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Academic Supervision by Headteachers in the Development of Teachers' Professional Competence: A Systematic Literature Review

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Abstract. Academic supervision by headteachers is one strategy for developing teachers' professional competences, but its implementation is not always accompanied by ongoing professional development. This study aims to analyse the stages and characteristics of academic supervision, identify the mechanisms and conditions associated with the development of teachers' professional competences, and integrate these findings into a conceptual framework. The study employed a Systematic Literature Review (SLR) using a thematic-narrative synthesis technique on 10 primary studies published between 2020 and 2026, with reporting in accordance with PRISMA 2020. The synthesis identified four domains: the academic supervision cycle, professional development mechanisms, supporting and inhibiting conditions, and the outcomes of teachers' professional competence development. Supervision takes place through planning, observation, analysis, feedback and follow-up, whilst its development mechanisms involve reflection, professional dialogue, coaching and collaborative improvement. The implementation of supervision is related to the supervisor's competence, teacher engagement, interpersonal relationships and institutional support. This research has produced the Integrative Academic Supervision Professional Competence Framework, which integrates these four domains as an interpretative framework for understanding the interrelationships between academic supervision and the development of teachers' professional competences. This framework makes a conceptual contribution to the management of academic supervision oriented towards continuous professional development; however, it does not yet constitute an empirically validated causal model.

Keywords. Academic supervision; Headteachers; Teachers' professional competences; Professional development.

Abstrak. *Supervisi akademik kepala sekolah merupakan salah satu strategi pengembangan kompetensi profesional guru, tetapi pelaksanaannya tidak selalu diikuti pembinaan yang berkelanjutan. Penelitian ini bertujuan menganalisis tahapan dan karakteristik supervisi akademik, mengidentifikasi mekanisme serta kondisi yang berkaitan dengan pengembangan kompetensi profesional guru, dan mengintegrasikan temuan tersebut dalam kerangka konseptual. Penelitian menggunakan Systematic Literature Review (SLR) dengan teknik sintesis tematik-naratif terhadap 10 studi primer yang diterbitkan pada periode 2020-2026, dengan pelaporan mengacu pada PRISMA 2020. Hasil sintesis mengidentifikasi empat domain, yaitu siklus supervisi akademik, mekanisme pengembangan profesional, kondisi pendukung dan penghambat, serta hasil pengembangan kompetensi profesional guru. Supervisi berlangsung melalui perencanaan, observasi, analisis, umpan balik, dan tindak lanjut, sedangkan mekanisme pengembangannya melibatkan refleksi, dialog profesional, coaching, dan perbaikan kolaboratif. Pelaksanaan supervisi berkaitan dengan kompetensi supervisor, keterlibatan guru, hubungan interpersonal, dan dukungan kelembagaan. Penelitian ini menghasilkan Integrative Academic Supervision Professional Competence*

Framework yang mengintegrasikan keempat domain sebagai kerangka interpretatif untuk memahami keterkaitan supervisi akademik dan pengembangan kompetensi profesional guru. Kerangka tersebut memberikan kontribusi konseptual bagi pengelolaan supervisi akademik yang berorientasi pada pengembangan profesional berkelanjutan, tetapi belum merupakan model kausal yang tervalidasi secara empiris.

Kata Kunci: *Supervisi akademik; Kepala sekolah; Kompetensi profesional guru; Pengembangan profesional.*

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INTRODUCTION

Teachers' professional competences encompass mastery of subject matter, structure and scientific concepts, as well as continuous professional development through reflective practice (Pendidikan & Kebudayaan, 2016). These competences play a vital role in ensuring that the quality of learning is relevant and adaptable to learners' needs. Changes in learners' characteristics, technological developments and the demands of contextual learning require teachers to develop their competences through teaching practice and continuous professional development (Cirkony dkk., 2024; Noviyanti dkk., 2024). The development of these competencies is also linked to school leadership. Amzat et al., through a study of 430 teachers in Jakarta, found that the headteacher's instructional leadership has a direct impact on teachers' professional development (Amzat dkk., 2022).

