, and evidence-based practices may be applied without sufficient collegial dialogue or contextual adaptation (Net et al., 2023; Ni et al., 2023). This disconnection creates a partial and sometimes superficial impact, as each component loses its transformative potential when detached from a broader, coherent system. In practice, schools may adopt one approach—such as peer collaboration or classroom observation—without embedding it into a continuous cycle of feedback, analysis, and instructional redesign.

The underlying issue is not the absence of effective strategies, but the lack of integration among them. Teacher development requires a dynamic interplay between doing, observing, analyzing, and refining practice (Brown, 2023; Chakraborty & Biswas, 2020; Ni et al., 2023). When collaboration is combined with structured inquiry—such as jointly designing lessons, observing their implementation, and critically reflecting on outcomes—professional learning becomes both collective and evidence-driven. Feedback is no longer incidental, but systematically generated through shared experiences and grounded in actual teaching practice (Bock et al., 2024; Cañadas, 2023; Chen & Yuan, 2021). Reflection, in turn, becomes more rigorous because it is supported by concrete data and multiple perspectives.

The lack of integration results in supervision models that are either theoretical or difficult to implement. This study addresses this gap by proposing a model that combines multi-directional collaboration, lesson study cycles, learning-centered focus, and evidence-based evaluation. The novelty of this research lies in its holistic approach, which connects different dimensions of supervision into a coherent framework. Therefore, this study contributes to advancing the theoretical and practical understanding of educational supervision. This study aims to investigate how collaborative supervision based on lesson study can enhance teacher professionalism and improve learning quality at Islamic Elementary School. This study contributes to the field of educational supervision by proposing an integrated model that combines collaboration, systematic processes, and evidence-based practices. The research offers a new perspective on supervision as a dynamic and continuous professional learning process.

RESEARCH METHOD

The unit of analysis in this study is the implementation of collaborative supervision practices within a primary Islamic school setting, specifically the State Islamic Elementary School 1 Malang City. This study employs a qualitative research design with a case study approach to explore the complexity of supervisory practices in depth (Mulisa, 2022). A qualitative approach is appropriate because it allows the researcher to understand participants' experiences, perceptions, and interactions in a natural setting. The case study design enables a detailed examination of a specific context, providing rich and contextualized insights into the phenomenon under investigation.

The sources of information in this study consist of informants and documents that are relevant to supervisory practices. Informants include teachers, the school principal, and peer observers who are directly involved in the supervision process. Documents such as lesson plans, supervision reports, and school policies are also analyzed to complement the data obtained from participants. Data collection techniques include desk review, classroom observation, and in-depth interviews. Desk review is conducted to examine relevant documents and institutional records. Observations are carried out to capture real classroom interactions and supervisory activities. In-depth interviews are conducted to explore participants' perspectives and experiences. The combination of these techniques ensures data triangulation and enhances the validity of the findings (see Table 1).

Table 1. The Data Collection Matrix

Data Source	Technique	Instrument	Focus Area
Teachers	Interview, Observation	Interview guide, field notes	Teaching practices, collaboration
Principal	Interview	Interview guide	Supervisory roles and policies
Documents	Desk review	Document checklist	Lesson plans, supervision records

Data analysis in this study follows the interactive model proposed by Miles, Huberman, and Saldaña, which consists of data reduction, data display, and conclusion drawing or verification (Stanley, 2023). Data reduction involves selecting, focusing, and simplifying raw data obtained from observations, interviews, and documents. This process helps in identifying key themes related

to collaborative supervision and lesson study. Data display is conducted by organizing information into visual formats such as tables, diagrams, and narrative descriptions, enabling clearer interpretation of patterns and relationships. Verification involves drawing conclusions and validating findings through continuous comparison and triangulation. In addition to these stages, the study employs content analysis to examine textual data, discourse analysis to explore communication patterns, and interpretive analysis to understand participants' perspectives.

FINDINGS AND DISCUSSION

Multi-Directional Collaboration

Multi-directional collaboration emerged as a fundamental finding in this study, indicating a shift from hierarchical supervision toward a more participatory and collegial approach. In this model, teachers, the principal, and peer educators actively engage in supervisory practices, creating a shared professional space. Rather than relying on top-down instructions, supervision is conducted through dialogic interactions that allow multiple perspectives to be considered. This collaborative environment encourages the exchange of ideas, teaching strategies, and classroom experiences among participants. Furthermore, such interaction fosters mutual trust and reduces the psychological barriers often found in traditional supervision. As a result, supervision becomes a collective learning process rather than an evaluative mechanism. Therefore, multi-directional collaboration represents a transformative approach that redefines the role of supervision in professional development.

