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Principal Academic Supervision Management in Improving the Pedagogic Competence of Vocational School Teachers

Ahmad Rival Anshori and Wiwik Dyah Andayani

Nusantara Islamic University, Bandung, Indonesia

Corresponding Author: ahmadrivalanshori@uninus.ac.id

Abstract. This study investigates the management of academic supervision by principals at SMKN 1 and SMKN 2 Leles, Cianjur Regency, in improving teachers' pedagogic competence. Using a qualitative case study design, the research involved principals, vice principals, and vocational subject teachers as key informants. Data were collected through participatory observation, in-depth interviews, and document analysis, and were analyzed using Miles, Huberman, and Saldaña's interactive model. The findings indicate that supervision planning at both schools is supported by structured annual programs, standardized observation instruments based on pedagogic competence indicators, and participatory decision-making involving senior teachers and management teams. Implementation integrates clinical supervision techniques and reflective feedback to enhance lesson planning, classroom management, and assessment practices. Evaluation and follow-up mechanisms demonstrate progress toward evidence-based decision-making; however, the absence of standardized impact assessment tools limits the measurement of supervision outcomes on student learning. Supporting factors include leadership commitment, teacher motivation, and adequate facilities, while inhibiting factors involve limited training, inconsistent follow-up, and weak integration of supervision results into broader school development plans. The study concludes that effective academic supervision management in vocational schools should combine strategic planning, consistent implementation, data-driven evaluation, and sustainable follow-up, tailored to the unique characteristics of the vocational education context.

Keywords: academic supervision, pedagogic competence, vocational school, instructional leadership, education management

1 Introduction

Vocational high schools (*Sekolah Menengah Kejuruan* or SMK) play a strategic role in preparing graduates who are ready to enter the workforce and compete in an increasingly demanding global market [1], [2]. However, despite this mandate, national data show that the unemployment rate in Indonesia is still dominated by vocational school graduates, reaching 10.38%. This condition reflects a gap between the quality

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of learning in SMKs and the competencies required by industry, indicating the need for systematic interventions to improve the quality of teaching and learning processes[3].

One crucial determinant of learning quality is teachers' pedagogic competence, which encompasses their ability to design, implement, and evaluate effective learning experiences [4]. In vocational education, this competence is particularly critical given the dual emphasis on theoretical mastery and practical skills aligned with industrial standards. The principal's academic supervision serves as a strategic mechanism to support teachers in developing these competencies, ensuring that vocational learning remains relevant, responsive, and effective [5]–[9].

Regulation of the Minister of Education and Culture No. 15 of 2018 on the Fulfilment of Minimum Service Standards in Education underscores the principal's role not only as an instructional leader but also as a manager of academic supervision. Effective academic supervision management involves structured planning, systematic implementation, and evidence-based evaluation to support continuous professional growth among teachers. However, in practice, the quality and impact of academic supervision vary significantly across schools and regions.

Previous studies have confirmed the positive influence of academic supervision on teachers' pedagogic competence. Bano in Aminah et al. (2022) reported that targeted academic supervision improved both pedagogic and professional skills through direct, indirect, and collaborative approaches. Astoro further demonstrated that principal-led academic supervision in Grobogan Regency had a statistically significant impact on learning quality ($t = 2.56$). Nevertheless, these studies often focus on the technical implementation of supervision and rarely address the managerial dimension how principals plan, organize, and evaluate supervision as part of a systemic school management strategy.

In Cianjur Regency, preliminary observations at SMKN 1 and SMKN 2 Leles reveal persistent challenges despite ongoing academic supervision. Issues such as incomplete lesson planning and limited teacher creativity in selecting learning methods remain common[10]. This suggests that while supervision activities are being carried out, the management aspect integrating planning, monitoring, and follow-up actions may not yet be optimized.

This research addresses a significant gap by examining academic supervision management in the specific context of vocational schools in Cianjur Regency. The novelty lies in developing a comprehensive academic supervision management model that considers the unique characteristics of SMKN 1 Leles an A-accredited school with a score of 92 in 2021 and SMKN 2 Leles, which has conducted UNBK for two consecutive years and runs a special graduate placement program in Japan [11]. By comparing these two schools, the study offers a nuanced understanding of how local context shapes the design and implementation of academic supervision.

Although numerous studies have examined the influence of academic supervision on teachers' pedagogic competence. most have focused on technical or procedural aspects of supervision, such as observation techniques, mentoring models, or teacher training outcomes. Far fewer have addressed the managerial dimension of academic supervision how principals strategically plan, implement, monitor, and evaluate supervision as part of a broader school management system.

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Furthermore, prior research has rarely explored academic supervision in vocational school contexts with diverse institutional characteristics within the same region. In Cianjur Regency, SMKN 1 Leles and SMKN 2 Leles represent two high-performing vocational schools with distinct profiles and strengths, yet there has been no comparative study examining how contextual factors influence the design and management of academic supervision in each school. This gap limits the development of adaptive and context-sensitive supervision models that could be applied across SMKs with varying needs and resources.