In this context, academic supervision serves as a tool for headteachers to identify teachers' professional development needs and to guide teaching practices in a targeted manner, rather than merely checking that administrative paperwork is in order (Sugiar dkk., 2024; Zahiq & Kusuma, 2025). Haryanto found that academic supervision in madrasah tsanawiyah is carried out through planning, implementation, monitoring and evaluation (Haryanto, 2024). In line with this, (Julianda dkk., 2024) emphasises the importance of implementing and following up on supervision in the development of teachers' professional competences, whilst (Basri dkk., 2025) links the implementation of supervision to the professional development of teachers. Nevertheless, its implementation still faces challenges in the form of the headteacher's limited time and the teachers' readiness.

The effectiveness of academic supervision is determined not only by the implementation of its various stages, but also by the quality of the interaction between the headteacher and the teachers. Muslih points out that humanistic academic supervision utilises *coaching*, post-supervision discussions and self-reflection as forms of teacher development (Muslih dkk., 2025). In the context of instructional leadership,(Kilag & Sasan, 2023) emphasises the importance of feedback, collaboration, trust and open communication in supporting teachers' professional development. The findings suggest that the results of classroom observations need to be followed up through dialogue and reflection so that they can form the basis for improving teaching practice, rather than merely serving as a tool for assessing teachers' performance.

Although it plays a vital role in teachers' professional development, the implementation of academic supervision still faces various obstacles. Haryanto identifies the headteacher's lack of time as one of the obstacles to the implementation of supervision (Haryanto, 2024). Whereas (Hardiyanti & Madjid, 2024) found that budgetary constraints and differences in teachers' abilities also influence the professional development process. Warhamni et al. also examined various challenges in the implementation of academic supervision in schools in Indonesia (Warhamni dkk., 2024). These obstacles indicate that the implementation of supervision is not necessarily followed by ongoing professional development, particularly where the findings of observations are not followed up with mentoring and the evaluation of improvements to teaching.

A number of studies have examined the contribution of academic supervision to the development of teachers' competences and professionalism. Syafitri et al. investigated the influence of academic supervision and teachers' commitment on professional competence (Syafitri dkk., 2023), whereas (Widyasari & Husain, 2025) to identify barriers to clinical supervision, particularly differences in perception, supervisors' limited ability to provide feedback, and teachers' heavy workloads. Through a systematic literature review of 20 articles, (Puspitasari dkk., 2025) shows that *coaching*-based supervision supports pedagogical competence, reflection, professional collaboration and learning innovation. These studies have elucidated the relationship between supervision and teacher competences, the mechanisms of professional development, and the challenges to its implementation. However, the interrelationship between the supervision cycle, professional development mechanisms, implementation conditions, and the outcomes of teachers' professional competence development still requires a more integrated synthesis. This gap underlies the need to develop a conceptual framework that links these four components based on the findings of previous research.

In light of this gap, this study aims to analyse the stages and characteristics of academic supervision by headteachers, to identify the mechanisms and conditions relating to the development of teachers' professional competences, and to synthesise the relationships between these components within a conceptual framework. Using a *Systematic Literature Review* (SLR) approach, this study integrates empirical findings regarding the supervision cycle, professional development mechanisms, implementation conditions, and the outcomes of teacher competence development. The study's contribution lies in the development of the *Integrative Academic Supervision Professional Competence Framework* as an interpretative framework that explains the interrelationships between these four components, rather than as an empirically validated model of causal relationships.

METHODS

This study employed the *Systematic Literature Review* (SLR) method to identify, evaluate and synthesise the findings of previous research on headteachers' academic supervision in the development of teachers' professional competences. The analysis was conducted using thematic-narrative synthesis techniques through the comparison and integration of findings across studies (Maeda dkk., 2022), whilst the reporting of the systematic review process follows the PRISMA 2020 guidelines (Page dkk., 2021). The research aims to answer three questions: (1) what are the stages and characteristics of academic supervision by headteachers; (2) through what mechanisms and under what conditions is academic supervision linked to the development of teachers' professional competences; and (3) how can the relationship between the supervision process, development mechanisms, implementation conditions and the outcomes of teachers' professional competence development be synthesised within a conceptual framework.