Teachers actively shared their teaching experiences, challenges, and innovative practices during post-observation meetings. The principal facilitated discussions without dominating them, allowing equal participation from all members. Peer teachers also provided constructive feedback based on observed classroom practices. For instance, teachers frequently engaged in reflective dialogue after lessons, highlighting strengths and areas for improvement. This dynamic interaction demonstrated that supervision was no longer confined to formal evaluation but extended into continuous professional dialogue. Consequently, the observed practices confirm that collaboration occurred in multiple directions, involving various stakeholders in meaningful ways. The collaborative structure can be illustrated as an interconnected network rather than a linear hierarchy (see Figure 1).

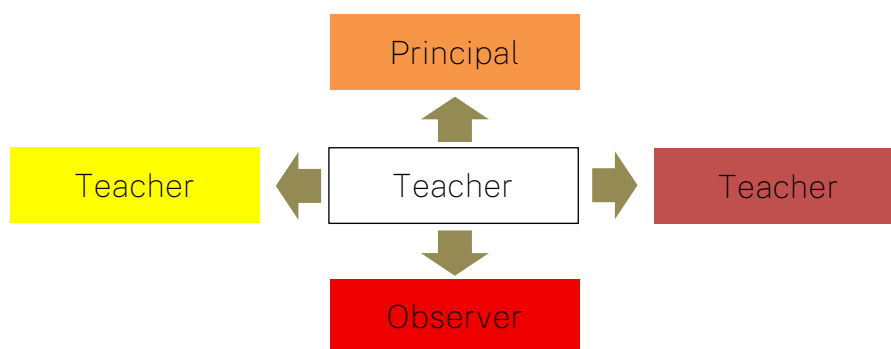


Figure 1. Communication Flows in Multiple Directions Among Participants

Multi-directional collaboration redefines supervisory practices by promoting inclusivity and shared authority. The presence of multiple actors enriches the supervisory process by incorporating diverse perspectives. Consequently, supervision becomes more responsive to classroom realities and teacher needs. This shift suggests that effective supervision depends not only on structure but also on relational dynamics among participants.

Multi-directional collaboration can be considered a key driver of effective supervisory practices in educational settings. By transforming supervision into a collaborative network, it enhances teacher engagement and professional growth. This model can be applied in various educational contexts to foster a culture of shared learning and continuous improvement. Therefore, the study concludes that collaborative supervision contributes significantly to the development of a professional learning community.

Integration of the Lesson Study Cycle into Supervision

The integration of the lesson study cycle into supervision represents a systematic approach to improving teaching practices. This model adopts the Plan-Do-See cycle as the core structure of supervisory activities. Teachers collaboratively design lesson plans, implement them in real classrooms, and reflect on the outcomes together. This cyclical process ensures that supervision is continuous and iterative rather than sporadic. Additionally, it emphasizes collective responsibility in improving instructional quality. Through this integration, supervision becomes a structured professional development strategy. Therefore, the lesson study cycle provides a clear framework for enhancing teaching effectiveness.

Observational data revealed that teachers consistently engaged in collaborative lesson planning sessions before classroom implementation. During the “Do” phase, one teacher conducted the lesson while others observed student responses and interactions. In the “See” phase, participants discussed the observed outcomes, focusing on both strengths and areas for improvement. These reflections were grounded in real classroom evidence rather than assumptions. The principal played a facilitative role, ensuring that discussions remained constructive and focused. This process was repeated across multiple cycles, indicating a sustained implementation of the lesson study model. Thus, supervision became a continuous learning cycle embedded in daily practice.

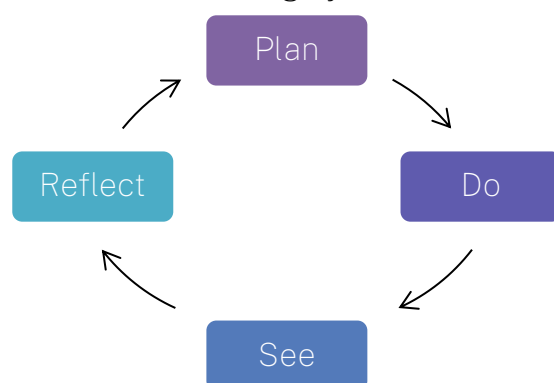


Figure 2. The Iterative Nature of Supervision Cycle

Integrating the lesson study cycle transforms supervision into a structured and reflective process. Unlike traditional supervision, which may occur irregularly, this approach ensures continuity and consistency. The cyclical nature promotes sustained professional development and encourages teachers to engage in reflective practice. Moreover, it aligns supervision with real classroom experiences, making it more relevant and practical. Therefore, this integration enhances both the effectiveness and sustainability of supervisory practices.