The study aims to: (1) analyze principals' academic supervision planning at SMKN 1 and SMKN 2 Leles; (2) describe the implementation of academic supervision in improving teachers' pedagogic competence; (3) identify the evaluation and follow-up mechanisms of supervision; (4) examine supporting and inhibiting factors in supervision practices; and (5) formulate an effective academic supervision management model for vocational school principals. The findings are expected to inform academic supervision policy development in SMKs and contribute theoretically to the field of educational management, particularly in principal-led academic supervision.

The novelty of this study lies in its development of a comprehensive academic supervision management model tailored to the unique conditions of vocational schools in Cianjur Regency. Unlike previous research that has focused narrowly on implementation, this study integrates planning, implementation, evaluation, and follow-up as interconnected managerial functions.

In addition, the study introduces a comparative dimension between two vocational schools with different institutional strengths SMKN 1 Leles with its top-tier accreditation and SMKN 2 Leles with its specialized overseas employment program. By situating academic supervision within these contrasting contexts, the research provides new insights into how supervision management can be optimized to improve teachers' pedagogic competence in both theory-based and practice-oriented vocational programs.

This approach positions the principal not only as a supervisor but also as a strategic instructional leader who aligns supervision management with school vision, industry demands, and teacher professional growth, thus contributing a replicable model for other vocational schools facing similar challenges.

2 Method

This study employs a qualitative approach with a case study design. The qualitative approach was chosen because it allows the researcher to deeply understand phenomena within their natural and social contexts, as well as to explore the subjective meanings of informants' experiences [12]. The case study design enables an in-depth exploration of academic supervision management practices in real-life contexts, particularly when the boundaries between the phenomenon and its context are not clearly defined[13], [14]. The research was conducted at two public vocational high schools, SMKN 1 Leles and SMKN 2 Leles in Cianjur Regency, which were selected purposively due to their

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differing characteristics in implementing academic supervision to improve teachers' pedagogic competence.

The research subjects included school principals, vice principals for curriculum, and teachers, all of whom are directly involved in the planning, implementation, and evaluation of academic supervision. This participant selection aimed to obtain descriptive data regarding patterns, strategies, and managerial practices applied in academic supervision at the vocational school level.

Data were collected using method triangulation techniques: participatory observation, in-depth interviews, and document analysis. Observations were conducted at both research sites to capture real-time supervision practices and teacher–principal interactions [15]. Semi-structured interviews were carried out to explore informants' perceptions, experiences, and evaluations regarding academic supervision management. Document analysis was used to review supervision plans, curriculum documents, lesson plans, and supervision reports[16].

In this qualitative approach, the researcher acted as the primary instrument [17], orchestrating interaction strategies, eliciting data, and interpreting field findings. Auxiliary instruments such as interview guides, observation sheets, and document analysis formats were used to ensure systematic and well-structured data collection.

Data validity was tested using the four criteria proposed by Lincoln and Guba: credibility, transferability, dependability, and confirmability. Credibility was ensured through source and method triangulation as well as member checking. Transferability was addressed by providing thick, contextual descriptions. Dependability and confirmability were reinforced through the use of audit trail documentation and reflective field notes[18].

Data analysis employed the interactive model by Miles, Huberman, and Saldaña[19], which consists of three concurrent stages: (1) data reduction, involving the selection, simplification, and transformation of raw data; (2) data display, presenting data in narrative, tabular, or diagrammatic form; and (3) conclusion drawing and verification, conducted iteratively to ensure accuracy and consistency of findings.

The research was conducted from February to April 2025, covering the preparation, data collection, analysis, and reporting phases. Through this approach, the study aims to generate contextually relevant and applicable insights into the management of academic supervision for improving teachers' pedagogic competence in vocational schools.

3 Results

3.1 Academic Supervision Planning

Based on the findings at SMKN 1 and SMKN 2 Leles, the principals have developed annual academic supervision programs in a systematic and structured manner. These programs include supervision schedules, success indicators, and observation

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instruments aligned with teachers' pedagogical competencies, particularly in lesson planning, classroom management, and learning assessment.

At SMKN 1, planning activities follow a clinical supervision model with a pre-conference stage that analyzes teachers' needs using the previous year's lesson plans. The principal employs standardized observation rubrics but allows adjustments to accommodate the specific competencies of productive subject teachers. At SMKN 2, a hybrid model combining cognitive coaching and collaborative supervision is applied, with teachers actively involved in creating supervision schedules and determining assessment indicators.