A literature review was conducted in using Scopus, ERIC, Google Scholar and Garuda, with searches via SINTA carried out in accordance with the functions required for this study. The search utilised a combination of the keywords *academic supervision*, *instructional supervision*, *teacher professional competence* and *teacher professional development*, along with their Indonesian equivalents, using Boolean operators tailored to each source. Inclusion criteria comprised peer-reviewed journal articles published between 2020 and 2026, utilising empirical data, and discussing headteachers' academic supervision in relation to teachers' professional competence or professional development. Duplicate articles, irrelevant publications, articles without full text, and non-empirical publications were excluded from the synthesis. Literature review articles were used as supporting sources to identify research developments and gaps in the literature, but were not included as primary studies.

The literature review was conducted through the stages of identification, screening, eligibility assessment and study selection, in accordance with the PRISMA 2020 guidelines (Page dkk., 2021). The identified articles were screened to remove duplicates, then selected based on their titles, abstracts and the full text's compliance with the inclusion and exclusion criteria. Studies meeting the criteria were subsequently assessed for methodological quality using the *JBI Critical Appraisal Tools* in accordance with their study design. Following this process, a total of 10 primary studies were selected as the basis for the synthesis. Data from each study were extracted into a matrix covering study characteristics, stages of supervision, professional development mechanisms, enabling and hindering factors, and the outcomes of teacher competence development. This information was used as the basis for analysing and comparing findings across studies.

Data from 10 primary studies were analysed using thematic-narrative synthesis techniques, involving coding, thematic grouping and cross-study comparison of findings (Maeda dkk., 2022). The analysis was conducted by identifying similarities, differences and interrelationships between the findings regarding the stages of academic supervision, professional development mechanisms, implementation conditions and the outcomes of teacher competence development. The themes that emerged were then integrated to develop the *Integrative Academic Supervision Professional Competence Framework* as an interpretative framework that explains the conceptual relationships between components, rather than as a causally linked model that has been empirically tested.

RESEARCH FINDINGS AND DISCUSSION

Results

Characteristics of the Studies Analysed

The literature review yielded 10 primary studies examining headteachers' academic supervision in relation to teachers' professional competence and professionalism. The studies analysed varied in terms of research design and focus. Some studies examined the relationship between academic supervision and teachers' competences or professionalism, whilst others described the implementation of supervision, coaching mechanisms, and factors influencing its implementation. This diversity formed the basis for comparing the findings based on the characteristics and contributions of each study to the focus of the synthesis. Details of the studies are presented in the following table:

Table 1. Characteristics of the Studies Analysed

Study	Year	Approach	Main Focus	Outcome
Syafitri, Irsyad, Rifma, & Yahya	2023	Quantitative	Academic supervision by the headteacher	Professional competences
Jabar, Miyono, & Rasiman	2024	Qualitative	Planning, implementation, follow-up	Teachers' professionalism
Mursyidah & Tsurayya	2024	Quantitative	Supervision, experience, discipline	Professional competences
Santosa, Widyawati, Sutopo, & Narimo	2024	Case study	Implementation of academic supervision	Professional competences
Hardiyanti & Madjid	2024	Qualitative	Teacher supervision and professional development	Professional competences
Hasanah & Juansah	2025	Correlational	Supervision and work discipline	Teachers' professionalism
Muslih, Bustari, Rubi'ah, & Hingmane	2025	Case study	Humanistic academic supervision	Competence/professionalism
Miftakhi & Malagola	2025	Qualitative	Headteacher supervision programme	Teachers' professionalism
Shodiqin & Fatimah	2025	Case study	Academic supervision and professionalism	Teachers' professionalism
Afrizul, Irsyad, Setiawati, & Afriansyah	2025	Correlational	Academic supervision by the headteacher	Teachers' professionalism

In general, the characteristics of the studies indicate that research on academic supervision is still predominantly set in the Indonesian context and employs a field-based approach. Quantitative studies tend to examine the relationship between, or the contribution of, academic supervision to teachers' competences or professionalism, whilst qualitative studies focus more on describing the supervision process, forms of guidance, and barriers to implementation. Review (Syafitri dkk., 2023b), directly examines the impact of the headteacher's academic supervision on the professional competence of teachers at state lower secondary schools. Meanwhile, (Santosa dkk., 2024) uses case studies to describe the implementation of academic supervision by headteachers in developing the professional competences of primary school teachers.