The lesson study-based supervision model offers a systematic framework for improving teaching quality. Its cyclical structure supports continuous learning and professional growth among teachers. This model can be adapted across different educational contexts to strengthen supervisory practices. Hence, the study concludes that integrating lesson study into supervision contributes significantly to sustainable educational improvement.

Learning-Centered Focus

A learning-centered focus emerged as a critical shift in supervisory practices, emphasizing student learning rather than teacher performance. In this approach, supervision prioritizes the observation of student activities, classroom interactions, and learning processes. The goal is to understand how students engage with the material and construct knowledge. This paradigm shift reflects a move away from evaluative supervision toward analytical observation of learning dynamics. Consequently, supervision becomes more aligned with educational outcomes. Therefore, focusing on learning processes enhances the relevance of supervisory practices.

Observations indicated that supervisors paid close attention to student engagement, participation, and interaction during lessons. Teachers were observed analyzing how students responded to instructional strategies. Interviews further supported these findings. T1 stated, “I now focus more on how students respond rather than how I teach.” T2 explained, “Supervision helps me see whether students really understand the material.” T3 added, “We discuss student learning patterns, not just teaching methods.” These responses demonstrate that supervision has shifted toward understanding student learning. Thus, both observational and interview data confirm a learning-centered approach.

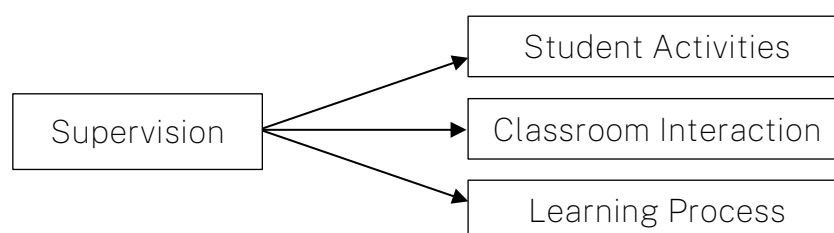


Figure 3. The Focus of Supervision

Figure 3 highlights the central role of student learning in supervisory practices. The findings indicate a significant paradigm shift in supervision, from teacher-centered evaluation to student-centered analysis. This shift enhances the effectiveness of supervision by aligning it with learning outcomes. By focusing on students, teachers gain deeper insights into instructional

effectiveness. Furthermore, this approach promotes reflective teaching practices. Therefore, learning-centered supervision represents a more meaningful and impactful model.

Evidence-Based Improvement in Learning Quality

Evidence-based improvement in learning quality highlights the importance of data in evaluating teaching effectiveness. This finding emphasizes that improvements should be measured using observable indicators rather than subjective perceptions. Key indicators include student achievement, engagement, and instructional variation. By relying on empirical data, supervision becomes more objective and accountable. Therefore, evidence-based evaluation strengthens the credibility of supervisory practices.

Observational data showed improvements in student participation and engagement during lessons. Teachers implemented varied instructional strategies, resulting in more interactive classrooms. Student responses indicated better understanding of the material. These improvements were consistently observed across multiple supervisory cycles. Additionally, teachers reported increased confidence in their teaching practices. Thus, the findings demonstrate measurable improvements in learning quality.

Table 2. Learning Quality Improvement Indicators

Indicator	Description of Learning Quality
Student Achievement	Students demonstrate improved understanding
Student Engagement	Active participation in classroom activities
Teaching Methods	Use of varied and interactive strategies

Table 2 summarizes the key indicators used to assess learning quality. The findings confirm that evidence-based supervision enhances the accuracy of evaluating teaching effectiveness. By using measurable indicators, supervision moves beyond subjective judgment. This approach ensures that improvements are clearly identified and documented. Furthermore, it provides a basis for continuous improvement. Therefore, data-driven supervision represents a more reliable model.

Evidence-based practices are essential for improving learning quality in educational settings. By focusing on measurable outcomes, supervision becomes more effective and transparent. This approach can be applied in various contexts to enhance educational quality. Hence, the study concludes that evidence-based supervision is crucial for achieving sustainable improvements in learning.

Discussion

Multi-directional collaboration represents a significant transformation in supervisory practices by shifting from hierarchical control to collegial interaction. This finding aligns with contemporary perspectives on professional learning communities, where collaboration is considered a key driver of teacher development (Dietrich et al., 2021; Karim et al., 2021). In this study, collaboration was not limited to formal meetings but extended to continuous dialogue among teachers, principals, and peers. Such interaction fosters shared responsibility and collective problem-solving, which enhances professional trust and openness. Moreover, the presence of multiple actors enables diverse perspectives, enriching the supervisory process and making it more contextually relevant.

Collaborative environments improve both teaching quality and student outcomes (Qureshi et al., 2023). The shift toward multi-directional collaboration also reduces the evaluative pressure often associated with traditional supervision. Therefore, this finding suggests that effective supervision requires relational dynamics that support mutual learning and shared authority.