The participatory planning approach is reflected in the following interview excerpt:

> *"Here, supervision is not just an inspection. We sit together with the principal to decide what will be observed and which skills to focus on."* (Productive subject teacher, interview, March 2025)

Documentation of the 2024–2025 supervision program at both schools shows a semester-based supervision matrix, observation rubrics built on pedagogical competency indicators, and meeting minutes from preparatory discussions. This approach aligns with the principles of distributed instructional leadership, which emphasize the importance of collaboration in instructional management[20].

The findings confirm that principals at both schools have a clear understanding of supervision as a tool for continuous professional development. The active involvement of teachers in supervision planning fosters a sense of ownership and strengthens commitment to program implementation, reflecting the shared decision-making principle central to professional learning communities[21], [22].

Furthermore, the use of standardized observation instruments ensures that supervision remains objective and focused on improving essential teaching practices. This aligns with Darling-Hammond[23], who emphasize that observation tools designed with professional competency frameworks accelerate improvements in teaching effectiveness and student learning outcomes.

The participatory and well-documented planning process also helps cultivate an open school climate conducive to ongoing improvement. Such a culture is positively correlated with student achievement [24] and reinforces organizational values of accountability and transparency.

3.2 Implementation of Academic Supervision

The implementation of academic supervision at SMKN 1 and SMKN 2 Leles demonstrates a commitment to improving teachers' pedagogical competence through structured and collaborative practices. At SMKN 1, supervision is carried out twice per semester, combining classroom observations with post-observation reflection sessions. The principal adopts a clinical supervision cycle, starting with a pre-observation conference, followed by classroom visits, and concluding with a feedback session focused on lesson planning quality, student engagement strategies, and formative assessment techniques.

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At SMKN 2, the principal integrates peer coaching into supervision by pairing teachers from different subject areas to share best practices and observe each other's classes. This model encourages mutual learning and reduces the perception of supervision as a purely evaluative process. Observations focus on differentiated instruction, integration of technology in teaching, and alignment of learning objectives with vocational competencies. Teachers at both schools report that the feedback received is constructive and actionable. As one teacher stated:

> "I no longer see supervision as judgment, but as a chance to get ideas to make my lessons more engaging for students." – (Productive subject teacher, SMKN 2, interview, March 2025)

The integration of reflective dialogue into the supervision process aligns with Glickman's developmental supervision theory, which emphasizes tailored feedback and collaborative problem-solving to enhance professional growth.

3.3 Evaluation and Follow-up Mechanisms

Evaluation of academic supervision at SMKN 1 and SMKN 2 is conducted using both formative and summative approaches. At SMKN 1, formative evaluations occur immediately after observations, while summative evaluations are carried out at the end of the semester to assess progress against the supervision plan. At SMKN 2, evaluation is continuous, with periodic review meetings every six weeks to monitor improvements in pedagogical practice.

Follow-up mechanisms include mentoring programs, lesson study workshops, and targeted in-house training based on identified teacher needs. For example, if observation data indicate weaknesses in student-centered learning methods, the follow-up includes microteaching sessions focusing on active learning strategies.

Documentation of evaluation reports reveals a shift from generic recommendations to data-driven action plans. This reflects the principles of evidence-based instructional leadership [25], where decisions are informed by systematically collected classroom data.

3.4 Supporting and Inhibiting Factors

The research identified several supporting factors that contribute to the success of academic supervision:

1. Leadership Commitment – Principals at both schools allocate dedicated time for supervision and ensure its integration into the school's annual work plan.
2. Teacher Engagement – Active participation from teachers in planning and follow-up activities strengthens the sense of ownership.
3. Resource Availability – Access to teaching aids, digital platforms, and vocational laboratories supports implementation of feedback.

However, inhibiting factors were also observed:

1. Time Constraints – Overlapping administrative duties limit the frequency of supervision sessions.

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2. Varied Teacher Readiness – Some teachers, particularly in vocational subjects, have limited exposure to modern pedagogical strategies.
3. Insufficient External Support – Limited professional development programs from the education office reduce opportunities for capacity building.

These findings align with Hallinger's instructional leadership model, which highlights that systemic support, resource provision, and teacher readiness are critical for sustaining effective supervision.

3.5 Formulation of an Effective Academic Supervision Management Model

Based on the findings, an integrated academic supervision management model is proposed for vocational school principals in Cianjur Regency. The model consists of five interrelated components:

1. Collaborative Planning – Joint formulation of supervision plans with teachers, incorporating vocational context needs.
2. Differentiated Implementation – Use of varied supervision approaches (clinical, peer coaching, lesson study) based on teacher readiness and subject specificity.
3. Data-driven Evaluation – Systematic collection and analysis of observation data to inform targeted interventions.
4. Structured Follow-up – Tailored professional development activities directly linked to supervision findings.
5. Continuous Support System – Establishment of a professional learning community (PLC) to sustain reflective practice and peer collaboration.