Stages and Characteristics of Academic Supervision by the Headteacher

A synthesis of primary studies indicates that academic supervision by headteachers is carried out through interrelated stages, comprising planning, classroom observation, analysis or evaluation, the provision of feedback, and follow-up. Planning involves setting the objectives and focus of

supervision, whilst observation is used to gather information on teachers' teaching practices. The results of the observation then form the basis for evaluation, the provision of feedback, and the determination of follow-up guidance. This sequence highlights the characteristics of academic supervision as a structured process geared towards identifying teachers' professional development needs.

Jabar et al. reported that supervision was carried out through planning, pre-observation, observation, assessment, guidance and follow-up in the form of professional development activities, such as subject-specific teacher working groups (MGMP), workshops and training sessions (Jabar dkk., 2024). Meanwhile,(Muslih dkk., 2025) identify a humanistic approach to supervision that begins with an analysis of teachers' needs, followed by classroom observation, *coaching*, direct guidance, evaluative discussions and self-reflection. Both studies show similarities in the stages of needs identification, classroom observation and follow-up, but place different emphases on the forms of guidance provided. The study (Jabar dkk., 2024) emphasises professional development activities as a follow-up, whilst (Muslih dkk., 2025) emphasises dialogic guidance and teacher reflection in the supervision process.

Mechanisms for Academic Supervision in the Development of Teachers' Professional Competence

The findings of the synthesis indicate that the mechanisms for teachers' professional development within academic supervision include the provision of feedback, reflection, professional dialogue, mentoring and *coaching*. Hardiyanti and Madjid identified the implementation of academic supervision accompanied by professional development activities through training, workshops and Subject Teachers' Working Groups (MGMP) (Hardiyanti & Madjid, 2024). Meanwhile, (Muslih dkk., 2025) found that humanistic academic supervision involves *coaching*, direct guidance, post-supervision discussions, and self-reflection. The findings of both studies reveal a variety of mentoring mechanisms, ranging from structured professional development activities to guidance and reflection integrated into the supervision process.

A comparison of these findings reveals that the utilisation of learning observation results is a vital component of the mechanism for teachers' professional development. Observation results can serve as the basis for providing feedback, discussing teaching practices, and determining follow-up improvement measures. In this context, academic supervision not only provides information on the delivery of teaching but also offers teachers the opportunity to reflect on their practice through mentoring and professional dialogue. This mechanism forms one of the components in the synthesis of the relationship between the supervision process and the development of teachers' professional competences.

Faktors that Support and Hinder Academic Supervision

The findings of the synthesis identified a number of factors that either facilitate or hinder the implementation of academic supervision, particularly in relation to individual capabilities and institutional support. Hardiyanti and Madjid found that time constraints, budgetary limitations and differences in teachers' capabilities act as barriers to the implementation of professional development (Hardiyanti & Madjid, 2024). Meanwhile, (Muslih dkk., 2025) identified limited facilities and geographical challenges as obstacles to academic supervision in schools in frontier and outermost regions. Both studies showed that limited resources and the characteristics of the school environment are significant issues in the implementation of academic supervision.

In terms of supporting factors, (Muslih dkk., 2025) reported on the use of digital technology and the involvement of the supervision team as a means of addressing the limitations in the implementation of supervision. These findings indicate that institutional support can assist in the

delivery of professional development when headteachers face constraints relating to time, facilities and geographical conditions. Overall, the synthesis results indicate that the implementation of academic supervision is influenced by the availability of resources, the capacity of those carrying out the supervision, and organisational support; consequently, the sustainability of professional development must take into account the specific circumstances of each educational institution.