The integration of the lesson study cycle into supervision introduces a systematic and iterative approach to professional development. This finding supports the argument that sustainable improvement in teaching requires continuous cycles of planning, implementation, and reflection (Cheng & Chan, 2021). In this study, the Plan-Do-See cycle provided a structured framework that guided supervisory practices. Teachers collaboratively designed lessons, observed classroom implementation, and reflected on outcomes based on real evidence. This process ensured that supervision was not episodic but embedded in daily teaching practices. Additionally, the cyclical nature promotes reflective practice, which is essential for professional growth (Assalihee et al., 2024; Fawaid & Malika, 2025). The integration also enhances the relevance of supervision by aligning it with actual classroom experiences. As a result, teachers are more engaged in the process, leading to meaningful improvements in instructional practices. Therefore, this finding highlights the importance of systematic and continuous supervision for achieving sustainable educational development.

The shift toward a learning-centered focus marks a critical paradigm change in supervisory practices. Traditionally, supervision emphasized teacher performance, often neglecting student learning processes. However, this study demonstrates that focusing on student activities, interactions, and understanding provides deeper insights into instructional effectiveness. This finding is consistent with the concept of formative assessment, which emphasizes monitoring student learning to improve teaching (Mudarris et al., 2022). By analyzing how students engage with the material, teachers can identify gaps in understanding and adjust their strategies accordingly. Furthermore, this approach encourages reflective teaching, as teachers become more aware of the impact of their instructional decisions. The learning-centered focus also aligns with student-centered learning theories, which prioritize active participation and meaningful engagement (Alawiyah et al., 2023). Therefore, this finding suggests that supervision should prioritize student learning as the primary indicator of teaching effectiveness.

Evidence-based improvement in learning quality emphasizes the role of empirical data in evaluating educational outcomes. This finding highlights the importance of using measurable indicators such as student achievement, engagement, and instructional variation. Data-driven decision-making significantly enhances teaching effectiveness and student performance (Dietrich et al., 2021; Qingyan et al., 2023). In this study, improvements were not based on subjective perceptions but supported by observable changes in classroom practices and student responses. The use of evidence also increases the accountability and transparency of supervisory processes. Moreover, data-driven supervision enables teachers to track progress over time, facilitating continuous improvement. This approach aligns with the principles of evidence-based education, which advocate for the use of research and data in decision-making (Muttaqin et al., 2023; Safitri & Lateh, 2025). Therefore, this finding demonstrates that effective supervision requires a strong foundation in empirical evidence to

ensure reliable and sustainable improvements.

The four findings can be synthesized into a coherent framework that illustrates the relationship between actors, processes, focus, and outcomes. Multi-directional collaboration serves as the foundational input, involving various stakeholders in the supervisory process. This collaborative environment enables the implementation of the lesson study cycle as a structured and continuous process. Within this process, the focus shifts toward student learning, emphasizing the analysis of classroom interactions and learning dynamics. Supervision leads to measurable improvements in learning quality, supported by empirical evidence. Such a framework aligns with systems thinking in education, which emphasizes the interconnectedness of different components (Gardner et al., 2022; Javornická et al., 2024). Therefore, the synthesis demonstrates that effective supervision requires the integration of multiple elements to achieve meaningful educational outcomes.

The findings of this study have significant implications for both theory and practice in educational supervision. The shift toward collaborative, systematic, learning-centered, and evidence-based supervision suggests the need for a comprehensive model that integrates these elements. For practitioners, this means adopting supervisory practices that promote collaboration, continuous reflection, and data-driven decision-making. For policymakers, the findings highlight the importance of supporting professional learning communities and structured supervision models. Theoretically, this study contributes to the development of a holistic framework for supervision that aligns with contemporary educational goals, including quality education as emphasized in global agendas. Effective supervision is not merely an evaluative tool but a dynamic process that fosters professional growth and improves learning outcomes. Therefore, integrating collaboration, lesson study, learning focus, and evidence-based practices is essential for achieving sustainable improvements in education.

CONCLUSION

This study concludes that the most important insight lies in demonstrating how collaborative learning study-based supervision transforms traditional hierarchical practices into a systematic, reflective, and learning-centered process that meaningfully improves teacher professionalism and the quality of instruction. A key lesson learned is that supervision is effective when it is participatory, ongoing, and based on concrete classroom evidence, rather than administrative control. This study is limited to a single case, involving a relatively homogeneous group of participants in terms of gender, age, and institutional context, which may limit broader generalizability. Therefore, future research is recommended to include a more diverse group of participants across gender, age groups, and institutional variations, and to employ survey or mixed-method approaches to generate more comprehensive data that can better inform targeted, evidence-based education policy.

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