This model is designed to be context-sensitive, taking into account the dual academic and vocational mandate of SMKs. It operationalizes Robinson's leadership dimensions promoting teacher learning, establishing clear goals, and ensuring strategic resource allocation as a foundation for improving pedagogical competence.

4 Discussion

The findings indicate that the planning of principals' academic supervision at SMKN 1 and SMKN 2 Leles reflects a systematic and collaborative approach. The inclusion of vice principals, senior teachers, and curriculum coordinators in formulating the supervision plan suggests an awareness of the need for participatory and context-specific planning. This aligns with the principles of Total Quality Management (TQM), which emphasize continuous improvement through structured cycles such as the PDCA (Plan–Do–Check–Act) model [26], [27]. However, while planning documents are well-prepared and supported by standardized observation instruments, the process has not fully evolved into a data-driven strategic framework that explicitly links supervision objectives with long-term school development goals.

From the perspective of Instructional Leadership Theory, principals' roles in both schools demonstrate an orientation toward improving teaching quality by fostering teacher participation and professional dialogue [28]. Nevertheless, the degree of teacher

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engagement varies; at SMKN 1, participation in planning and pre-observation meetings is relatively high, while at SMKN 2, some teachers still perceive supervision as a formal compliance requirement rather than a growth-oriented activity. This suggests the need to strengthen teachers' intrinsic motivation to view supervision as a collaborative learning process rather than solely as evaluation.

In terms of implementation, the integration of clinical supervision and peer coaching models indicates a shift toward more developmental and reflective practices. Such models are consistent with Glickman's developmental supervision theory, which advocates tailoring supervision methods to teacher readiness and needs [29]. However, implementation is still constrained by time limitations due to overlapping administrative responsibilities and by variations in teachers' pedagogical readiness particularly among vocational subject instructors who may have strong technical skills but limited exposure to innovative teaching methods.

The evaluation and follow-up mechanisms in both schools demonstrate progress toward evidence-based instructional leadership [30]. The move from generic feedback to targeted, data-informed action plans reflects an emerging culture of accountability. Yet, the absence of a standardized impact assessment system especially one that quantitatively links supervision outcomes to student performance limits the ability to measure the effectiveness of interventions in a robust manner [31].

Supporting factors such as leadership commitment, teacher willingness to engage in reflective dialogue, and adequate resource provision contribute to the positive implementation of supervision. These findings are consistent with School-Based Management (SBM) principles, which highlight local accountability and participatory decision-making as key drivers of improvement [32]. Conversely, inhibiting factors include insufficient external training support, inconsistent follow-up on identified weaknesses, and limited systemic integration of supervision results into broader school development plans.

From the perspective of Empowerment Theory, these constraints indicate that the potential of principals and teachers as agents of change has not yet been fully actualized due to limited access to sustained professional development and facilitation [33]. Bridging this gap will require capacity building not only for teachers but also for school leaders, supported by structured mentoring and cross-school collaboration networks.

Structurally, national policy frameworks such as the Regulation of the Minister of Education and Culture No. 13 of 2007 on Principal Competencies provide a strong legal foundation for academic supervision. However, as observed in both schools, the operationalization of these policies requires localized implementation models that consider school-specific contexts, vocational curriculum demands, and industry linkages. This echoes Glewwe and Muralidharan's [34]view that education policy effectiveness is determined not only by its design but also by how it is interpreted, adapted, and executed at the local level through sustained support, training, and monitoring mechanisms.

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5 Conclusion

This study concludes that the management of academic supervision at SMKN 1 and SMKN 2 Leles reflects a structured and partially collaborative approach, with clear planning documents, standardized observation instruments, and active involvement of key stakeholders in the preparation stage. The use of participatory planning and observation tools based on pedagogic competence indicators demonstrates principals' awareness of their instructional leadership role in improving teaching quality.

In implementation, the integration of clinical supervision and reflective feedback has contributed to the enhancement of teachers' pedagogic competence, particularly in lesson planning, classroom management, and assessment practices. However, disparities in teacher engagement, time constraints, and limited professional development opportunities hinder optimal results. Evaluation and follow-up practices show progress toward evidence-based decision-making, but the absence of standardized impact assessment systems limits the ability to measure supervision outcomes on student learning performance.

Supporting factors such as leadership commitment, teacher willingness, and adequate facilities create a conducive environment for supervision. Conversely, inhibiting factors include insufficient training support, inconsistent follow-up, and the lack of systemic integration between supervision findings and broader school development plans.

The research highlights the need for principals to strengthen academic supervision through capacity-building programs, structured mentoring, and the development of localized implementation models that align with vocational school contexts. Effective academic supervision management should integrate strategic planning, consistent implementation, data-driven evaluation, and sustainable follow-up mechanisms to optimize teachers' pedagogic competence and, ultimately, improve the quality of vocational education.

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