The Impact of Academic Supervision on Teachers' Professional Competence

The results of the synthesis indicate that the relationship between academic supervision and teachers' professional competence has been examined using different research approaches. Syafitri et al. investigated the influence of the headteacher's academic supervision and teachers' commitment on the professional competence of lower secondary school teachers (Syafitri dkk., 2023a). Whereas (Mursyidah & Tsurayya, 2024) identifies academic supervision, alongside teaching experience and work discipline, as factors associated with the professional competence of MTs teachers. Both studies indicate that academic supervision is considered one of the factors associated with teachers' professional competence, alongside other individual factors.

Meanwhile,(Santosa dkk., 2024) describes the implementation of academic supervision by headteachers in the development of primary school teachers' professional competences, whilst (Hardiyanti & Madjid, 2024) to examine the supervision and professional development of teachers through competence-building activities. A comparison of these studies reveals two distinct research orientations: examining the relationship between supervision and professional competence, and explaining the process of professional development aimed at enhancing teachers' competences. This distinction highlights the need to differentiate between evidence of relationships between variables and descriptions of how supervision is carried out when interpreting its contribution to teachers' professional competence.

Integrative Synthesis

Based on a cross-study thematic synthesis, the research findings were grouped into four domains, namely the *academic supervision cycle*, *professional development mechanisms*, *enabling and constraining conditions*, and *professional competence outcomes*. These four domains summarise the aspects of process, mechanisms, implementation conditions and outcomes examined in the research on academic supervision. A summary of the findings is presented in the following table:

Table 2. Thematic Synthesis of Academic Supervision in the Development of Teachers' Professional Competence

Domain Synthesis	Summary of Findings	Supporting Studies	Conceptual Links
The academic supervision cycle	Supervision involves planning, observation, evaluation, feedback and follow-up.	(Jabar dkk., 2024) Muslih dkk. (2025)	To provide a framework for the implementation of academic supervision.
Professional development mechanisms	Development is achieved through feedback, dialogue, reflection, mentoring and coaching.	Hardiyanti & Madjid (2024) Muslih dkk (2025)	Explaining how the findings of supervision are utilised for teachers' professional development.
Enabling and hindering factors	Time, budget, facilities, staff capacity and institutional support relating to the	Hardiyanti & Madjid, (2024) Muslih dkk (2025)	Providing context that may support or limit the

	implementation of supervision.		sustainability of professional development.
Outcomes of professional competence development	The study examines the relationship between supervision and professional competence, as well as the implementation of guidance aimed at teacher development.	Syafitri dkk., (2023) Mursyidah & Tsurayya, (2024) Santosa dkk. (2024)	Outlines the scope of the research findings and the types of evidence available.

A synthesis of the four domains indicates that academic supervision comprises the dimensions of process, professional development mechanisms, implementation conditions, and outcomes of teachers' professional competence development, all of which are conceptually interrelated. The supervision cycle provides a framework for implementation, whilst professional development mechanisms describe the utilisation of supervision outcomes through feedback, reflection and mentoring. The implementation of these mechanisms is linked to individual and institutional conditions that may support or limit the sustainability of professional development. Meanwhile, the outcomes of professional competence development are examined based on the evidence reported in each study. This pattern of interrelationships forms the basis for the formulation of the *Integrative Academic Supervision Professional Competence Framework*, which is explained in further detail in the discussion section.

Discussion

Academic Supervision as a Cycle of Professional Development for Teachers

The findings of the synthesis indicate that academic supervision should not be understood merely as a series of monitoring procedures, but must be viewed as an ongoing process of professional development. The interconnection between observation, evaluation, feedback and follow-up demonstrates that supervision serves both a diagnostic function to identify teachers' needs and a developmental function to support improvements in teaching practice. This interpretation is consistent with (Julianda dkk., 2024; Suryamah dkk., 2026), which discusses the implementation of supervision in the development of teachers' professional competences, as well as (Muslih dkk., 2025), which emphasises the identification of needs and guidance through a humanistic approach to supervision. The synthesis of this research makes it clear that the value of developing supervision lies in the use of observation findings as the basis for guidance, rather than merely in the implementation of its stages.

This interpretation relates to a shift in the orientation of supervision from administrative compliance towards professional development. Abdullah et al. discuss the shift in the orientation of supervision from administrative inspection towards *coaching*-based guidance (Abdullah et al., 2025), whilst (Kusumadipraja dkk., 2025; Mujahidin dkk., 2025) to examine models and approaches to supervision and their implications for improving learning. In the context of the findings of this study, this shift highlights the importance of positioning teachers as active participants in the supervision process, rather than merely as those being assessed. Development-oriented supervision needs to provide teachers with the opportunity to understand the results of observations, identify areas for improvement, and plan follow-up actions in line with the learning challenges they face.

The implications of these findings for the management of academic supervision are the need to ensure continuity between the implementation of supervision and follow-up measures for teacher development. It is not enough for headteachers merely to draw up timetables and carry out observations; they must also manage the outcomes of supervision as the basis for determining training needs and monitoring improvements in teaching practice. Therefore, the assessment of supervision quality should not only focus on programme implementation but also take into account the quality of feedback, the continuity of support, and evidence of improvements in teaching practice. This interpretation is a conceptual implication of the synthesis results, which still require further empirical testing.

Feedback, Reflection and Coaching as Development Mechanisms

The findings of the synthesis indicate that the contribution of academic supervision to the development of teachers' professional competences needs to be understood through the professional learning mechanisms that accompany its implementation. Feedback, reflection and professional dialogue enable the findings of observations to be utilised to identify needs and plan improvements to teaching. Gulo et al. examined *coaching*-based supervision in the development of teachers' pedagogical competences (Gulo dkk., 2026), whereas (Afaidi dkk., 2026) discuss the implementation of *coaching*-based academic supervision, from planning through to evaluation and performance improvement. Both studies reinforce the relevance of a dialogic approach to supervision, although the outcomes of the development of pedagogical and professional competences need to be conceptually distinguished. In the context of this study, feedback is understood not merely as the communication of assessment results, but as an opportunity for teachers to reflect on their teaching practice and identify their professional development needs.

The role of *coaching* in academic supervision has also been highlighted in previous research (Puspitasari dkk., 2025), Through a systematic literature review, this study identifies the relationship between *coaching*-based supervision and the development of pedagogical competence, reflective practice, professional collaboration and learning innovation. Meanwhile, (Yusnidar dkk., 2024) examining TIRTA *coaching*-based headteacher supervision in the development of teachers' professionalism and competence. Both studies highlight the importance of mentoring that provides space for teachers to identify learning issues, discuss alternative solutions, and plan follow-up actions. This interpretation broadens the understanding of academic supervision as a capacity-building activity involving the active participation of teachers, rather than merely the delivery of instructions by the headteacher.

Based on this comparison, feedback, reflection and *coaching* can be understood as mechanisms that link the implementation of supervision with opportunities for teachers' professional development. Feedback provides information on teaching practice; reflection helps teachers understand where improvements are needed; whilst *coaching* supports the formulation of more targeted development steps. The interrelationship between these three elements indicates that the quality of supervision cannot be assessed solely on the basis of the conduct of observations, but must also take into account the headteacher's ability to facilitate professional learning and follow-up guidance. This explanation constitutes a conceptual interpretation derived from a synthesis of the literature and therefore cannot yet be treated as evidence of a causal relationship between supervisory mechanisms and improvements in teachers' professional competence.

Contextual Conditions as Determinants of the Quality of Supervision

The findings of the synthesis indicate that the implementation of academic supervision needs to be understood in relation to individual, relational and institutional contexts. These contexts explain why the implementation of supervision, even when following similar stages, may encounter

different opportunities and obstacles. One issue that requires attention is the relationship between the assessment and development functions within academic supervision. Khawadits and Prasojo have identified a sense of awkwardness and psychological tension amongst teachers during the implementation of *coaching*-based supervision, which can limit openness during the mentoring process (Khawadits & Prasojo, 2025). These findings underscore the importance of fostering dialogue and trust between headteachers and teachers so that the outcomes of supervision can be discussed as a basis for professional development, rather than merely as a performance appraisal.

In addition to relational factors, institutional support also plays a key role in the sustainability of academic supervision. Hardiyanti and Madjid identified time constraints, budgetary limitations and differences in teachers' abilities as barriers to professional development (Hardiyanti & Madjid, 2024). Meanwhile, (Aulia & Alimulloh, 2026; Muslih dkk., 2025) indicates efforts to address the limitations in the implementation of supervision through the involvement of supervision teams and the use of digital technology. This comparison suggests that the quality of guidance is not only related to the headteacher's ability as a supervisor, but also to the availability of resources and the management of organisational support. Therefore, the implementation of supervision needs to be supported by effective time management, the allocation of tasks, and the provision of facilities that enable follow-up guidance to take place on an ongoing basis.

Within the conceptual framework of this study, individual, relational and institutional conditions are positioned as factors that may support or constrain the implementation of academic supervision. The supervisor's competence relates to their ability to provide guidance and feedback; trust and open communication create space for professional dialogue; whilst institutional support provides the resources necessary for the sustainability of the mentoring process. This interpretation suggests that the implementation of supervision cannot be fully understood through formal procedures alone, but must take into account the conditions that accompany the process of teachers' professional learning. This interrelationship constitutes a conceptual explanation based on a synthesis of the literature and still requires empirical testing to determine the contribution of each condition to the development of teachers' professional competences.

Academic Supervision and the Development of Teachers' Professional Competence

The findings of the synthesis indicate that the contribution of academic supervision to the development of teachers' professional competences needs to be understood in relation to subject-matter expertise, reflective abilities, and continuous professional development. Although academic supervision relates to the improvement of teaching practice, professional competence must be distinguished from pedagogical competence, which encompasses the planning, implementation and evaluation of teaching. Santosa et al. examined the implementation of academic supervision in the development of professional competence among primary school teachers (Santosa dkk., 2024), whereas (Hardiyanti & Madjid, 2024) highlight teacher development through supervision and professional development activities. Both studies provide a basis for understanding supervision as part of teacher development efforts, although the implementation of such development does not always result in a directly measurable improvement in competence.

The findings of quantitative research provide a different perspective on the relationship between academic supervision and teachers' professional competence. Syafitri et al. examined the influence of academic supervision and teachers' commitment on professional competence (Syafitri dkk., 2023), whereas (Mursyidah & Tsurayya, 2024) examined academic supervision alongside teaching experience and work discipline as factors relating to teachers' professional competence. This comparison indicates that academic supervision needs to be understood in relation to other individual factors. Whilst quantitative research provides evidence regarding the relationships

between variables, qualitative research helps to explain how supervision is carried out and utilised in the professional development process. The integration of these two types of evidence broadens our understanding of academic supervision without assuming that its implementation directly leads to an improvement in teachers' professional competence.

From the perspective of continuous professional development, academic supervision has the potential to provide teachers with opportunities to identify their needs, reflect on their abilities, and plan their professional development. Puspitasari et al. highlight the relevance of the *coaching* approach to reflective practice, professional collaboration and innovation in learning (Puspitasari dkk., 2025), whereas (Noviyanti dkk., 2024) emphasises the importance of continuous professional development in enhancing teachers' competences. The interconnection between these two studies supports the argument that academic supervision should not be limited to one-off assessments, but should be integrated with ongoing professional development programmes. However, the sustainability of supervision and changes in teachers' competences still require empirical testing to ascertain the extent to which the mentoring process leads to long-term professional development.

Integrated Academic Guidance within the Professional Competence Framework

The findings of this research have resulted in the *Integrative Academic Supervision–Professional Competence Framework* as a conceptual framework for understanding the relationship between academic supervision and the development of teachers' professional competences. This framework integrates four domains: the academic supervision cycle, professional development mechanisms, supporting and inhibiting conditions, and the outcomes of teachers' professional competence development. This integration broadens the understanding of academic supervision, which previously tended to treat implementation procedures, guidance mechanisms, and the outcomes of teacher development as distinct areas of study. Abdullah et al. discuss the shift in supervision from administrative compliance towards *coaching-based guidance* (Abdullah dkk., 2025), whereas (Puspitasari dkk., 2025) highlights the role of *coaching*-based supervision in supporting teachers' reflection and professional development. This research framework links these aspects with the conditions of implementation and the outcomes of professional competence development within a single conceptual framework.

The interrelationships between the domains within this framework indicate that the supervision cycle provides a framework for implementation, whilst the professional development mechanisms explain how the outcomes of supervision can be utilised through reflection, dialogue, mentoring and collaborative improvement. The implementation of these mechanisms is linked to individual, relational and institutional conditions, such as the supervisor's competence, trust, teacher engagement and resource support. Meanwhile, the outcomes of professional competence development are understood on the basis of evidence reported in primary studies, particularly those relating to teachers' subject-specific knowledge and professional development. These inter-domain relationships are conceptual in nature and therefore do not imply that every stage of supervision directly results in an improvement in professional competence.

This integrative framework explains that the contribution of academic supervision to the development of teachers' professional competence must be understood through the interconnection

between the guidance process and the conditions under which it is carried out. Supervision carried out through similar stages may encounter different conditions regarding the provision of feedback, reflection and follow-up. Therefore, this framework identifies professional development mechanisms and implementation conditions as key components for understanding variations in

the practice and outcomes of academic supervision. The relationships between these four domains are illustrated in the following figure:



Figure 1. An Integrative Framework for Academic Supervision and Teachers' Professional Competences

The main contribution of this framework lies in the integration of previous research findings into an explanation that links the process of supervision, mentoring mechanisms, conditions of implementation, and the development of teachers' professional competences. In practical terms, the framework can serve as a basis for headteachers in designing supervision that is needs-based, dialogic, reflective and follow-up-oriented. From an academic perspective, this framework offers a conceptual proposition that can be developed through empirical research to test the relationships between domains across various levels and contexts of education. As the framework is not yet a validated causal model, its application must take into account the characteristics and needs of each educational institution.

CONCLUSION

The findings of a systematic literature review indicate that headteachers' academic supervision is linked to the development of teachers' professional competence through the interconnection between the supervision cycle, professional learning mechanisms, and implementation conditions. Supervision not only encompasses planning, observation, evaluation, feedback and follow-up, but also provides opportunities for teachers to engage in reflection, professional dialogue and continuous improvement. The main contribution of this research is the formulation of the Integrative Academic Supervision–Professional Competence Framework, which integrates four domains: the academic supervision cycle, professional development mechanisms, enabling and inhibiting conditions, and the outcomes of teachers' professional competence development. This framework provides a conceptual explanation of the interrelationships between these domains, rather than empirically proven causal relationships.

In practical terms, the research findings emphasise the importance of managing academic supervision in a way that is oriented towards teachers' professional development needs, rather than

merely fulfilling administrative oversight requirements. Headteachers need to optimise feedback, reflection and mentoring as the basis for follow-up guidance, with institutional support that enables the professional development process to take place on a continuous basis.

This study has limitations regarding the number of primary studies analysed, the diversity of research designs, and the predominance of the Indonesian educational context; therefore, the application of the findings to a broader context must be undertaken with caution. The lack of longitudinal evidence also prevents a robust explanation of the long-term development of teachers' professional competencies. Furthermore, the resulting integrative framework remains conceptual in nature and has not yet been empirically validated. Future research is recommended to examine the interrelationships between the four domains using quantitative, qualitative, or mixed-methods approaches across various levels and educational contexts.

Statement on the Use of Artificial Intelligence (AI)

The authors used AI tools to check grammar, clarify wording, and improve transitions between paragraphs. They reviewed the suggested edits before incorporating them. The authors conducted the research, interpreted the findings, and drew the conclusions. They take responsibility for the final text.

Author Contribution Statement

Uswatun Hasanah developed the study objectives, led the investigation, and wrote the initial draft. Aaf Afiah helped gather and organise the research materials and contributed to drafting the findings. M.Ilkham Suherlan reviewed the literature and helped relate it to the findings in the discussion. Rijal Firdaos advised on the methodology and reviewed whether the analysis addressed the research questions. Uyu Muawanah contributed to interpreting the findings and revising the manuscript. All authors reviewed and approved the final version for submission.

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Conflict of Interest Statement

The authors declare that they have no financial or non-financial interests that could reasonably be perceived to influence the conduct or reporting of this study.

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